

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 706 – HIGHWAYS

Transport – Railway

46TR – East Rail Extension – essential public infrastructure works for the Sheung Shui to Lok Ma Chau Spur Line

Members are invited to recommend to Finance Committee the upgrading of **46TR** to Category A at an estimated cost of \$656.5 million in money-of-the-day prices for the essential public infrastructure works for the Sheung Shui to Lok Ma Chau Spur Line.

PROBLEM

The Sheung Shui to Lok Ma Chau Spur Line (the Spur Line) is planned to commence operation by mid-2007. There is no supporting cross-boundary control facilities at the Lok Ma Chau (LMC) Terminus, passenger linkage facilities connecting the LMC Terminus with the Huanggang Station on the Shenzhen side, and access road of sufficient width for the LMC Terminus.

PROPOSAL

2. The Director of Highways, with the support of the Secretary for the Environment, Transport and Works, proposes to upgrade **46TR** to Category A at an estimated cost of \$656.5 million in money-of-the-day (MOD) prices for the construction of the essential public infrastructure works (EPIW) for the Spur Line.

/PROJECT

PROJECT SCOPE AND NATURE

3. The scope of **46TR** comprises –
- (a) fitting-out, fixtures and furniture and equipment for cross-boundary facilities for the government portion of the LMC Terminus, including 112 immigration counters, 40 customs counters and facilities for maintenance of order and security, quarantine check and port health control;
 - (b) construction of the passenger linkage facilities between the LMC Terminus and the Huanggang Station, which include -
 - (i) a 124-metre (m) section of the 16.5-m wide double-deck passenger bridge (the Passenger Bridge) up to the boundary of the Hong Kong Special Administrative Region (HKSAR), with travelators, air-conditioning as well as security surveillance and electrical and mechanical (E&M) equipment; and
 - (ii) a 15-m long, 16.5-m wide double-deck link bridge (the Link Bridge) to connect the Passenger Bridge to the LMC Terminus, with two emergency staircases, air-conditioning and E&M equipment; and
 - (c) widening and upgrading of an existing access road from a single-lane carriageway to a two-lane carriageway with 1.6-m wide footpath to serve as an emergency access to the LMC Terminus. The access road comprises -
 - (i) a 700-m section of LMC Road between Chau Tau Tsuen and the Closed Area Boundary;
 - (ii) a 1.1-kilometre (km) long village road between the Closed Area Boundary and Border Road; and
 - (iii) a 700-m section of Border Road between the village road and the LMC Terminus including a 70-m long vehicular bridge.

/A

————— A site plan and the sections of the EPIW are at the Enclosure.

4. The Kowloon-Canton Railway Corporation (KCRC) commenced construction of the Spur Line in October 2002. We plan to commence works under **46TR** in February 2003 for completion by mid-2007 to tie in with the commissioning of the Spur Line.

JUSTIFICATION

5. Lo Wu boundary crossing is hitherto the only rail-passenger boundary crossing between the HKSAR and the Mainland, handling about 83% of the land-based passenger traffic, and is becoming saturated. The congestion at Lo Wu is particularly acute during weekends and festive periods. The average daily patronage from January to November 2002 reached 261 000. The patronage could reach 340 000 or above during weekends and festive days. Due to closer social and economic ties of the HKSAR with the Mainland, the cross-boundary passenger traffic demand is expected to continue to grow in the near future.

6. As short-term relief measures, the Administration has installed a pair of escalators at the departure and arrival halls to allow contra-flow operation to improve the passenger circulation. However, physical constraints make any substantial increase in the handling capacity of Lo Wu boundary crossing impracticable.

7. To meet the growing cross-boundary passenger demand and to ease the congestion at Lo Wu, KCRC will construct and operate the Spur Line, a rail extension of 7.4 km, to connect the existing Sheung Shui Station of the East Rail to a new boundary crossing at LMC which serves as the second rail-passenger boundary crossing point. A package of EPIW has to be put in place so that the railway boundary crossing could become functional. The proposed cross-boundary facilities can cater for a daily two-way passenger flow of 150 000 and greater passenger volume during weekends and festive periods.

/Cross-boundary

Cross-boundary facilities at LMC Terminus

8. KCRC will fund and build the LMC Terminus building, including portions for use by the Government¹, and the Government will provide the facilities for cross-boundary control and immigration and customs clearance at the LMC Terminus. The government portion has a total gross floor area of 22 900 square metres (m²), which includes an arrival hall (5 400 m²), a departure hall (5 800 m²), a passageway (3 300 m²), plant rooms (2 300 m²) as well as office accommodation and internal circulation area (6 100 m²).

9. The arrival hall will accommodate 56 immigration counters and 26 customs counters whereas the departure hall will accommodate 56 immigration counters and 14 customs counters. To meet greater demand during peak periods, half of the immigration counters in the arrival hall or the departure hall can be converted for contra-flow operation, thereby increasing the maximum handling capacity in one direction by 50%. In addition, there will be facilities for maintenance of order and security, quarantine check and port health control at the LMC Terminus.

10. With a view to improving the interface and co-ordination between the railway project and the EPIW, we intend to entrust to KCRC the design and construction of the fitting-out, fixtures and furniture and equipment for the government portion that are an integral part of the LMC Terminus building. We will design, procure and supervise other fitting-out and furniture and equipment for the government portion.

Huanggang – LMC passenger linkage facilities

11. To provide passenger linkage facilities connecting the LMC Terminus and the Huanggang Station, we intend to build the double-deck Passenger Bridge² jointly with the Shenzhen Municipal People's Government to connect the

/two

¹ The LMC Terminus will provide accommodation for six government departments, including Agriculture, Fisheries and Conservation Department, Customs and Excise Department, Food and Environmental Hygiene Department, Department of Health, Hong Kong Police Force and Immigration Department. The accommodation includes offices, changing rooms, staff canteen, detention room, control rooms and armoury.

² The length of the whole Passenger Bridge between the LMC Terminus and the Huanggang Station is 243m long, with 124m within the HKSAR territory.

two stations. To improve throughput and passenger comfort, we will equip the Passenger Bridge with travelators and air-conditioning. On the HKSAR side, a 15-m long Link Bridge will connect the Passenger Bridge to the LMC Terminus. We will provide two staircases, one on each side of the Link Bridge, leading to ground level as emergency escapes.

12. The Passenger Bridge will cross over Shenzhen River where marine traffic has to be maintained at all times. To maintain the hydraulic flow of the river and to ensure unimpeded marine traffic during construction, we adopt a cable-stayed footbridge structure with only one bridge pier located in the waterway. As the cables straddling across the boundary must be constructed as an integral unit for the support of the entire Passenger Bridge (including both the portion of the HKSAR and that of Shenzhen), erection of the bridge has to be carried out by a single party. With due regard to the site accessibility, operational control and management of the Shenzhen River, we entrusted the design of the civil works of the Passenger Bridge to the Shenzhen Municipal People's Government in July 2000 and intend to entrust the construction of the Passenger Bridge structure to the Shenzhen Municipal People's Government once funding is secured. Under such arrangement, the cost of the civil works will be shared by the two governments according to the length of structure within their respective territories. We will install surveillance equipment to monitor the security of the Passenger Bridge on the HKSAR side during construction and operation.

13. As regards the design, procurement and installation of the travelators, air-conditioning and E&M works of the HKSAR portion of the Passenger Bridge, we intend to entrust these to KCRC to ensure integration of the equipment and E&M works with those for the government facilities in the LMC Terminus.

14. As regards the Link Bridge, we intend to entrust both the civil and E&M works to KCRC for implementation in conjunction with the LMC Terminus to minimise conflicts with the railway project.

Access road to LMC Terminus

15. The existing access to the proposed LMC Terminus comprising LMC Road, a village road and Border Road is very narrow and mainly serves the local

/villagers

villagers. In order that fire engines can access the terminus during emergencies and stranded passengers can be transported out by coaches when the Spur Line is out of service, we have to widen these roads including a vehicular bridge at Border Road from a single-lane to a two-lane carriageway to form an emergency access to the LMC Terminus. We will also build the emergency access road to adequate width to allow operation of public transport services in the future. We will ensure smooth traffic operation during construction through implementation of temporary traffic management schemes.

16. As the access road has to remain open for the construction traffic to the LMC Terminus, we intend to entrust the design and construction of the road widening works to KCRC to enhance interface to ensure their commissioning in parallel with the LMC Terminus.

Proposed Public Transport Interchange at the LMC Terminus

17. When we consulted the Subcommittee on matters relating to railways of the Legislative Council Panel on Transport on 27 November 2002, Members requested the Government to review the possibility of suitable provision of transport facilities at the LMC Terminus. We have therefore reviewed the matter having regard to the land, traffic, environment and security constraints.

18. Since a very large number of passengers is expected to pass through the LMC Terminus and the cross-boundary control facilities every day, it is very important to maintain an effective system of response to accidents and emergencies. It is also necessary to ensure that the road traffic to and from the Terminus is regulated and controlled carefully.

19. On the other hand, we share the view that we should, as far as practicable, facilitate the operation of other transport modes to the LMC Terminus. We, therefore, plan to separately provide a Public Transport Interchange (PTI) of about 3 500 m² adjacent to the LMC Terminus building, using an area reserved for the future expansion of the Terminus. The PTI is expected to be able to accommodate two bays for public transport services and a waiting area for passengers.

20. Due to the need for carrying passenger traffic by more efficient mass carriers, we plan to introduce franchised bus service to and from the LMC Terminus. The design of the PTI will also make allowance for space for possible operation of taxis and public light buses. We will draw up the public transport arrangement in due course. To ensure that the integrity of our boundary will not be compromised and boundary security and public order can be properly maintained, we will consider the necessary control measures to be put in place in the boundary area.

21. The proposed PTI site is the most suitable site available given the existing constraints. Further expansion of the PTI will take up portions of the surrounding conservation area and will pose constraints to the future expansion of the LMC Terminus building. The size of the PTI also needs to have regard to public order considerations. We will further work out the details of the PTI, its connection with the LMC Terminus building and the related traffic and security arrangements to tie in with the commissioning of the Spur Line.

FINANCIAL IMPLICATIONS

22. We estimate the cost of the project to be \$656.5 million in MOD prices (see paragraph 23 below), made up as follows –

	\$ million
(a) Cross boundary facilities for the government portion at the LMC Terminus	168.5
(i) fitting-out ³ , fixtures and furniture and equipment (to be entrusted to KCRC)	135.4
	/(ii)

³ This excludes finishes and ceiling of the arrival hall and departure hall, which will be carried out by KCRC as part of the construction for the LMC Terminus building.

	\$ million
(ii) remaining fitting-out and furniture and equipment ⁴ (to be carried out/ procured by the Government)	33.1
(b) Passenger linkage facilities	222.2
(i) civil works for the Passenger Bridge (to be entrusted to the Shenzhen Municipal People's Government)	126.2
(ii) civil works of the Link Bridge and E&M works for both the Passenger Bridge (Hong Kong portion) and the Link Bridge, including air-conditioning and travelators (to be entrusted to KCRC)	90.6
(iii) security surveillance equipment for the Passenger Bridge (to be installed by the Government)	5.4

/(c)

⁴ Based on an indicative list of furniture and equipment items and their estimated prices. These include office furniture, audio-visual equipment for the conference room and briefing room, x-ray baggage checker and other operation equipment. We will separately seek funding under **Head 710 - Computerisation** for the immigration clearance computer systems at the LMC Terminus in due course.

	\$ million	
(c) A 2.5-km access road to the LMC Terminus	138.6	
(i) road widening works (to be entrusted to KCRC)	127.1	
(ii) bridge widening works at Border Road (to be carried out by the Government)	11.5	
(d) On-cost ⁵ payable to KCRC	58.3	
(e) On-cost ⁶ payable to the Shenzhen Municipal People's Government	11.4	
(f) Electrical and Mechanical Services Trading Fund (EMSTF) charges ⁷	2.2	
(g) Contingencies	60.1	
Sub-total	661.3	(in September 2002 prices)

/(h)

⁵ An on-cost at 16.5% of the project base cost (i.e. items (a)(i), (b)(ii) and (c)(i) of paragraph 22) will be payable to KCRC for undertaking the technical studies, design and construction supervision of the EPIW.

⁶ Subject to further negotiation with the Shenzhen Municipal People's Government, an on-cost estimated at 9% of the project base cost (i.e. item(b)(i) of paragraph 22) will be payable to the Shenzhen Municipal People's Government for project management and construction supervision of the entrusted works.

⁷ Since the establishment on 1 August 1996 under the Trading Funds Ordinance, the EMSTF charges Government departments for design and technical consultancy services for electrical and mechanical (E&M) installations provided by EMSD. The services rendered for this project include project and contract administration for the provision and installation of X-ray baggage checkers, CCTV, intercom and other E&M works.

	\$ million
(h) Provision for price adjustment	(4.8)
Total:	<u>656.5</u> (in MOD prices)

Paragraph 22(a)(i) above covers the fitting-out (which includes finishes, partitions, doors and ceiling), fixtures (which include immigration and custom counters, signage, built-in cupboards/ cabinets/ lockers/ kennels/ benches, notice boards and blinds/ curtains), and furniture and equipment (which include closed circuit television (CCTV) system, integrated public address (PA) system and integrated telephone (PABX) system, the installation of which are integral to other installation works undertaken by KCRC) for the government portion at the LMC Terminus. Paragraph 22(b)(i) covers the foundation, piers, bridge span and finishes of the 124-m section of the 16.5-m wide double-deck Passenger Bridge within the HKSAR boundary. Paragraph 22(c)(i) covers road and drainage works together with the associated structural and landscaping works for the widening of 2.5 km long access road from a single-lane carriageway to a two-lane carriageway.

23. Subject to approval, we will phase the expenditure as follows –

Year	\$ million (Sep 2002)	Price Adjustment Factor	\$ million (MOD)
2003 – 2004	83.5	0.99250	82.9
2004 – 2005	124.5	0.99250	123.6
2005 – 2006	193.3	0.99250	191.9
2006 – 2007	149.7	0.99250	148.6
2007 – 2008	77.8	0.99250	77.2
2008 – 2009	32.5	0.99250	32.3
	<u>661.3</u>		<u>656.5</u>

/24.

24. We have derived the MOD estimate on the basis of the Government's latest forecast of trend labour and construction prices for the period 2003 to 2009. For the proposed works to be entrusted to KCRC and the Shenzhen Municipal People's Government, we will include them in their lump-sum contracts with remeasurement items without price fluctuation. For the bridge widening works to be undertaken by the Government, Drainage Services Department (DSD) will include them in the remeasurement contract with price adjustment for both **73CD**⁸ and the relevant part of **46TR** as the contract period exceeds 21 months. For the fitting-out and E&M installation to be undertaken by the Government, Architectural Services Department and Electrical and Mechanical Services Department will tender the works under remeasurement contracts without price fluctuation.

25. We estimate the annual recurrent expenditure arising from the EPIW to be \$200.9 million including \$166.9 million for the staffing for the cross-boundary control in the LMC Terminus and \$34.0 million for the operation and maintenance of the facilities.

PUBLIC CONSULTATION

26. In conjunction with KCRC, we consulted the then Yuen Long Provisional District Board (YLPDB) on 9 September 1999 on the Spur Line project including the proposed EPIW. In response to YLPDB's request, we have agreed to provide travelators in the Passenger Bridge. We also consulted the San Tin Rural Committee (STRC) on 16 July and 25 October 1999, village representatives of LMC Tsuen, Ha Wan Tsuen and Chau Tau Tsuen in December 1999, and the Yuen Long District Council (YLDC) on 1 February 2000. All parties had no adverse comment on the proposed EPIW. We held further consultation and site inspection on 19 April and 12 May 2000 with the STRC and the concerned village representatives. In response to their requests, we agreed to reprovision the existing village tracks for connection to the widened access road.

/27.

⁸ We upgraded **73CD** to Category A on 24 May 2002 at an estimated cost of \$354.2 million in MOD prices for construction of the San Tin Eastern Main Drainage Channel from Tung Chan Wai, San Tin to Shenzhen River to alleviate the risk of flooding in the low-lying areas. As the bridge widening works at Border Road under **46TR** are in close association with the works under **73CD**, we intend to entrust it to DSD for construction and site supervision. The construction works of **73CD** has commenced in October 2002 for completion in June 2006.

27. After the adoption of the bored tunnel approach for the section of the railway between Sheung Shui and Chau Tau, we consulted the YLDC again on 11 October 2001 and the STRC on 8 October 2001, 12 December 2001 and 30 April 2002. Both parties had no adverse comments on the proposed EPIW. We consulted the YLDC specifically on the proposed EPIW on 22 August 2002 and received no adverse comments.

28. We gazetted the Spur Line scheme which comprises the proposed EPIW under the Railways Ordinance on 8 October 1999 and gazetted the first and second amendments to the scheme on 28 April 2000 and 7 December 2001 respectively. We received five objections from four objectors which, amongst other issues, were related to the widening of LMC Road. Two objectors withdrew their objections unconditionally but three objections remained unwithdrawn. Details of the unwithdrawn objections are as follows -

- (a) one objector, who lodged two objections to the scheme, objected to, amongst other things, the alignment of the widened LMC Road. He also requested the Administration to provide a cycle track and access points for the locals. We explained to him the engineering and landtake constraints of the road widening works and agreed to include access points to connect the widened road with the existing village tracks. He did not withdraw his objections; and
- (b) another objector objected to, amongst other things, the land resumption and clearance of his structure for the widening of LMC Road. Despite our amendment of the resumption boundary to exclude part of his land, the objector did not withdraw his objection.

29. The Chief Executive-in-Council considered all the unwithdrawn objections and authorised the Spur Line project under the Railways Ordinance on 11 June 2002.

30. We consulted the Subcommittee on matters relating to railways of the Legislative Council Panel on Transport on 27 November 2002. Members requested the Administration to review the possibility of suitable provision of transport facilities at the LMC Terminus. We have followed up on the request as explained in paragraphs 17 to 21 above.

ENVIRONMENTAL IMPLICATIONS

31. The proposed EPIW together with the Spur Line 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 of the project. The Advisory Council on the Environment endorsed the EIA report with conditions on 26 February 2002. The Director of Environmental Protection (DEP) subsequently approved KCRC's EIA report on 11 March 2002 and issued the Environmental Permit under the EIA Ordinance on 6 April 2002.

32. The key environmental concerns of the EPIW include water quality impact due to the Passenger Bridge construction and other construction run-off, and noise impact due to access road construction. We will implement the measures recommended in the approved EIA report. The key measures include installation of temporary noise barriers and the control of noise, dust, and water quality to within established standards and guidelines through the implementation of pollution control measures. We have included in the project estimates the cost to implement these mitigation measures during construction.

33. During the planning and design stages, we have considered ways to reduce the generation of construction and demolition (C&D) materials as far as practicable. We will require the contractors to submit Waste Management Plans (WMPs) for approval. The WMPs will include appropriate mitigation measures such as identification of designated area for waste segregation prior to disposal. We will ensure that the day-to-day operations on site comply with the approved WMPs. We will separate public fill from C&D waste for disposal at appropriate locations and sort the C&D materials by category on-site to facilitate reuse/recycling in order to reduce the generation of waste. We will reuse/recycle C&D materials on-site to reduce waste generation. We estimate that the project

/will

will generate about 13 330 cubic metres (m³) of C&D materials. Of these, we will reuse about 7 660 m³ (58%) of inert C&D materials on site, about 4 420 m³ (33%) as fill in public filling areas⁹ and dispose of 1 250 m³ (9%) at landfills. The notional cost of accommodating C&D waste at landfill sites is estimated to be \$156,250 for this project (based on a notional unit cost¹⁰ of \$125/m³). We will control the disposal of public fill and C&D waste to public filling facilities and landfills respectively through a trip-ticket system. We will record the disposal, reuse and recycling of C&D materials for monitoring and auditing purpose. To further minimise the generation of C&D materials, we will encourage the contractor to use non-timber formwork and recyclable materials for temporary works.

LAND ACQUISITION

34. We will resume about 6 270 m² of agricultural land for the proposed works. The land acquisition will affect one household involving two persons. The Director of Housing will offer this family accommodation in public housing in accordance with the existing housing policy. We will charge the land acquisition and clearance costs, estimated to be \$17 million, to **Head 701** – "Land Acquisition" **Subhead 1100CA** - "Compensation and ex-gratia allowances in respect of projects in the Public Works Programme".

BACKGROUND INFORMATION

35. The Spur Line was originally included in the 1994 Railway Development Strategy as part of the West Rail (Phase II). To cope with the upsurge of cross-boundary traffic since 1996 and to relieve the increasing congestion at the Lo Wu crossing, the Government decided that the Spur Line should be taken forward ahead of the rest of the West Rail (Phase II) with a view to providing a second rail boundary crossing at LMC.

/36.

⁹ A public filling area is a designated part of a development project that accepts public fill for reclamation purposes. Disposal of public fill in a public filling area requires a licence issued by the Director of Civil Engineering.

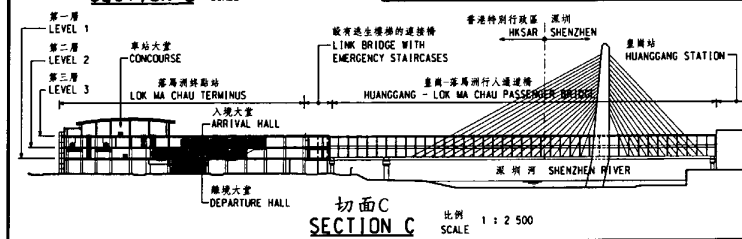
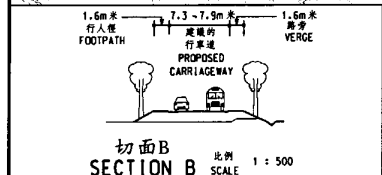
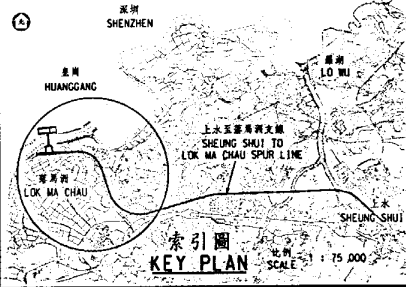
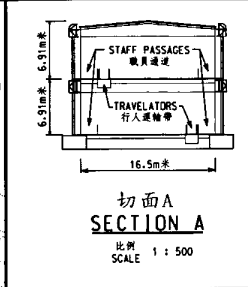
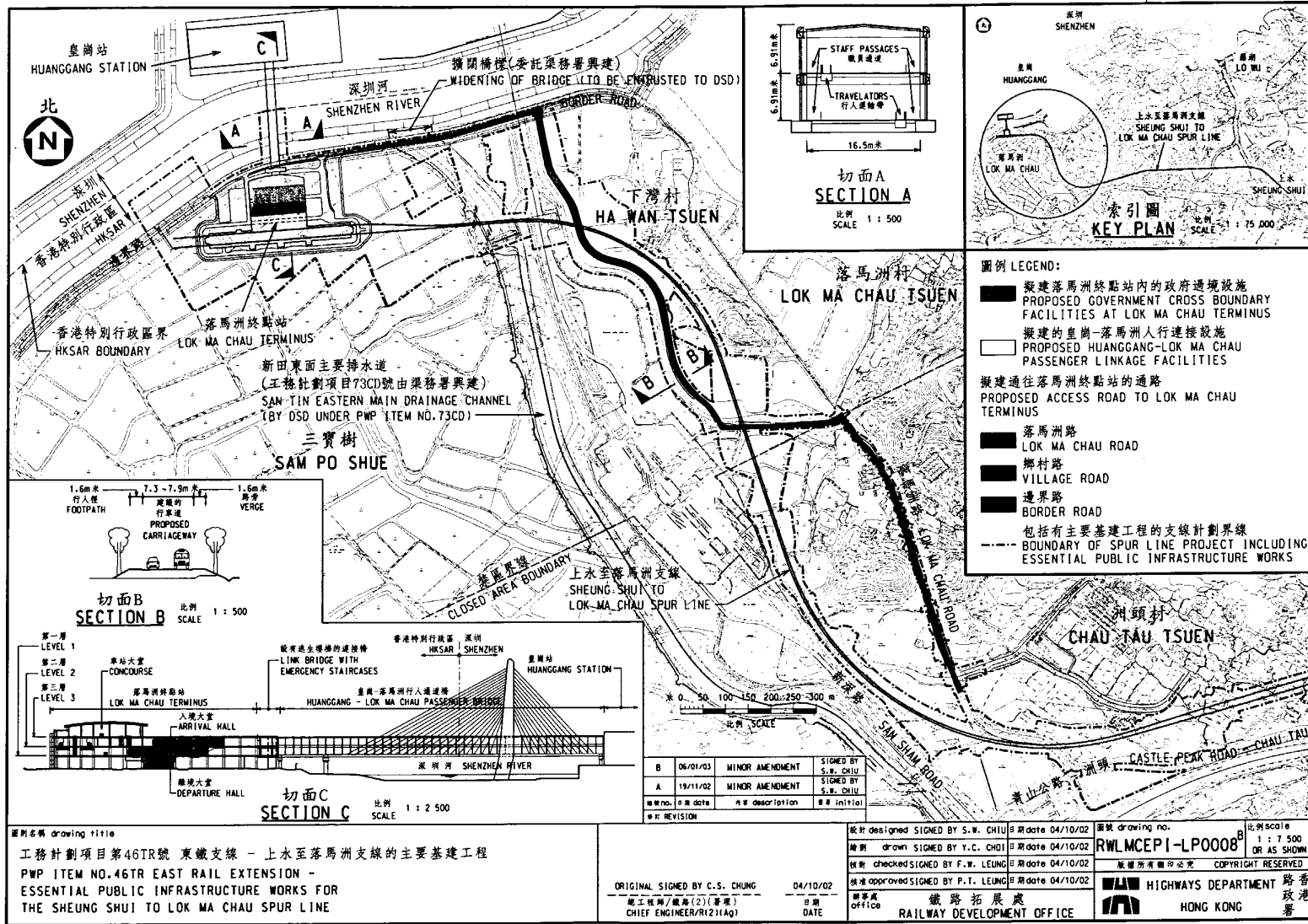
¹⁰ This estimate has taken into account the cost for developing, operating and restoring the landfills after they are filled and the aftercare required. It does not include the land opportunity cost for existing landfill sites (which is estimated at \$90/m³), nor the cost to provide new landfills (which are likely to be more expensive) when the existing ones are filled. The notional cost estimate is for reference only and does not form part of this project estimate.

36. In September 1998, we invited KCRC to submit a proposal for the implementation of the Spur Line. Having considered the proposal submitted by KCRC in March 1999, we invited KCRC to proceed with the detailed planning and design of the Spur Line. KCRC and we subsequently followed the statutory process, including the procedures under the Railways Ordinance and the EIA Ordinance, to take forward the Spur Line. To reduce ecological impact on Long Valley and to reduce the impact on the local community, KCRC adopted the tunnel-cum-viaduct construction approach in September 2001. KCRC estimated that the cost of the Spur Line would be \$10 billion (in MOD prices) which will be wholly funded by KCRC through its internal resources and commercial borrowing. KCRC expected the railway to be completed by mid-2007.

37. We upgraded **46TR** to Category B in January 2000.

38. We estimate that the project will create some 246 jobs comprising 54 professional/technical staff and 192 labourers, totalling about 8 659 man-months.

Environment, Transport and Works Bureau
January 2003



- 圖例 LEGEND:**
- 擬建落馬洲終點站內的政府過境設施
PROPOSED GOVERNMENT CROSS BOUNDARY FACILITIES AT LOK MA CHAU TERMINUS
 - 擬建的皇崗-落馬洲人行連接設施
PROPOSED HUANGGANG-LOK MA CHAU PASSENGER LINKAGE FACILITIES
 - 擬建通往落馬洲終點站的通路
PROPOSED ACCESS ROAD TO LOK MA CHAU TERMINUS
 - 落馬洲路
LOK MA CHAU ROAD
 - 鄉村路
VILLAGE ROAD
 - 邊界路
BORDER ROAD
 - 包括有主要基建工程的支線計劃界線
BOUNDARY OF SPUR LINE PROJECT INCLUDING ESSENTIAL PUBLIC INFRASTRUCTURE WORKS

B	06/01/03	MINOR AMENDMENT	SIGNED BY S.W. CHIU
A	19/11/02	MINOR AMENDMENT	SIGNED BY S.W. CHIU
* 0 50 100 150 200 250 300 m			
比例 SCALE			

圖則名稱 drawing title
 工務計劃項目第46TR號 東鐵支線 - 上水至落馬洲支線的主要基建工程
 PWP ITEM NO.46TR EAST RAIL EXTENSION -
 ESSENTIAL PUBLIC INFRASTRUCTURE WORKS FOR
 THE SHEUNG SHUI TO LOK MA CHAU SPUR LINE

設計 designed SIGNED BY S.W. CHIU 日期 date 04/10/02	圖號 drawing no. RWLMCEPI-LP0008 ^B	比例 scale 1:500 OR AS SHOWN
繪圖 drawn SIGNED BY Y.C. CHOI 日期 date 04/10/02	版權所有權印必究 COPYRIGHT RESERVED	
核對 checked SIGNED BY F.W. LEUNG 日期 date 04/10/02		
核准 approved SIGNED BY P.T. LEUNG 日期 date 04/10/02		
辦事處 office 鐵路拓展處 RAILWAY DEVELOPMENT OFFICE		香港路政署 HONG KONG