

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 706 – HIGHWAYS

Transport – Roads

764TH – Retrofitting of noise barriers on Tsing Tsuen Bridge at Tsing Yi and Tsuen Wan approaches

765TH – Retrofitting of noise barriers on Tseung Kwan O Road

776TH – Retrofitting of noise barriers on Yuen Shin Road, Tai Po

Members are invited to recommend to Finance Committee –

- (a) the upgrading of **764TH** to Category A at an estimated cost of \$129.9 million in money-of-the-day prices for the retrofitting of noise barriers on Tsing Tsuen Bridge at Tsing Yi and Tsuen Wan approaches;
- (b) the upgrading of **765TH** to Category A at an estimated cost of \$142.1 million in money-of-the-day prices for the retrofitting of noise barriers on Tseung Kwan O Road; and
- (c) the upgrading of **776TH** to Category A at an estimated cost of \$18.1 million in money-of-the-day prices for the retrofitting of noise barriers on Yuen Shin Road, Tai Po.

/PROBLEM

PROBLEM

The existing dwellings adjacent to the following locations are exposed to excessive noise –

- (a) Tsing Tsuen Bridge near Cheung On Estate at Tsing Yi and near Riviera Gardens at Tsuen Wan;
- (b) Tseung Kwan O Road near Tsui Ping South Estate, Hing Tin Estate, Hong Yat Court and Hong Wah Court at Lam Tin; and
- (c) Yuen Shin Road near Wang Fuk Court and Kwong Fuk Estate at Tai Po.

PROPOSAL

2. The Director of Highways, with the support of the Secretary for the Environment, Transport and Works, proposes to upgrade **764TH**, **765TH** and **776TH** to Category A at estimated costs of \$129.9 million, \$142.1 million and \$18.1 million respectively in money-of-the-day (MOD) prices for the retrofitting of noise barriers at Tsing Yi and Tsuen Wan approaches of Tsing Tsuen Bridge, Tseung Kwan O Road, and Yuen Shin Road respectively.

PROJECT SCOPE AND NATURE

3. The scope of **764TH** comprises –
- (a) retrofitting of vertical noise barriers of about 160 metres (m) in length and five metres in height, and single-leaf cantilevered noise barriers of about 160 m in length and six metres in height along the footpath of the eastbound section of Tsing Tsuen Bridge near Cheung On Estate at Tsing Yi;
 - (b) retrofitting of single-leaf cantilevered noise barriers of about 320 m in length and six metres in height along the central divider and the slow lane of the eastbound section of Tsing Tsuen Bridge near Cheung On Estate at Tsing Yi;

/(c)

- (c) retrofitting of single-leaf cantilevered noise barriers of a total length of about 590 m and seven metres in height, and 270 m and six metres in height along the central divider and the footpath of the eastbound section of Tsing Tsuen Bridge near Riviera Gardens at Tsuen Wan;
 - (d) associated road, drainage, geotechnical, street lighting and landscaping works; and
 - (e) implementation of an environmental monitoring and audit (EM&A) programme for works mentioned in items 3(a) to (d) above.
4. The scope of **765TH** comprises –
- (a) retrofitting of vertical noise barriers of about 90 m in length and four metres in height on the northern side of the eastbound flyover section of Tseung Kwan O Road, and single-leaf cantilevered noise barriers of about 350 m in length and seven metres in height along the footpath of Tseung Kwan O Road eastbound outside Tsui Ping South Estate;
 - (b) retrofitting of single-leaf cantilevered noise barriers of about 530 m in length and seven metres in height along the central divider of the section of Tseung Kwan O Road near Hing Tin Estate and Hong Wah Court;
 - (c) retrofitting of double-leaf cantilevered noise barriers of about 100 m in length and seven metres in height along the central divider of the section of Tseung Kwan O Road near Tsui Ping South Estate;
 - (d) laying of low noise surfacing materials of about 370 m in length on each of the eastbound and westbound carriageway of Tseung Kwan O Road near Hing Tin Estate and Hong Wah Court;
 - (e) associated road, drainage, geotechnical, street lighting and landscaping works; and
 - (f) implementation of an EM&A programme for works mentioned in items 4(a) to (e) above.

5. The scope of **776TH** comprises –
- (a) retrofitting of single-leaf cantilevered noise barriers of about 250 m in length and seven metres in height along the verge of the northbound carriageway of Yuen Shin Road near Wang Fuk Court and Kwong Fuk Estate;
 - (b) associated road, drainage, geotechnical and landscaping works; and
 - (c) implementation of an EM&A programme for works mentioned in items 5(a) to (b) above.

Layout plans with cross sections of the proposed works under **764TH**, **765TH** and **776TH** are at Enclosures 1, 2 and 3 respectively.

6. We plan to commence the construction works for **764TH** and **765TH** in September 2007 for completion in December 2010 and December 2009 respectively, and to commence the construction works for **776TH** in December 2007 for completion in June 2009.

JUSTIFICATION

7. In November 2000, the Administration promulgated a policy to address the noise impact of existing roads on neighbouring residents. Under this policy, direct engineering solutions by way of retrofitting of barriers and enclosures and resurfacing with low noise material will be implemented where practicable on existing roads with a traffic noise level exceeding the limit of 70 dB(A) $L_{10}(1 \text{ hour})$ ¹.

8. At present, about 2 000 dwellings adjacent to the section of Tsing Tsuen Bridge near Cheung On Estate at Tsing Yi and Riviera Gardens at Tsuen Wan are exposed to excessive traffic noise of up to 79 dB(A) $L_{10}(1 \text{ hour})$. About 4 500 dwellings adjacent to the section of Tseung Kwan O Road near Tsui Ping South Estate, Hing Tin Estate, Hong Yat Court and Hong Wah Court at Lam Tin

/are

¹ $L_{10}(1 \text{ hour})$ is the noise level exceeded for 10% of a one-hour period, generally used for road noise at peak traffic flow. The noise limit of 70 dB(A) for residential premises as stipulated in the Hong Kong Planning Standards and Guidelines is adopted as the administrative guideline for retrofitting projects identified under the policy introduced in 2000.

are exposed to excessive traffic noise of up to 83 dB(A) L₁₀(1 hour). About 380 dwellings adjacent to the section of Yuen Shin Road near Wang Fuk Court and Kwong Fuk Estate at Tai Po are exposed to traffic noise of up to 73 dB(A) L₁₀(1 hour). In line with the policy, we propose to retrofit noise barriers on these road sections in order to mitigate the noise impact. These projects would reduce the existing traffic noise levels on the affected noise sensitive receivers as follows –

- (a) **764TH** - 1 to 21 dB(A) L₁₀ (1 hour) benefiting 1 700 dwellings at Cheung On Estate at Tsing Yi and Riviera Gardens at Tsuen Wan;
- (b) **765TH** - 1 to 18 dB(A) L₁₀ (1 hour) benefiting 3 800 dwellings at Tsui Ping South Estate, Hing Tin Estate, Hong Yat Court and Hong Wah Court at Lam Tin; and
- (c) **776TH** - 1 to 14 dB(A) L₁₀ (1 hour) benefiting 370 dwellings at Wang Fuk Court and Kwong Fuk Estate at Tai Po.

FINANCIAL IMPLICATIONS

9. We estimate the costs of **764TH**, **765TH** and **776TH** to be \$129.9 million, \$142.1 million and \$18.1 million respectively in MOD prices (see paragraph 10 below), made up as follows –

	\$ million		
	<u>764TH</u>	<u>765TH</u>	<u>776TH</u>
(a) Noise barriers	85.5	84.4	13.7
(i) vertical	4.7	2.0	0.0
(ii) single-leaf cantilevered	80.8	70.2	13.7
(iii) double-leaf cantilevered	0.0	12.2	0.0
(b) Road and drainage works	18.1	23.7	1.4
(c) Laying of low noise surfacing material	0.0	5.0	0.0
(d) Landscaping works	1.7	2.4	0.8

/(e)

(e) Consultants' fees ²	11.2	12.2	0.3
(i) construction supervision and contract administration	0.7	0.7	0.0
(ii) resident site staff cost	10.2	11.2	0.0
(iii) environmental monitoring and audit (EM&A) programme ³	0.3	0.3	0.3
(f) Contingencies	11.6	12.8	1.6
	128.1	140.5	17.8
Sub-total			(in September 2006 prices)
(g) Provision for price adjustment	1.8	1.6	0.3
	129.9	142.1	18.1
Total			(in MOD prices)

_____ A breakdown of the estimated consultants' fees for **764TH**, **765TH** and **776TH** is at Enclosure 4.

/10.

² For **776TH**, Highways Department will use in-house resources for construction supervision and contract administration.

³ We will engage consultants to implement an EM&A programme at estimated costs of \$300,000 each for **764TH**, **765TH** and **776TH** to ensure timely and effective implementation of the recommended mitigation measures.

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

Year	\$ million (Sep 2006)			Price adjustment factor	\$ million (MOD)		
	<u>764TH</u>	<u>765TH</u>	<u>776TH</u>		<u>764TH</u>	<u>765TH</u>	<u>776TH</u>
2007 – 08	12.9	12.7	1.0	0.99900	12.9	12.7	1.0
2008 – 09	42.3	61.5	10.0	1.00649	42.6	61.9	10.1
2009 – 10	47.3	59.3	4.8	1.01656	48.1	60.3	4.9
2010 – 11	19.3	7.0	2.0	1.02672	19.8	7.2	2.1
2011 – 12	6.3	–	–	1.03699	6.5	–	–
	<u>128.1</u>	<u>140.5</u>	<u>17.8</u>		<u>129.9</u>	<u>142.1</u>	<u>18.1</u>

11. We have derived the MOD estimates on the basis of the Government's latest forecast of trend rate of change in the prices of public sector building and construction output for the period 2007 to 2012. We will tender the proposed works under **764TH**, **765TH** and **776TH** under standard remeasurement contracts because the quantity of the foundation of noise barriers is subject to variation due to actual ground conditions. The contracts for **764TH** and **765TH** will provide for price adjustments as the contract period will exceed 21 months.

12. We estimate the annual recurrent expenditure upon completion of **764TH**, **765TH** and **776TH** to be \$351,000, \$394,000 and \$68,000 respectively.

PUBLIC CONSULTATION

13. We consulted the Tsuen Wan District Council on 27 September 2005 and the Housing and Development Committee of the Kwai Tsing District Council on 4 October 2005 on **764TH**. We consulted the Environment and Hygiene Committee of the Kwun Tong District Council on **765TH** on 18 October 2005. We briefed Members of the above District Councils and Committees on the

/details

details of the projects, including the scope and design of the noise barriers panels, and the implementation programmes. Members of the above District Councils and Committees supported the respective projects.

14. We consulted the Joint Panels on Environmental Affairs and Transport of the Legislative Council (LegCo) on 23 June 2003 on **776TH**, and Members supported the proposal regarding the reuse of noise barrier materials recovered from the Widening of Tolo Highway Project⁴. We consulted the Environment, Housing and Works Committee of the Tai Po District Council on **776TH** on 17 March 2006, and Members supported the proposed noise barrier scheme.

15. We consulted the Advisory Committee on the Appearance of Bridges and Associated Structures⁵ (ACABAS) on the aesthetic designs of the noise barriers for **764TH**, **765TH** and **776TH** on 19 December 2006. The Committee accepted the proposed aesthetic designs.

16. We gazetted the road schemes of **764TH** and **765TH** under the Roads (Works, Use and Compensation) Ordinance (the Ordinance) on 9 June 2006 and received no objection. The Permanent Secretary for the Environment, Transport and Works (Transport) (PST) authorised the road schemes of **764TH** and **765TH** under the Ordinance on 31 August 2006. The notices of authorisation were gazetted on 8 September 2006.

/17.

⁴ We upgraded **561TH** "Widening of Tolo Highway between Island House Interchange and Ma Liu Shui Interchange" to Category A at an estimated cost of \$2,507.2 million in MOD prices in November 1998. We have substantially completed the construction works in July 2003. Following the review on the noise barriers for the Widening of Tolo Highway Project in early 2003, we have modified some of the noise barriers to align with the programme for the planned future developments. Some of the noise barrier materials recovered from this project have been used in **722TH** "Retrofitting of noise barriers on Fanling Highway near Choi Yuen Estate, Sheung Shui" and **723TH** "Retrofitting of noise barriers on Fanling Highway near Fanling Centre, Fanling". The remaining recovered materials will be used in the project **776TH**. The cost estimate for **776TH** has taken into account savings of \$1.0 million from the reuse of noise barrier materials recovered from **561TH**.

⁵ The Advisory Committee on the Appearance of Bridges and Associated Structures, which comprises representatives of the Hong Kong Institute of Architects, the Hong Kong Institution of Engineers, Architectural Services Department, Highways Department, Housing department, Planning Department, and Civil Engineering and Development Department, is responsible for vetting the design of bridges and other structures associated with the public highway system, including noise barriers and semi-enclosures, from the aesthetic and visual impact points of view.

17. We gazetted the road scheme of **776TH** under the Ordinance on 11 August 2006 and received no objection. The PST authorised the road scheme of **776TH** under the Ordinance on 26 October 2006. The notice of authorisation was gazetted on 3 November 2006.

18. We consulted the Panel on Environmental Affairs of the LegCo on 26 February 2007 on **764TH**, **765TH** and **776TH**, and Members supported the funding application for the proposed noise barrier schemes.

ENVIRONMENTAL IMPLICATIONS

19. **764TH**, **765TH** and **776TH** are not designated projects under the Environmental Impact Assessment Ordinance. We completed the environmental studies for the projects in January 2007. The projects would not cause adverse long-term environmental impact.

20. For short-term construction impacts, we will control the noise, dust and site run-off nuisances to within the established standards and guidelines through the implementation of mitigation measures. We will also carry out the EM&A programme to ensure proper implementation of the recommendations of the environmental assessment.

21. On landfill gas hazard arising from the nearby restored Ma Yau Tong Landfill site for **765TH**, we will implement appropriate landfill gas protection, precautionary and monitoring measures during both the construction and operation phases of the project. With such measures in place and properly implemented, we anticipate that the safety of site personnel will be safeguarded and there would be no adverse impact arisen.

22. We have considered measures in the planning and design stages to reduce the generation of construction and demolition (C&D) materials where possible. In the design of the pile caps, we have raised the levels of the pile caps in order to minimise the quantity of C&D material generated from excavation for pile caps. In addition, we will require the contractor to reuse suitable excavated materials and demolition materials as filling materials on site as far as possible in

/order

order to minimise their disposal to public fill reception facilities⁶. We will encourage the contractor to maximise the use of recycled or recyclable C&D materials, as well as the use of non-timber formwork to further minimise the generation of construction waste.

23. We will require the contractor to submit a waste management plan (WMP) for approval. The WMP will include appropriate mitigation measures to avoid, reduce, reuse and recycle C&D materials. We will require the contractor to ensure that the day-to-day operations on site comply with the approved WMP. We

will control the disposal of public fill, C&D materials and C&D waste to public filling facilities and landfills respectively through a trip-ticket system. We will require the contractor to separate public fill from C&D waste for disposal at appropriate facilities. We will record the disposal, reuse and recycling of C&D materials for monitoring purposes.

24. We estimate that the project **764TH** will generate about 21 000 tonnes of C&D materials. Of these, we will reuse about 11 900 tonnes (56.7%) on site, deliver 5 500 tonnes (26.2%) to public fill reception facilities for subsequent reuse. In addition, we will dispose of 3 600 tonnes (17.1%) at landfills. The total cost for accommodating C&D materials at public fill reception facilities and landfill sites is estimated to be \$598,500 for this project (based on a unit cost of \$27/tonne for disposal at public fill reception facilities, and \$125/tonne⁷ at landfills).

25. We estimate that the project **765TH** will generate about 31 500 tonnes of C&D materials. Of these, we will reuse about 12 600 tonnes (40.0%) on site, deliver 13 900 tonnes (44.1%) to public fill reception facilities for subsequent reuse. In addition, we will dispose of 5 000 tonnes (15.9%) at landfills. The total cost for accommodating C&D materials at public fill reception facilities and landfill sites is estimated to be \$1,000,300 for this project (based on the unit costs in paragraph 24 above).

/26.

⁶ Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of public fill in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

⁷ The 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.

26. We estimate that the project **776TH** will generate about 1 500 tonnes of C&D materials. Of these, we will reuse about 600 tonnes (40.0%) on site, deliver 450 tonnes (30.0%) to public fill reception facilities for subsequent reuse. In addition, we will dispose of 450 tonnes (30.0%) at landfills. The total cost for accommodating C&D materials at public fill reception facilities and landfill sites is estimated to be \$68,400 for this project (based on the unit costs in paragraph 24 above).

LAND ACQUISITION

27. The proposed works do not require any land resumption.

BACKGROUND INFORMATION

28. We upgraded **764TH, 765TH and 776TH** to Category B in October 2004, February 2006 and March 2002 respectively. In July 2005, we carried out site investigation works for **765TH** at a cost of \$338,640 under **Subhead 6100TX** “Highway works, studies and investigations for items in Category D of the Public Works Programme”. In November 2006, we carried out site investigation works under **764TH** at an estimated cost of \$660,000 under **Subhead 6100TX**. In June 2006, we engaged consultants to carry out a review and detailed design for the proposed works under **764TH** and **765TH** at an estimated cost of \$3.0 million under **Subhead 6100TX**. In January 2007, we engaged consultants to carry out a review on the environmental, geotechnical and traffic aspects for the proposed works under **776TH** at an estimated cost of \$1.1 million under **Subhead 6100TX**. The consultants have substantially completed the review for **776TH** and detailed design for **764TH** and **765TH**.

29. The aesthetic design of the proposed noise barriers is compatible with the environment. The proposed noise barrier panels for cantilevered-type noise barriers are generally of transparent type and non-transparent type for the upper and lower parts respectively. For vertical-type noise barriers, the proposed noise barrier panels are generally of transparent type. In line with the prevailing greening policy of the Government, we propose to use green wall with embedded plants for the lower part of a section of noise barriers along the slow lane of eastbound Tsing Tsuen Bridge near Riviera Gardens in Tsuen Wan under **764TH**. We also propose to use green wall with embedded plants for the lower parts of a section of noise barriers along the footpath of the eastbound Tseung Kwan O Road outside Tsui Ping South Estate, and to convert a portion of the same footpath into planter under **765TH**. We will provide planting of a one metre wide strip

/alongside

alongside the noise barriers under **776TH**. Drawings showing the perspective view of the noise barriers under **764TH**, **765TH** and **776TH** are at Enclosures 5, 6 and 7 respectively. The initial aesthetic designs were supported by the District Councils and ACABAS as described in paragraphs 13 to 15 above.

30. The proposed retrofitting of noise barriers will involve removal of 17 trees (all to be transplanted) under **764TH**, five trees (all to be felled) under **765TH**, and 61 trees (including 48 trees to be felled and 13 trees to be transplanted) under **776TH**. All the trees to be felled are not important trees⁸. We will incorporate planting proposals as part of the projects, including estimated quantities of 20 and 50 trees under **765TH** and **776TH** respectively, 4 700, 14 200 and 1 500 shrubs under **764TH**, **765TH** and **776TH** respectively (including shrubs on green walls and planters), and 420 and 250 square metres of grassed area for **764TH** and **765TH** respectively. The planting proposals would more than compensate for the trees to be felled.

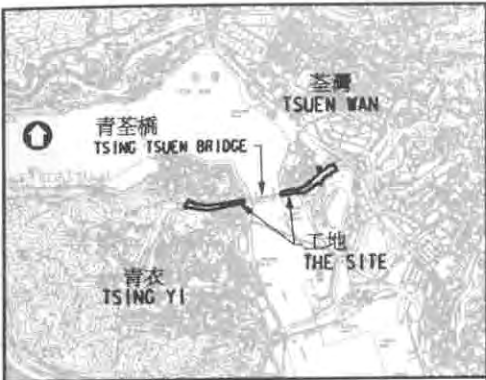
31. We estimate that the proposed works will create the following job opportunities –

<u>Project no.</u>	<u>Estimated no. of jobs</u>			<u>Estimated total man-months</u>
	<u>Professional/ Technical staff</u>	<u>Labourer</u>	<u>Total</u>	
764TH	20	75	95	2 850
765TH	30	125	155	3 150
776TH	4	21	25	400

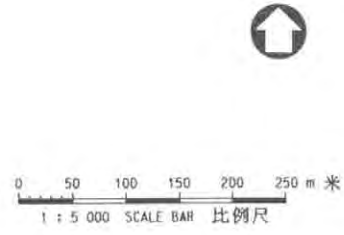
⁸ “Important trees” refer to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria –

- (a) trees of 100 years old or above;
- (b) trees of cultural, historical or memorable significance e.g. Fung Shui trees, trees as landmark of monastery or heritage monument, and trees in memory of important persons or event;
- (c) trees of precious or rare species;
- (d) trees of outstanding form (taking account of overall tree sizes, shape and any special features) e.g. trees with curtain like aerial roots, trees growing in unusual habitat; or
- (e) trees with trunk diameter equal or exceeding 1.0 metre (measured at 1.3 metre above ground level), or with height/canopy spread equal or exceeding 25 metres.

Environment, Transport and Works Bureau
April 2007

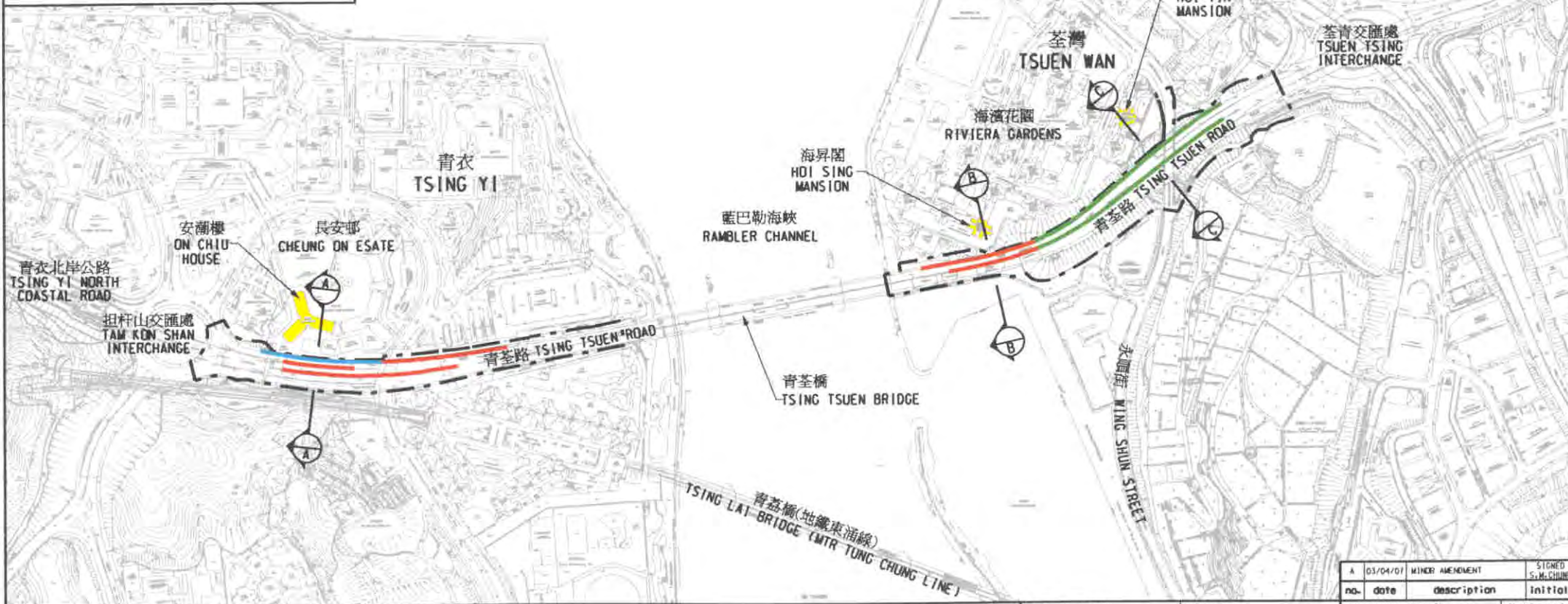


索引圖 KEY PLAN
比例 SCALE 1 : 50000

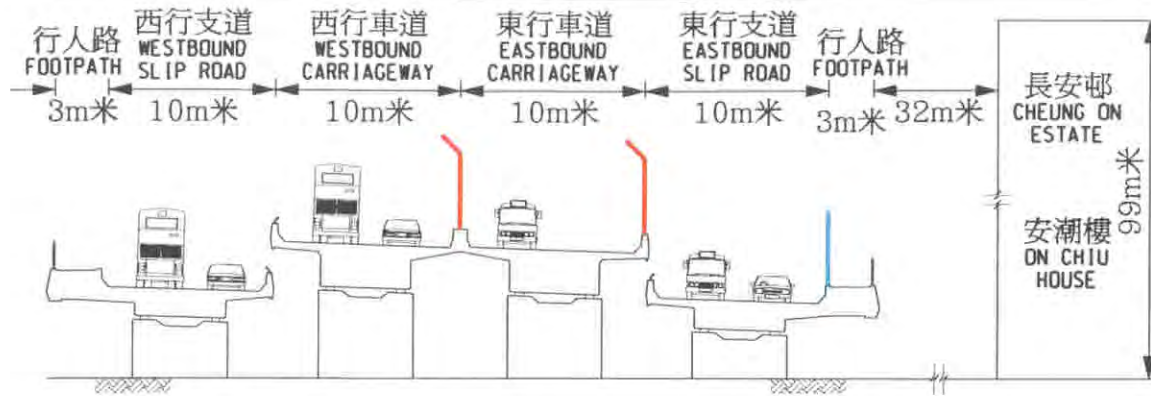


圖例
LEGEND :

- 施工範圍
LIMIT OF WORKS AREA
- 擬建5米高垂直式隔音屏障
PROPOSED 5m HIGH VERTICAL NOISE BARRIER
- 擬建6米高單懸臂式隔音屏障
PROPOSED 6m HIGH SINGLE-LEAF CANTILEVERED NOISE BARRIER
- 擬建7米高單懸臂式隔音屏障
PROPOSED 7m HIGH SINGLE-LEAF CANTILEVERED NOISE BARRIER



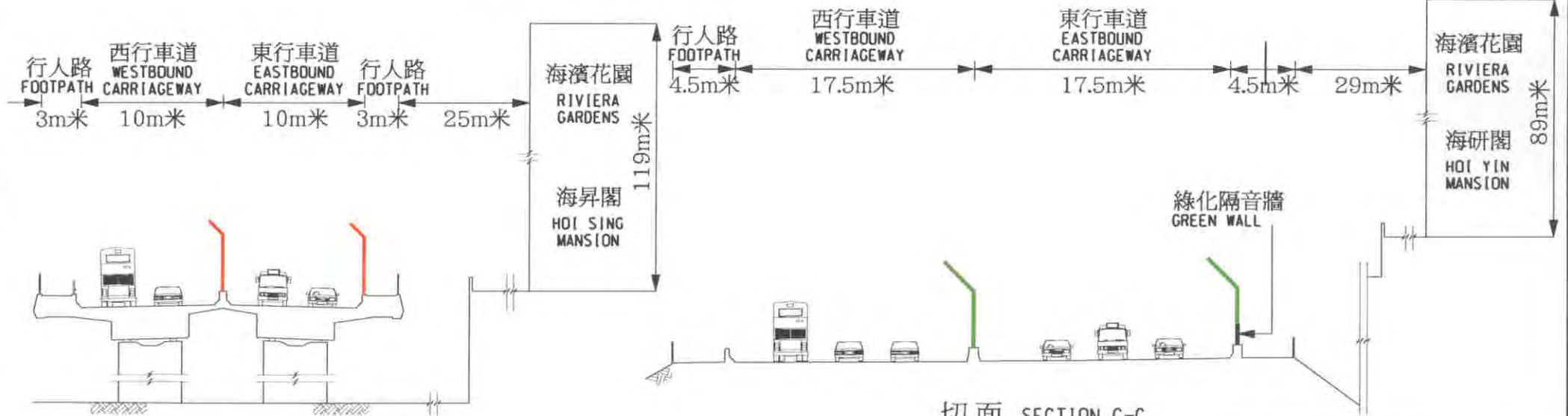
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工務計劃項目第764TH號- 青衣及荃灣引道之青荃橋加建隔音屏障工程 - 平面圖		覆核 checked S.M.CHUNG 09/02/07 SIGNED		批准 approved M.Y.MA 09/02/07 SIGNED		© 版權所有 COPYRIGHT RESERVED HIGHWAYS DEPARTMENT 路政署 HONG KONG 香港			
PWP ITEM NO. 764TH RETROFITTING OF NOISE BARRIERS ON TSING TSUEN BRIDGE AT TSING YI AND TSUEN WAN APPROACHES - LAYOUT PLAN		主要工程管理部 MAJOR WORKS PROJECT MANAGEMENT OFFICE							



圖例
LEGEND :

- 擬建5米高垂直式隔音屏障
PROPOSED 5m HIGH VERTICAL NOISE BARRIER
- 擬建6米高單懸臂式隔音屏障
PROPOSED 6m HIGH SINGLE-LEAF CANTILEVERED NOISE BARRIER
- 擬建7米高單懸臂式隔音屏障
PROPOSED 7m HIGH SINGLE-LEAF CANTILEVERED NOISE BARRIER

切面 SECTION A-A



切面 SECTION B-B

切面 SECTION C-C

圖則名稱 drawing title

工務計劃項目第764TH號 - 青衣及荃灣引道之青荃橋加建隔音屏障工程 - 切面圖

PWP ITEM NO. 764TH RETROFITTING OF NOISE BARRIERS ON TSING TSUEN BRIDGE AT TSING YI AND TSUEN WAN APPROACHES - SECTIONS

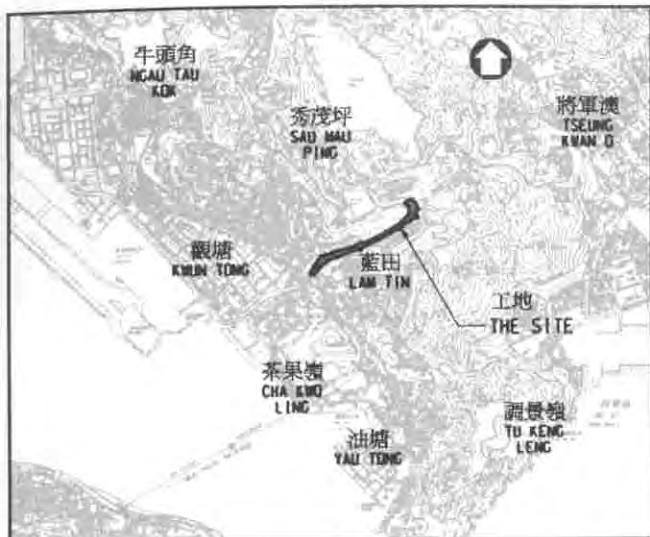
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覆核 checked SIGNED S.M.CHUNG 09/02/07	批准 approved SIGNED M.Y.MA 09/02/07
主要工程管理處 MAJOR WORKS PROJECT MANAGEMENT OFFICE	

A	03/04/07	MINOR AMENDMENT	SIGNED S.M.CHUNG
no.	date	description	initial

圖則編號 drawing no. HMW6764TH-CS0002-A	比例 scale 示意圖 DIAGRAMMATIC
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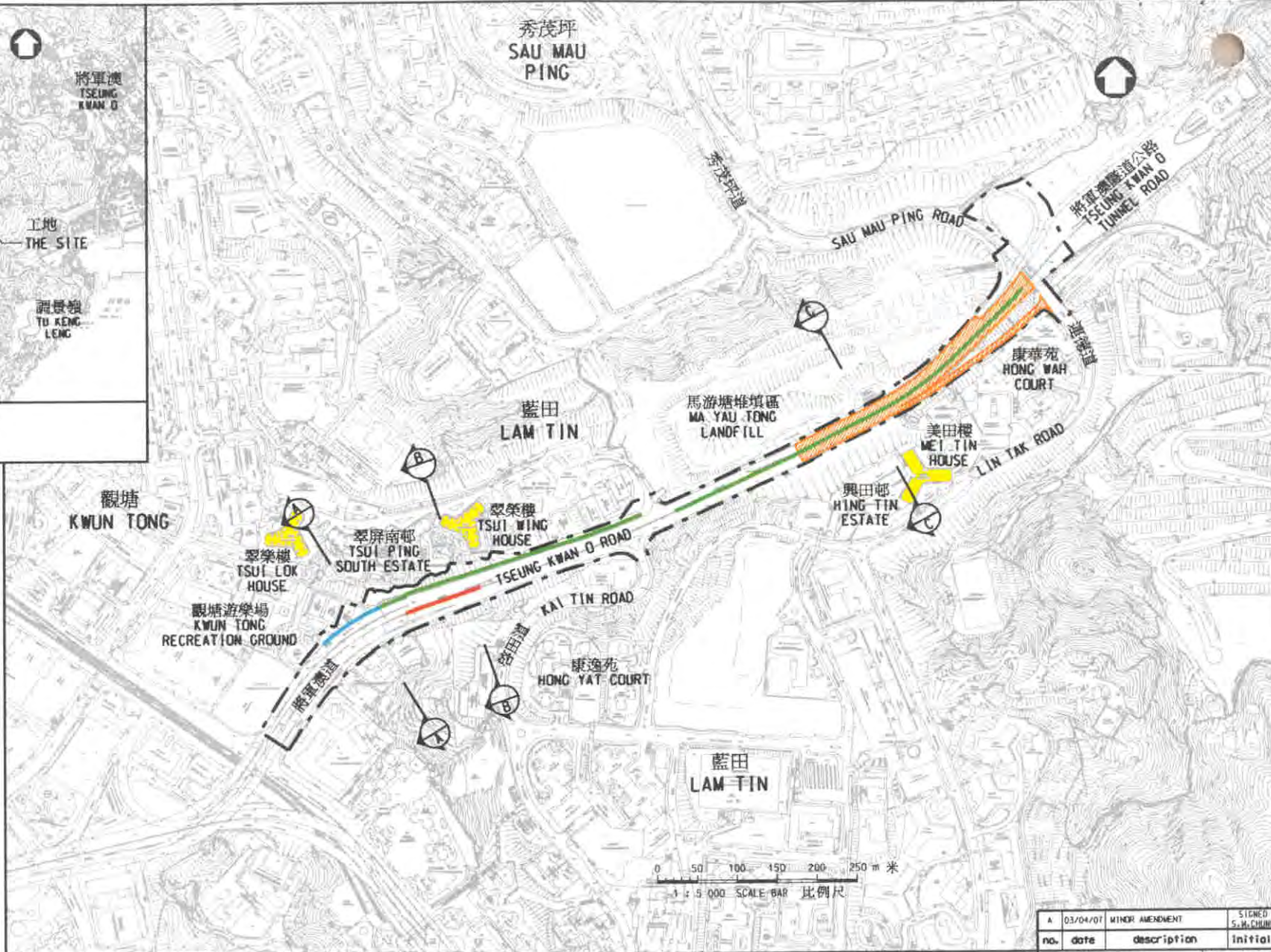
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	HIGHWAYS DEPARTMENT HONG KONG	路 政 署 香 港
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索引圖 KEY PLAN
比例 SCALE 1 : 50000

- 圖例 LEGEND :
- 施工範圍
LIMIT OF WORKS AREA
 - 擬建4米高垂直式隔音屏障
PROPOSED 4m HIGH VERTICAL NOISE BARRIER
 - 擬建7米高單懸臂式隔音屏障
PROPOSED 7m HIGH SINGLE-LEAF CANTILEVERED NOISE BARRIER
 - 擬建7米高雙懸臂式隔音屏障
PROPOSED 7m HIGH DOUBLE-LEAF CANTILEVERED NOISE BARRIER
 - 擬鋪設低噪音物料
PROPOSED LOW NOISE SURFACING

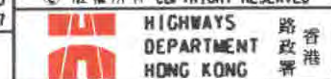


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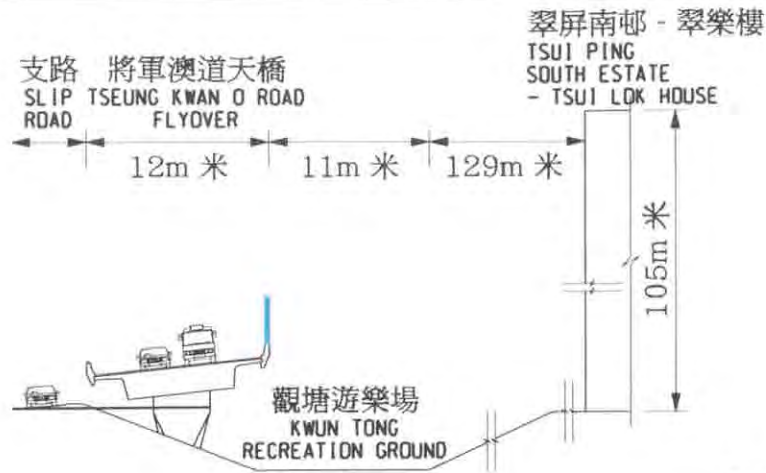
設計 designed	SIGNED	繪圖 drawn	SIGNED
S.M.CHUNG	09/02/07	S.K.TSE	09/02/07
覆核 checked	SIGNED	批准 approved	SIGNED
S.M.CHUNG	09/02/07	M.Y.MA	09/02/07

圖則編號 plan no.	比例 scale
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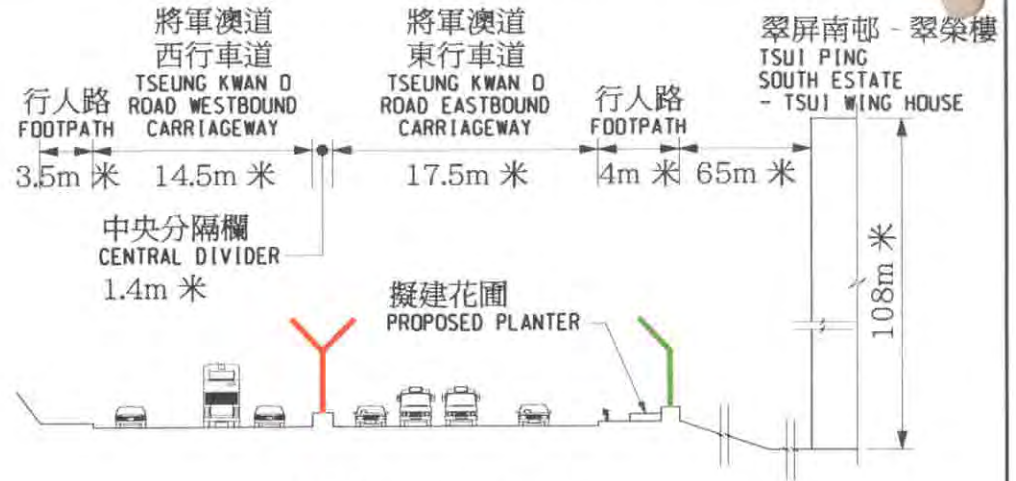
主要工程管理處
MAJOR WORKS PROJECT MANAGEMENT OFFICE



圖則名稱 plan title
工務計劃項目第765TH號-將軍澳道加建隔音屏障工程 - 平面圖
PWP ITEM NO. 765TH RETROFITTING OF NOISE BARRIERS ON TSEUNG KWAN O ROAD - LAYOUT PLAN



切面 SECTION A-A



切面 SECTION B-B

興田邨 - 美田樓
HING TIN ESTATE - MEI TIN HOUSE



切面 SECTION C-C

- 圖例
LEGEND :
- 擬建4米高垂直式隔音屏障
PROPOSED 4m HIGH VERTICAL NOISE BARRIER
 - 擬建7米高單懸臂式隔音屏障
PROPOSED 7m HIGH SINGLE-LEAF CANTILEVERED NOISE BARRIER
 - 擬建7米高雙懸臂式隔音屏障
PROPOSED 7m HIGH DOUBLE-LEAF CANTILEVERED NOISE BARRIER
 - 擬建防撞欄
PROPOSED BEAM BARRIER

A	03/04/07	MINOR AMENDMENT	SIGNED S.M.CHUNG
no.	date	description	initial

圖則編號 plan no.	比例 scale
HMW6765TH-CS0002-A	示意圖 DIAGRAMMATIC

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圖則名稱 plan title

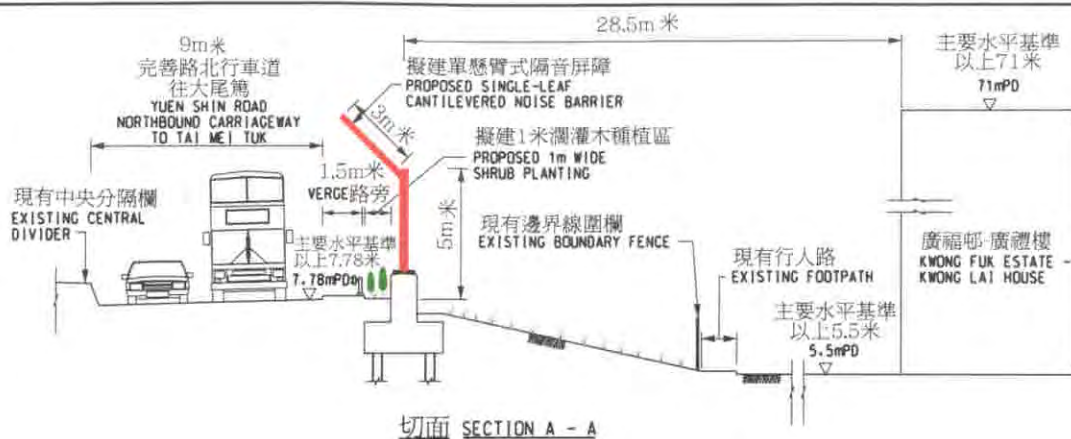
工務計劃項目第765TH號 -
將軍澳道加建隔音屏障工程 - 切面圖

PWP ITEM NO. 765TH
RETROFITTING OF NOISE BARRIERS ON TSEUNG KWAN O ROAD - SECTIONS

設計 designed SIGNED S.M.CHUNG 09/02/07	繪圖 drawn SIGNED S.K.WONG 09/02/07
覆核 checked SIGNED S.M.CHUNG 09/02/07	批准 approved SIGNED M.Y.MA 09/02/07
主要工程管理處 MAJOR WORKS PROJECT MANAGEMENT OFFICE	



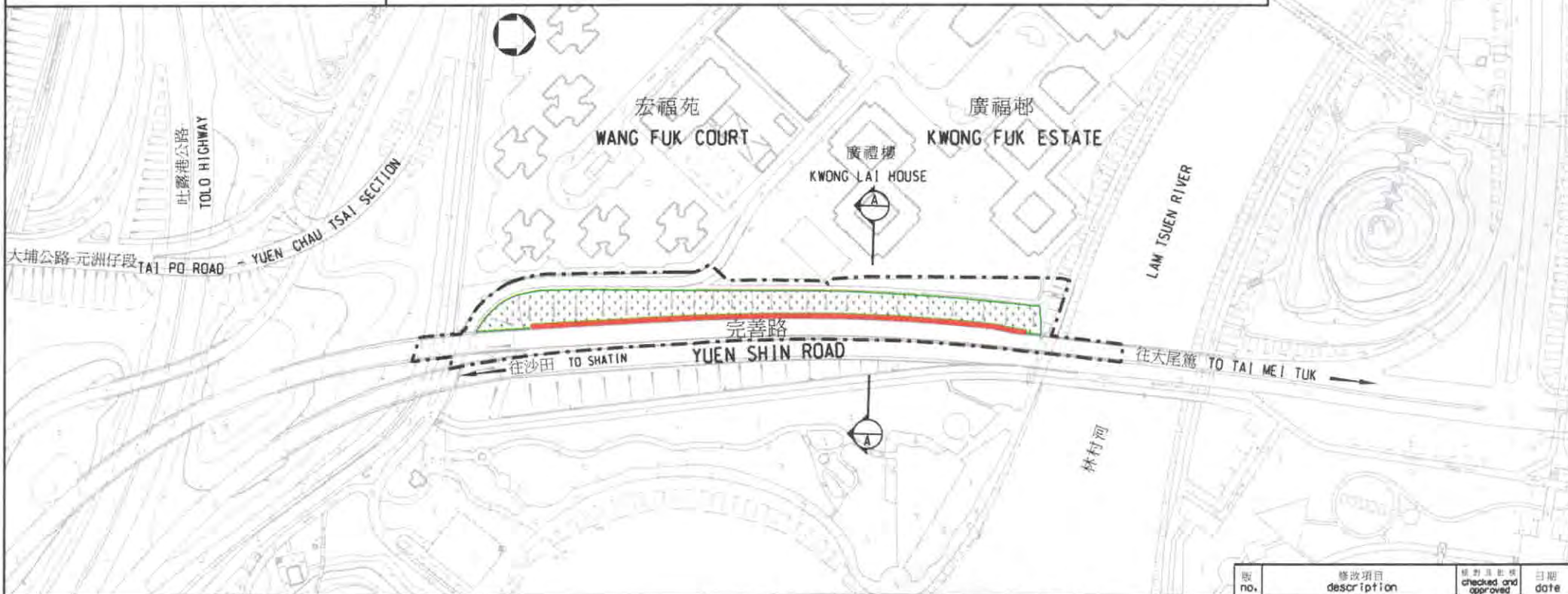
索引圖 KEY PLAN



切面 SECTION A - A

圖例 LEGEND :

-  施工範圍
LIMIT OF WORKS AREA
-  擬建7米高單懸臂式隔音屏障
PROPOSED 7m HIGH SINGLE-LEAF CANTILEVERED NOISE BARRIER
-  擬在現有斜坡進行的環境美化工程
PROPOSED LANDSCAPING WORKS ON EXISTING SLOPE



圖則名稱 drawing title

工務計劃項目第776TH號 - 大埔完善路加建隔音屏障工程 - 平面圖

PWP ITEM NO. 776TH - RETROFITTING OF NOISE BARRIERS ON YUEN SHIN ROAD, TAI PO - LAYOUT PLAN

	職位 post	姓名 name	簽署 signature	日期 date
設計 designed	E/HK3-2	L.K. TSANG	SIGNED	APR 2007
繪圖 drawn	TD/3-3	H.S. LAM	SIGNED	APR 2007
核對 checked	E/HK3-2	L.K. TSANG	SIGNED	APR 2007
批准 approved	SE/HK3	K.C. WONG	SIGNED	APR 2007

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辦事處 office
工程部
WORKS DIVISION

版 no.	修改項目 description	核對及批准 checked and approved	日期 date

比例 scale
不依比例
NOT TO SCALE

圖則編號 drawing no.
HWDTPO63A-SK0006

 HIGHWAYS DEPARTMENT HONG KONG 路政署 香港

Enclosure 4 to PWSC(2007-08)4

- 764TH – Retrofitting of noise barriers on Tsing Tsuen Bridge at Tsing Yi and Tsuen Wan approaches**
765TH – Retrofitting of noise barriers on Tseung Kwan O Road
776TH – Retrofitting of noise barriers on Yuen Shin Road, Tai Po

Breakdown of the estimates for consultants' fees (in September 2006 prices)

Consultants' staff costs		Estimated man-months			Average MPS* salary point	Multiplier (Note 1)	Estimated fee (\$ million)		
		764TH	765TH	776TH			764TH	765TH	776TH
(a) Construction supervision and contract administration (Note 2)	Professional	–	–	–	–	–	0.3	0.3	–
		–	–	–	–	–	0.4	0.4	–
(b) Resident site Staff	Professional	67	74	–	38	1.6	5.8	6.4	–
		153	168	–	14	1.6	4.4	4.8	–
(c) EM&A programme	Professional	2	2	2	38	2.0	0.2	0.2	0.2
		4	4	4	14	2.0	0.1	0.1	0.1
Total							11.2	12.2	0.3

*MPS = Master Pay Scale

Notes

1. A multiplier of 2.0 is applied to the average MPS point to arrive at the full staff costs including the consultants' overheads and profit as the staff will be employed in the consultants' offices. A multiplier of 1.6 is applied to the average MPS point in the case of resident site staff supplied by the consultants. (At 1 January 2007, MPS pt. 38 = \$54,255 per month and MPS pt. 14 = \$18,010 per month).
2. The consultants' fees for construction supervision and contract administration are estimated in accordance with Agreement No. CE 6/2006 (HY) titled "Retrofitting of Noise Barriers on Tseung Kwan O Road, Tsing Tsuen Bridge and Kwun Tong Bypass – Investigation, Design and Construction". The construction phase of the assignment will only be executed subject to Finance Committee's approval to upgrade **764TH** and **765TH** to Category A.



圖則名稱 drawing title

工務計劃項目第764TH號 - 青衣及荃灣引道之青荃橋加建隔音屏障工程
- 透視觀景於擬建隔音屏障

PWP ITEM No. 764TH - RETROFITTING OF NOISE BARRIERS ON TSING TSUEN BRIDGE
AT TSING YI AND TSUEN WAN APPROACHES
- PERSPECTIVE VIEW TO PROPOSED NOISE BARRIERS

設計 designed SIGNED Y.F.KAN 09/02/07	繪圖 drawn SIGNED S.K.WONG 09/02/07
覆核 checked SIGNED S.M.CHUNG 09/02/07	批准 approved SIGNED M.Y.MA 09/02/07

主要工程管理處
MAJOR WORKS
PROJECT MANAGEMENT OFFICE

A	03/04/07	MINOR AMENDMENT	SIGNED S.M.CHUNG
no.	date	description	initial

圖則編號 drawing no. HMW6764TH-SP0004-A	比例 scale 示意圖 DIAGRAMMATIC
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圖則名稱 drawing title

工務計劃項目第765TH號 - 將軍澳道加建隔音屏障工程
- 透視觀景於擬建隔音屏障


PWP ITEM No. 765TH - RETROFITTING OF NOISE BARRIERS ON TSEUNG KWAN O ROAD
- PERSPECTIVE VIEW TO PROPOSED NOISE BARRIERS

設計 designed SIGNED S.M.CHUNG 09/02/07	繪圖 drawn SIGNED L.Y.LEUNG 09/02/07
覆核 checked SIGNED S.M.CHUNG 09/02/07	批准 approved SIGNED M.Y.MA 09/02/07
主要工程管理處 MAJOR WORKS PROJECT MANAGEMENT OFFICE	

A	03/04/07	MINOR AMENDMENT	SIGNED S.M.CHUNG
no.	date	description	initial

圖則編號 drawing no. HMW6765TH-SP0018-A	比例 scale 示意圖 DIAGRAMMATIC
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DEPARTMENT 政
HONG KONG 署



圖則名稱 drawing title 工務計劃項目第776TH號- 大埔完善路加建隔音屏障工程 -透視觀景於擬建隔音屏障 PWP ITEM NO. 776TH - RETROFITTING OF NOISE BARRIERS ON YUEN SHIN ROAD, TAI PO -PERSPECTIVE VIEW TO PROPOSED NOISE BARRIERS		職位 post	姓名 name	簽署 signature	日期 date	版權所有不得翻印 COPYRIGHT RESERVED	比例 scale	圖則編號 drawing no. HWDTP063A-SK0007
	設計 designed	E/HK3-2	L.K. TSANG	SIGNED	APR 2007		示意圖 DIAGRAMMATIC	
	繪圖 drawn	T0/3-3	H.S. LAM	SIGNED	APR 2007	辦事處 office 工程部 WORKS DIVISION		
	核對 checked	E/HK3-2	L.K. TSANG	SIGNED	APR 2007			
	批核 approved	SE/HK3	K.C. WONG	SIGNED	APR 2007			
						 HIGHWAYS DEPARTMENT HONG KONG		路政署 香港