For discussion
on 8 April 2009

PWSC(2009-10)6

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 706 – HIGHWAYS
Transport – Roads
805TH – Retrofitting of noise barriers on Fanling Highway (MTR Fanling Station to Wo Hing Road)
807TH – Retrofitting of noise barriers on Fanling Highway (Po Shek Wu Road to MTR Fanling Station)

Members are invited to recommend to Finance Committee –

(a) the upgrading of **805TH** to Category A at an estimated cost of $247.1 million in money-of-the-day prices for the retrofitting of noise barriers on Fanling Highway (MTR Fanling Station to Wo Hing Road);

(b) the upgrading of **807TH** to Category A at an estimated cost of $506.9 million in money-of-the-day prices for the retrofitting of noise barriers on Fanling Highway (Po Shek Wu Road to MTR Fanling Station).

/PROBLEM.....

PROBLEM

Dwellings adjacent to the two sections of Fanling Highway between MTR Fanling Station and Wo Hing Road, and between Po Shek Wu Road and MTR Fanling Station are exposed to excessive traffic noise.

PROPOSAL

2. The Director of Highways, with the support of the Secretary for the Environment, proposes to upgrade **805TH** and **807TH** to Category A at estimated costs of $247.1 million and $506.9 million respectively in money-of-the-day (MOD) prices for the retrofitting of noise barriers on Fanling Highway between MTR Fanling Station and Wo Hing Road and between Po Shek Wu Road and MTR Fanling Station respectively.

PROJECT SCOPE AND NATURE

3. The scope of **805TH** comprises –

(a) retrofitting of single-leaf cantilevered noise barriers of about 720 metres (m) in length and seven metres in height along the verge of the westbound carriageway of Fanling Highway between MTR Fanling Station and Wo Hing Road;

(b) retrofitting of single-leaf cantilevered noise barriers of about 500 m in length and seven metres in height along the central divider of Fanling Highway between MTR Fanling Station and Wo Hing Road;

(c) retrofitting of single-leaf cantilevered noise barriers of about 200 m in length and seven metres in height along the verge of the slip road from the westbound carriageway of Fanling Highway towards Pak Wo Road;

(d) retrofitting of vertical noise barriers of about 190 m in length and three metres in height along the verge of the eastbound carriageway of Fanling Highway between MTR Fanling Station and Wo Hing Road;

/(e)…..

(e) associated road, drainage, street lighting and landscaping works; and

(f) implementation of an environmental monitoring and audit (EM&A) programme for the works mentioned in 3(a) to (e) above.

4. The scope of **807TH** comprises –

(a) retrofitting of single-leaf cantilevered noise barriers of about 1 110 m in length and seven metres in height along the verge of the westbound carriageway of Fanling Highway between Po Shek Wu Road and MTR Fanling Station;

(b) retrofitting of single-leaf cantilevered noise barriers of about 370 m in length and seven metres in height along the verge of the eastbound carriageway of Fanling Highway between Po Shek Wu Road and MTR Fanling Station;

(c) retrofitting of single-leaf cantilevered noise barriers of about 775 m in length and seven metres in height along the central divider of Fanling Highway between Po Shek Wu Road and MTR Fanling Station;

(d) retrofitting of double-leaf cantilevered noise barriers of about 350 m in length and seven metres in height along the central divider of Fanling Highway near MTR Fanling Station;

(e) retrofitting of vertical noise barriers of about 315 m in length and three metres in height along the verges of both the eastbound and westbound carriageway of Fanling Highway near Kai Leng Roundabout and Ka Fuk Estate;

(f) retrofitting of vertical noise barriers of about 135 m in length and two metres in height along the top of the existing wall on the roadside of the westbound carriageway of Fanling Highway near MTR Fanling Station;

(g) associated road, drainage, street lighting and landscaping works; and

/(h)…..

(h) implementation of an EM&A programme for the works mentioned in 4(a) to (g) above.

Layout plans with cross sections of the proposed works under **805TH** and **807TH** are at Enclosures 1 and 2 respectively.

5. We plan to commence the construction works for **805TH** and **807H** in September 2009 for completion in August 2012.

JUSTIFICATION

6. To mitigate the noise impact of existing roads on neighbouring residents, it is the Government's policy to implement direct engineering solutions, where practicable, by way of retrofitting of barriers and enclosures and resurfacing with low noise material on existing roads with a traffic noise level exceeding the limit of 70 dB(A) [1].

7. At present, about 1 600 dwellings adjacent to the section of Fanling Highway between MTR Fanling Station and Wo Hing Road are exposed to excessive traffic noise levels between 71 and 78 dB(A) and about 1 500 dwellings adjacent to the section of Fanling Highway between Po Shek Wu Road and MTR Fanling Station are exposed to excessive traffic noise levels between 71 and 79 dB(A). In line with the aforementioned policy, we propose to retrofit noise barriers on these two road sections in order to mitigate the noise impact. Upon completion of the projects, about 1 500 and 1 400 dwellings along the above two sections of Fanling Highway will benefit with reduction in traffic noise levels of 1 to 14 dB(A) and 1 to 17 dB(A) respectively. Overall, the number of dwellings with traffic noise levels not exceeding the noise limit of 70 dB(A) as a result of **805TH** and **807TH** will be about 1 100 and 1 300 respectively.

FINANCIAL IMPLICATIONS

8. We estimate the costs of **805TH** and **807TH** to be $247.1 million and $506.9 million respectively in MOD prices (see paragraph 9 below), made up as follows –

/**$ million**.....

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[1] Road traffic noise level is specified in terms of L_{10}(1 hour) which is the noise level exceeded for 10% of a one-hour period and is generally used for measuring 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.

	$ million				
	805TH		**807TH**		
(a) Noise barriers		181.8		384.7	
(i) vertical	10.1		32.7		
(ii) single-leaf cantilevered	171.7		319.0		
(iii) double-leaf cantilevered	-		33.0		
(b) Road and drainage		3.5		8.3	
(c) Landscaping works		12.9		13.5	
(d) Consultants' fees		14.1		28.7	
(i) construction supervision and contract administration	0.5		1.0		
(ii) resident site staff cost	13.6		27.7		
(e) Contingencies		19.1		39.2	
Sub-total		231.4		474.4	(in September 2008 prices)
(f) Provision for price adjustment		15.7		32.5	
Total		247.1		506.9	(in MOD prices)

A breakdown of the estimated consultants' fees for **805TH** and **807TH** is at Enclosure 3.

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

/**Year**.....

Year	$ million (Sept 2008)		Price adjustment factor	$ million (MOD)	
	805TH	**807TH**		**805TH**	**807TH**
2009 – 2010	26.4	53.0	1.03200	27.2	54.7
2010 – 2011	78.5	154.8	1.05264	82.6	162.9
2011 – 2012	78.7	163.1	1.07369	84.5	175.1
2012 – 2013	30.1	67.8	1.09517	33.0	74.3
2013 – 2014	17.7	35.7	1.11707	19.8	39.9
	231.4	474.4		247.1	506.9

10. 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 2009 to 2014. We will tender the proposed works under **805TH** and **807TH** 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 **805TH** and **807TH** will provide for price adjustments.

11. We estimate the annual recurrent expenditure upon completion of **805TH** and **807TH** to be $0.5 million and $1.5 million respectively.

PUBLIC CONSULTATION

12. We consulted the North District Council Traffic and Transport Committee on 8 January 2007 and the North District Council District Minor Works and Environmental Improvement Committee on 17 November 2008 and presented details of both **805TH and 807TH**, including the scope, design of the noise barriers and landscaping works and the implementation programme. Members supported the implementation of the projects.

/13.....

13. We consulted the Advisory Committee on the Appearance of Bridges and Associated Structures[2] (ACABAS) on the aesthetic designs of the noise barriers for **805TH** and **807TH** on 19 August 2008 and 16 December 2008. The Committee accepted the proposed aesthetic designs.

14. We gazetted the road schemes of **805TH** and **807TH** under the Roads (Works, Use and Compensation) Ordinance (Cap. 370) (the Ordinance) on 11 April 2008 and received no objection. The Permanent Secretary for the Transport and Housing (Transport) authorised the road schemes of **805TH** and **807TH** under the Ordinance on 19 June 2008. The notices of authorisation were gazetted on 27 June 2008.

15. We consulted the Legislative Council Panel on Environmental Affairs on 21 January 2009 on **805TH** and **807TH**. Members did not object to the funding application for the proposed noise barrier schemes.

ENVIRONMENTAL IMPLICATIONS

16. **805TH** and **807TH** are not designated projects under the Environmental Impact Assessment Ordinance (Cap. 499). Nevertheless, we completed the environmental studies for the two projects in October 2008. The studies concluded that the projects would not cause adverse long-term environmental impact.

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

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[2] 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, the Hong Kong Institute of Planners, an academic institution, Architectural Services Department, Highways Department, Housing 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 enclosures, from the aesthetic and visual impact points of view.

18. We have considered measures in the planning and design stages to reduce the generation of construction waste where possible. In the design of the pile caps, we have raised the levels and reduce the sizes of the pile caps in order to minimise the quantity of construction waste generated from excavation for pile caps. In addition, we will require the contractor to reuse inert construction waste (e.g. excavated materials) on site or in other suitable construction sites as far as possible, in order to minimise the disposal of inert construction waste to public fill reception facilities[3]. We will encourage the contractor to maximise the use of recycled or recyclable inert construction waste, as well as the use of non-timber formwork to further minimise the generation of construction waste.

19. We will also require the contractor to submit for approval a plan setting out the waste management measures, which will include appropriate mitigation means to avoid, reduce, reuse and recycle inert construction waste. We will ensure that the day-to-day operations on site comply with the approved plan. We will require the contractor to separate the inert portion from non-inert construction waste on site for disposal at appropriate facilities. We will control the disposal of inert construction waste and non-inert construction waste to public fill reception facilities and landfills respectively through a trip-ticket system.

20. We estimate that the project **805TH** will generate in total about 51 700 tonnes of construction waste. Of these, we will reuse about 24 500 tonnes (47.4%) of inert construction waste on site and deliver 18 700 tonnes (36.2%) of inert construction waste to public fill reception facilities for subsequent reuse. In addition, we will dispose of 8 500 tonnes (16.4%) of non-inert construction waste at landfills. The total cost for accommodating construction waste at public fill reception facilities and landfill sites is estimated to be $1,567,400 for this project (based on a unit cost of $27/tonne for disposal at public fill reception facilities and $125/tonne[4] at landfills).

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

[4] 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.

21. We estimate that the project **807TH** will generate in total about 91 050 tonnes of construction waste. Of these, we will reuse about 44 200 tonnes (48.5%) of inert construction waste on site and deliver 33 850 tonnes (37.2%) of inert construction waste to public fill reception facilities for subsequent reuse. In addition, we will dispose of 13 000 tonnes (14.3%) of non-inert construction waste at landfills. The total cost for accommodating construction waste at public fill reception facilities and landfill sites is estimated to be $2,538,950 for this project (based on the unit costs in paragraph 20 above).

HERITAGE IMPLICATIONS

22. The projects **805TH** and **807TH** will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic sites/buildings, sites of archaeological interest and Government historic sites identified by the Antiquities and Monuments Office.

LAND ACQUISITION

23. The two proposed projects do not require land resumption.

INTERIM TRAFFIC DIVERSION PROPOSALS

24. For **805TH** and **807TH**, both the eastbound and westbound carriageway of Fanling Highway between Po Shek Wu Road and Wo Hing Road will be temporarily reduced from three lanes to two lanes when necessary during the construction period. We will require the contractor to maintain at least two lanes for each bound of carriageway at all times during the entire construction period, except when closure of two lanes at night time for both the eastbound and westbound carriageway for this section of Fanling Highway is required to facilitate the safe installation of the cantilevered panels of noise barriers. Such two-lane closure at night time will be minimised as far as practicable.

25. We have conducted traffic impact assessments for **805TH** and **807TH** to assess the impacts of the temporary traffic diversion during the construction period. The traffic impact assessments have concluded that the proposed temporary traffic arrangement will not cause significant adverse impacts to road users.

/**BACKGROUND**.....

BACKGROUND INFORMATION

26. We upgraded **805TH** and **807TH** to Category B in November 2006 and December 2006 respectively. In September 2007, we engaged consultants to carry out an investigation and detailed design for the proposed works under **805TH** and **807TH** at an estimated cost of $2.7 million under **Subhead 6100TX** "Highway works, studies and investigations for items in Category D of the Public Works Programme". The consultants have substantially completed the detailed design for **805TH** and **807TH**. In March 2008, we carried out site investigation works for **805TH** and **807TH** at a cost of $583,000 under **Subhead 6100TX**.

27. The aesthetic design of the proposed noise barriers will be in harmony with the environment. The panels for the proposed cantilevered-type noise barriers and vertical-type noise barriers are generally of transparent type. We propose to use green wall with embedded plants for the lower part of a section of noise barriers along the verges of roadsides of both eastbound and westbound carriageway of Fanling Highway under **805TH** and **807TH** to enhance greening in the surroundings. Typical drawings showing the perspective view of the proposed noise barriers and landscape proposal are at Enclosures 4 to 6. The North District Council and the ACABAS supported the aesthetic designs as described in paragraphs 12 and 13 above.

28. The proposed retrofitting of noise barriers will involve removal of 43 trees, including 37 trees to be felled and 6 trees to be transplanted within the project site for **805TH** and 247 trees including 179 trees to be felled and 68 trees to be transplanted within the project site for **807TH**. All the trees to be removed are not important trees[5]. We will incorporate planting proposals as part of the projects, including estimated quantities of 110 and 190 trees for **805TH** and **807TH** respectively, 6 000 and 17 900 shrubs for **805TH** and **807TH** respectively (including shrubs on green walls and planters), and 2 500 and 15 200 m^2 of grassed area for **805TH** and **807TH** respectively.

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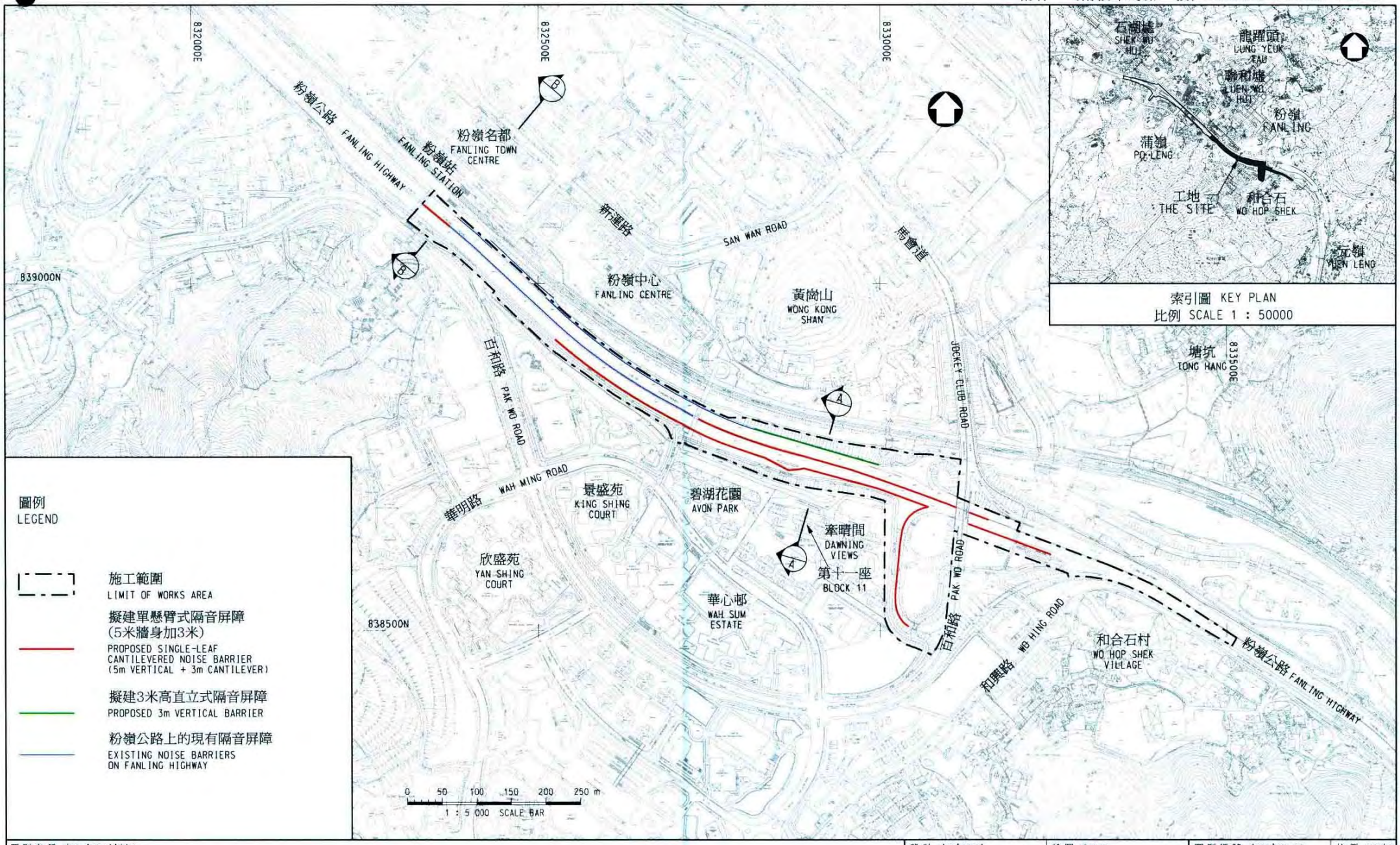
[5] An "important tree" refers to trees on the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria -
(a) trees of over 100 years old or above;
(b) trees of cultural, historical or memorable significance e.g. Fung Shui trees, trees as landmark of monastery or heritage monument, and trees in memory of important person 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.

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

Project no.	**Estimated number of jobs**			**Estimated total man-months**
	Professional/ Technical staff	**Labourer**	**Total**	
805TH	35	149	184	4 780
807TH	71	300	371	9 800

Environment Bureau
March 2009



索引圖 KEY PLAN
比例 SCALE 1 : 50000

圖例
LEGEND

- 施工範圍 LIMIT OF WORKS AREA
- 擬建單懸臂式隔音屏障 (5米牆身加3米) PROPOSED SINGLE-LEAF CANTILEVERED NOISE BARRIER (5m VERTICAL + 3m CANTILEVER)
- 擬建3米高直立式隔音屏障 PROPOSED 3m VERTICAL BARRIER
- 粉嶺公路上的現有隔音屏障 EXISTING NOISE BARRIERS ON FANLING HIGHWAY

圖則名稱 drawing title

工務計劃項目第805TH號 - 介乎港鐵粉嶺站至和興路的粉嶺公路隔音屏障加建工程
PWP ITEM NO. 805TH - RETROFITTING OF NOISE BARRIERS ON FANLING HIGHWAY (MTR FANLING STATION TO WO HING ROAD)

- 平面圖 LAYOUT PLAN

設計 designed	SIGNED	繪圖 drawn	SIGNED	圖則編號 drawing no.	比例 scale
C.W.MOK	09/01/09	Y.L.LAW	09/1/09	HMW6805TH-SP0001	如圖示 AS SHOWN
覆核 checked	SIGNED	批准 approved	SIGNED		
K.C.HUNG	09/01/09	C.W.CHOW	09/01/09		

主要工程管理處
MAJOR WORKS PROJECT MANAGEMENT OFFICE

HIGHWAYS DEPARTMENT HONG KONG 香港政府路政署

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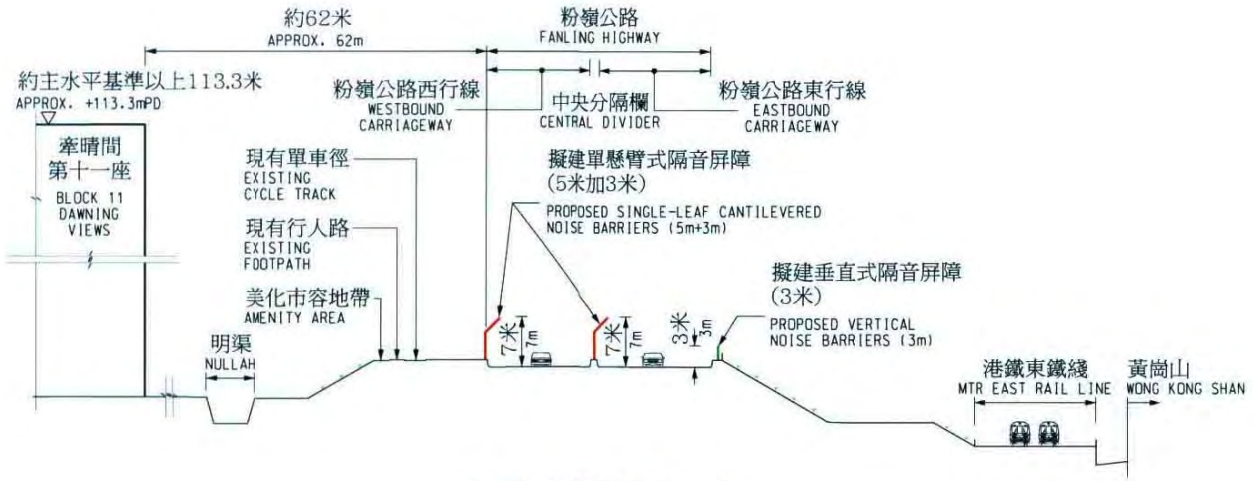
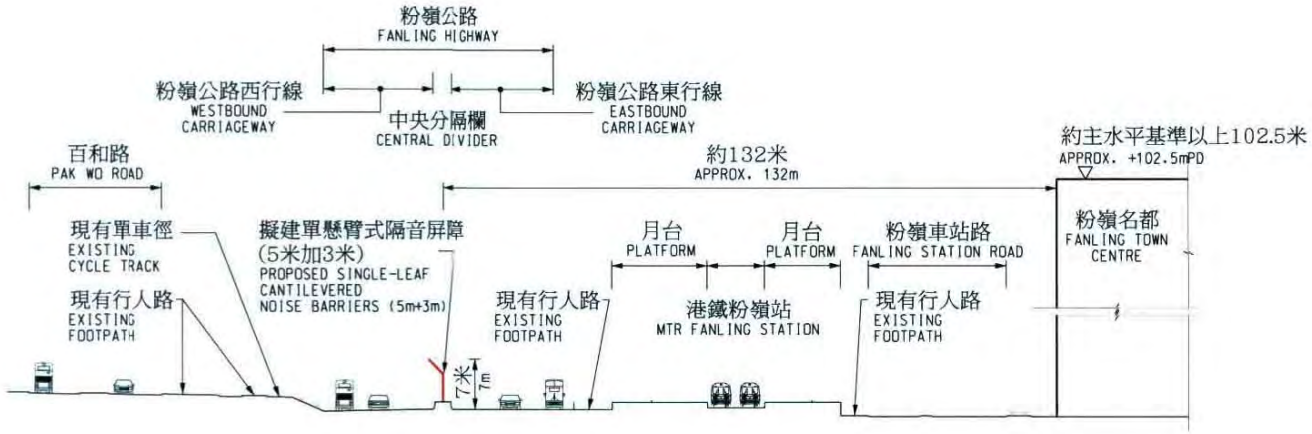


切面 SECTION A - A



切面 SECTION B - B

no.	date	description	initial
A	03/02/09	DIMENSION ADDED	SIGNED C.W.MOK

圖則名稱 drawing title

工務計劃項目第805TH號 - 介乎港鐵粉嶺站至和興路的粉嶺公路隔音屏障加建工程

PWP ITEM NO. 805TH - RETROFITTING OF NOISE BARRIERS ON FANLING HIGHWAY (MTR FANLING STATION TO WO HING ROAD)

- 切面圖 SECTIONS

設計 designed	SIGNED	繪圖 drawn	SIGNED
C.W.MOK	09/01/09	S.K.TSE	09/01/09
覆核 checked	SIGNED	批准 approved	SIGNED
K.C.HUNG	09/01/09	C.W.CHOW	09/01/09

主要工程管理處
MAJOR WORKS PROJECT MANAGEMENT OFFICE

圖則編號 drawing no. HMW6805TH-SP0002-A

比例 scale 示意圖 DIAGRAMMATIC

HIGHWAYS DEPARTMENT HONG KONG 路政署 香港

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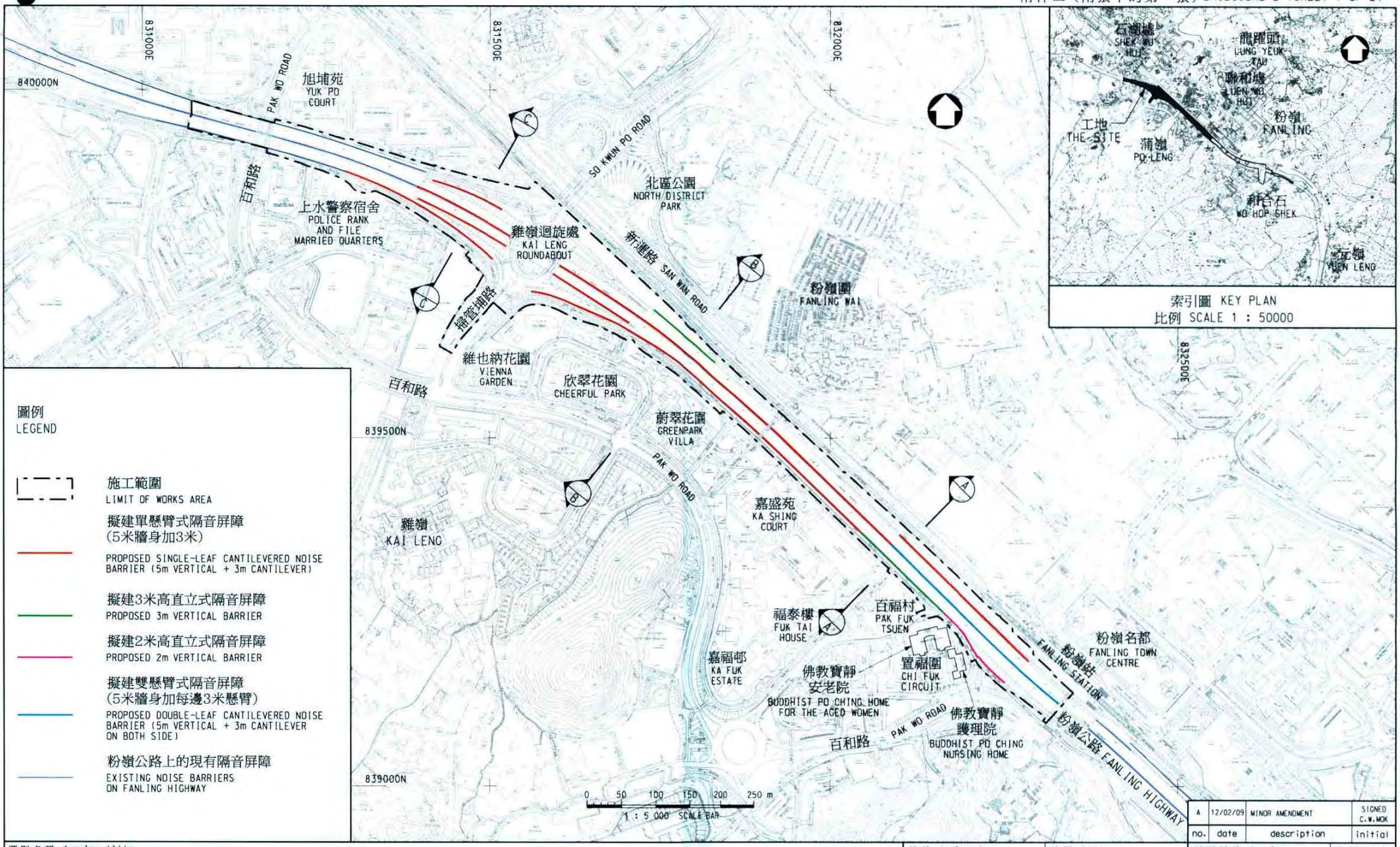

索引圖 KEY PLAN
比例 SCALE 1 : 50000

圖例
LEGEND

- 施工範圍 LIMIT OF WORKS AREA
- 擬建單懸臂式隔音屏障（5米牆身加3米） PROPOSED SINGLE-LEAF CANTILEVERED NOISE BARRIER (5m VERTICAL + 3m CANTILEVER)
- 擬建3米高直立式隔音屏障 PROPOSED 3m VERTICAL BARRIER
- 擬建2米高直立式隔音屏障 PROPOSED 2m VERTICAL BARRIER
- 擬建雙懸臂式隔音屏障（5米牆身加每邊3米懸臂） PROPOSED DOUBLE-LEAF CANTILEVERED NOISE BARRIER (5m VERTICAL + 3m CANTILEVER ON BOTH SIDE)
- 粉嶺公路上的現有隔音屏障 EXISTING NOISE BARRIERS ON FANLING HIGHWAY

no.	date	description	initial
A	12/02/09	MINOR AMENDMENT	SIGNED C.W.MOK

圖則名稱 drawing title

工務計劃項目第807TH號 - 介乎寶石湖路至港鐵粉嶺站的粉嶺公路隔音屏障加建工程
PWP ITEM NO. 807TH - RETROFITTING OF NOISE BARRIERS ON FANLING HIGHWAY (PO SHEK WU ROAD TO MTR FANLING STATION)

- 平面圖 LAYOUT PLAN

設計 designed	SIGNED C.W.MOK 09/01/09	繪圖 drawn	SIGNED Y.L.LAW 09/01/09
覆核 checked	SIGNED K.C.HUNG 09/01/09	批准 approved	SIGNED C.W.CHOW 09/01/09

主要工程管理處 MAJOR WORKS PROJECT MANAGEMENT OFFICE

圖則編號 drawing no. HMW6807TH-SP0001-A
比例 scale 如圖示 AS SHOWN

HIGHWAYS DEPARTMENT HONG KONG 香港路政署

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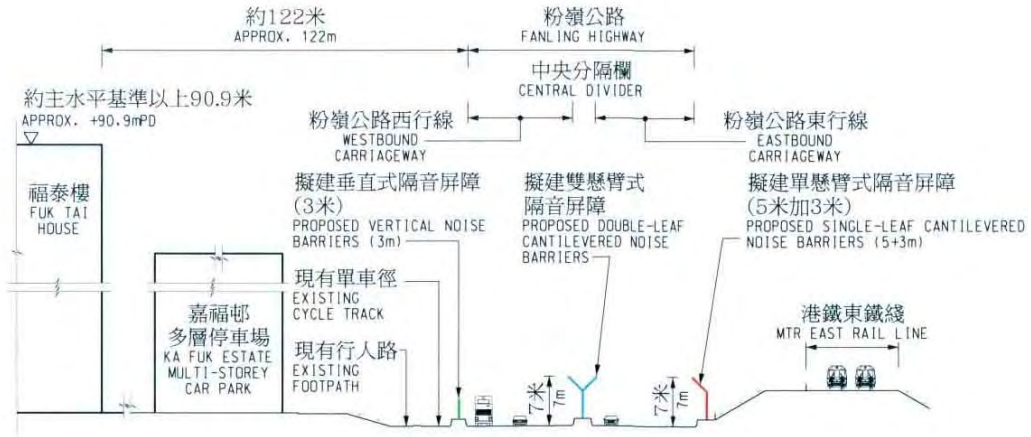
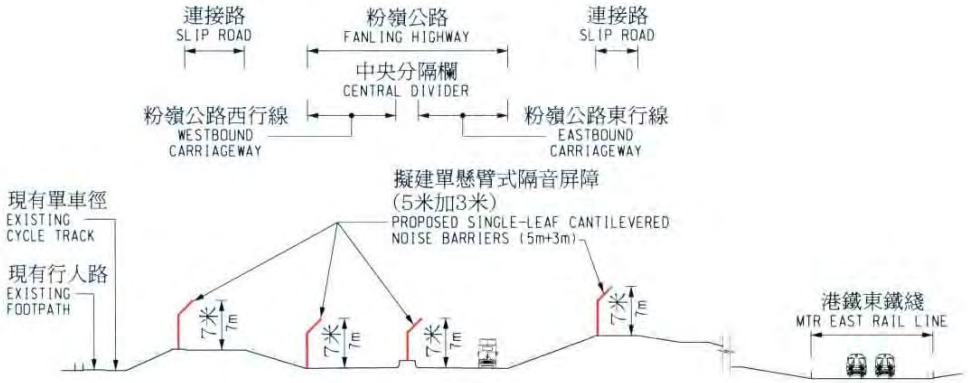


切面 SECTION A - A

切面 SECTION B - B



切面 SECTION C - C

圖則名稱 drawing title

工務計劃項目第807TH號 - 介乎寶石湖路至港鐵粉嶺站的粉嶺公路隔音屏障加建工程

PWP ITEM NO. 807TH - RETROFITTING OF NOISE BARRIERS ON FANLING HIGHWAY (PO SHEK WU ROAD TO MTR FANLING STATION)

- 切面圖 SECTIONS

設計 designed	SIGNED	繪圖 drawn	SIGNED	圖則編號 drawing no.	比例 scale
C.W.MOK	09/01/09	S.K.TSE	09/01/09	HMW6807TH-SP0002	示意圖 DIAGRAMMATIC
覆核 checked	SIGNED	批准 approved	SIGNED	© 版權所有 COPYRIGHT RESERVED	
K.C.HUNG	09/01/09	C.W.CHOW	09/01/09		

主要工程管理處
MAJOR WORKS PROJECT MANAGEMENT OFFICE

HIGHWAYS DEPARTMENT HONG KONG 香港路政署

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805TH – Retrofitting of noise barriers on Fanling Highway (MTR Fanling Station to Wo Hing Road)
807TH – Retrofitting of noise barriers on Fanling Highway (Po Shek Wu Road to MTR Fanling Station)

Breakdown of the estimates for consultants' fees (in September 2008 prices)

Consultants' staff costs		Estimated man-months		Average MPS* salary point	Multiplier (Note 1)	Estimated fee ($ million)	
		805TH	807TH			805TH	807TH
Construction supervision and contract administration (Note 2)	Professional	–	–	–	–	0.2	0.4
	Technical	–	–	–	–	0.3	0.6
Resident site staff	Professional	39	82	38	1.6	3.8	7.9
	Technical	309	624	14	1.6	9.8	19.8
					Total	14.1	28.7

*MPS = Master Pay Scale

Notes

1. A multiplier of 1.6 is applied to the average MPS point to arrive at the costs of resident site staff supplied by the consultants. (At 1 April 2008, MPS pt. 38 = $60,535 per month and MPS pt. 14 = $19,835 per month).

2. The consultants' fees for construction supervision and contract administration are estimated in accordance with Agreement No. CE 18/2007 (HY) titled "Retrofitting of Noise Barriers on Fanling Highway (Po Shek Wu Road to East Rail Fanling Station and East Rail Fanling Station to Wo Hing Road) – Investigation, Design and Construction". The construction phase of the assignment will only be executed subject to Finance Committee's approval to upgrade **805TH** and **807TH** to Category A.

圖則名稱 drawing title

工務計劃項目第805TH號 - 介乎港鐵粉嶺站至和興路的粉嶺公路隔音屏障加建工程
工務計劃項目第807TH號 - 介乎寶石湖路至港鐵粉嶺站粉嶺公路隔音屏障加建工程
PWP ITEM NO. 805TH - RETROFITTING OF NOISE BARRIERS ON FANLING HIGHWAY (MTR FANLING STATION TO WO HING ROAD)
PWP ITEM NO. 807TH - RETROFITTING OF NOISE BARRIERS ON FANLING HIGHWAY (PO SHEK WU ROAD TO MTR FANLING STATION)
- 典型景觀美化工程 TYPICAL LANDSCAPE WORKS

設計 designed	SIGNED	繪圖 drawn	SIGNED	圖則編號 drawing no.	比例 scale
C.W.MOK	09/01/09	Y.L.LAW	09/01/09	HMW6807TH-SP0003	示意圖 DIAGRAMMATIC
覆核 checked	SIGNED	批准 approved	SIGNED		
K.C.HUNG	09/01/09	C.W.CHOW	09/01/09		

主要工程管理處
MAJOR WORKS PROJECT MANAGEMENT OFFICE

HIGHWAYS DEPARTMENT HONG KONG 香港政府路政署

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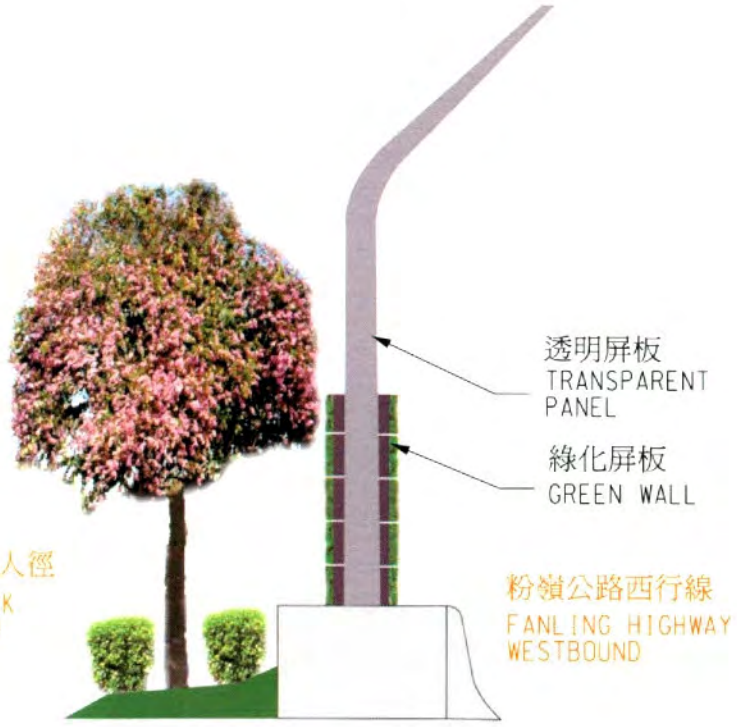
A3 420 x 297



SECTION
切面圖

ISOMETRIC VIEW FROM CARRIAGEWAY
從行車道觀望的立體景觀

ISOMETRIC VIEW FROM FOOTPATH
從行人徑觀望的立體景觀

圖則名稱 drawing title

工務計劃項目第805TH號 - 介乎港鐵粉嶺站至和興路的粉嶺公路隔音屏障加建工程
工務計劃項目第807TH號 - 介乎寶石湖路至港鐵粉嶺站的粉嶺公路隔音屏障加建工程
PWP ITEM NO. 805TH - RETROFITTING OF NOISE BARRIERS ON FANLING HIGHWAY (MTR FANLING STATION TO WO HING ROAD)
PWP ITEM NO. 807TH - RETROFITTING OF NOISE BARRIERS ON FANLING HIGHWAY (PO SHEK WU ROAD TO MTR FANLING STATION)
- 綠化隔音屏障設計 NOISE BARRIER DESIGN WITH GREEN WALLS

設計 designed SIGNED Y.P.CHENG 04/03/09	繪圖 drawn SIGNED Y.L.LAW 04/03/09
覆核 checked SIGNED K.C.HUNG 04/03/09	批准 approved SIGNED C.W.CHOW 04/03/09

主要工程管理處
MAJOR WORKS
PROJECT MANAGEMENT OFFICE

圖則編號 drawing no. HMW6807TH-SP0005

比例 scale 示意圖 DIAGRAMMATIC

HIGHWAYS DEPARTMENT 路政署 香港 HONG KONG

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A4 210 x 297

圖則名稱 drawing title

工務計劃項目第８０５ＴＨ號 - 介乎港鐵粉嶺站至和興路的粉嶺公路隔音屏障加建工程
工務計劃項目第８０７ＴＨ號 - 介乎寶石湖路至港鐵粉嶺站粉嶺公路隔音屏障加建工程
PWP ITEM NO. 805TH - RETROFITTING OF NOISE BARRIERS ON FANLING HIGHWAY (MTR FANLING STATION TO WO HING ROAD)
PWP ITEM NO. 807TH - RETROFITTING OF NOISE BARRIERS ON FANLING HIGHWAY (PO SHEK WU ROAD TO MTR FANLING STATION)
- 典型景觀美化工程 TYPICAL LANDSCAPE WORKS

設計 designed	SIGNED	繪圖 drawn	SIGNED
C.W.MOK	03/11/08	S.K.WONG	03/11/08
覆核 checked	SIGNED	批准 approved	SIGNED
K.C.HUNG	03/11/08	C.W.CHOW	03/11/08

主要工程管理處
MAJOR WORKS PROJECT MANAGEMENT OFFICE

圖則編號 drawing no. HMW6807TH-M00001

比例 scale 示意圖 DIAGRAMMATIC

HIGHWAYS DEPARTMENT HONG KONG 香港路政署

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A3 420 x 297

現況
PRESENT SITUATION

環境美化後
UPON COMPLETION OF LANDSCAPE WORKS

no.	date	description	initial
A	05/11/08	REPLACEMENT OF PHOTO	SIGNED C.W.MOK

圖則名稱 drawing title

工務計劃項目第805TH號 - 介乎港鐵粉嶺站至和興路的粉嶺公路隔音屏障加建工程
工務計劃項目第807TH號 - 介乎寶石湖路至港鐵粉嶺站粉嶺公路隔音屏障加建工程

PWP ITEM NO. 805TH - RETROFITTING OF NOISE BARRIERS ON FANLING HIGHWAY (MTR FANLING STATION TO WO HING ROAD)
PWP ITEM NO. 807TH - RETROFITTING OF NOISE BARRIERS ON FANLING HIGHWAY (PO SHEK WU ROAD TO MTR FANLING STATION)

- 典型景觀美化工程 TYPICAL LANDSCAPE WORKS

設計 designed	SIGNED C.W.MOK 03/11/08	繪圖 drawn	SIGNED S.K.WONG 03/11/08
覆核 checked	SIGNED K.C.HUNG 03/11/08	批准 approved	SIGNED C.W.CHOW 03/11/08

主要工程管理處
MAJOR WORKS PROJECT MANAGEMENT OFFICE

圖則編號 drawing no. HMW6807TH-M00002-A

比例 scale 示意圖 DIAGRAMMATIC

HIGHWAYS DEPARTMENT 路政署 香港

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A3 420 x 297