

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 706 – HIGHWAYS

Transport – Roads

819TH – Traffic Improvements to Tuen Mun Road Town Centre Section

Members are invited to recommend to Finance Committee the upgrading of **819TH** to Category A, at an estimated cost of \$1,814.4 million in money-of-the-day prices for the traffic improvements to the Tuen Mun Road Town Centre Section.

PROBLEM

We need to improve the traffic conditions of the Tuen Mun Road (TMR) Town Centre Section (TCS) to meet the anticipated traffic growth.

PROPOSAL

2. The Director of Highways, with the support of the Secretary for Transport and Housing, proposes to upgrade **819TH** (the Project) to Category A at an estimated cost of \$1,814.4 million in money-of-the-day (MOD) prices for the construction works covering mainly the widening of the TMRTCS between Yan Oi Town Square and Wong Chu Road from a dual two-lane carriageway to a dual three-lane carriageway.

/PROJECT.....

PROJECT SCOPE AND NATURE

3. The scope of **819TH** comprises –
- (a) widening of the TMRTCS between Yan Oi Town Square and Wong Chu Road of approximately 1.5 kilometres (km) long from a dual two-lane carriageway to a dual three-lane carriageway;
 - (b) resurfacing of existing section of TMR;
 - (c) construction of a single-lane flyover of approximately 450 metres (m) long, which extends from Tuen Hing Road and runs along Tsing Hoi Circuit to merge eventually with the TMR Kowloon-bound carriageway;
 - (d) reconstruction of the slip road of the existing Wong Chu Road of approximately 80 m long to facilitate proper merging with the new flyover mentioned in paragraph 3(c) above;
 - (e) demolition and reconstruction of four existing footbridges and provision of two temporary footbridges during the construction period;
 - (f) improvement of three existing traffic light signal-controlled junctions along Castle Peak Road (CPR) between Tuen Hing Road and Hoi Wing Road;
 - (g) installation of the following along the carriageway –
 - (i) vertical noise barriers of about 340 m long and 5 m high;
 - (ii) cantilevered noise barriers of about 650 m long and 5.5 m to 8m high with bend ranging from 3 m to 7 m;
 - (iii) semi-enclosures of about 800 m long and 6 m to 8 m high; and
 - (iv) full-enclosures of about 920 m long and 6 m to 8 m high;

/(h)

- (h) provision of a traffic control and surveillance system (TCSS);
- (i) associated civil, structural, landscaping, geotechnical works, and works on reprovisioning of existing facilities, environmental mitigation, drainage, road lighting, water mains and traffic aids; and
- (j) implementation of an environmental monitoring and audit (EM&A) programme for the works mentioned in paragraph 3(a) to 3(i) above.

———— A plan with cross-sections showing the proposed works is at Enclosure 1.

4. We have substantially completed the design for the Project. We plan to commence the construction works in December 2009 for completion in December 2013.

JUSTIFICATION

5. The Project covers mainly the widening of the TMRTCS between Yan Oi Town Square and Wong Chu Road from a dual two-lane to a dual three-lane carriageway. It aims to improve the traffic condition on the TMRTCS to meet the anticipated traffic growth making use of TMR as the major thoroughfare for the movement of people and goods to and from the Northwest New Territories and cross-border. Without the Project, the TMRTCS will become a bottleneck in the coming years.

6. According to the latest traffic forecast, the TMRTCS is currently operating close to its design capacity. We estimate that the road section will be operating at a critical volume to capacity (v/c) ratio¹ during the peak hours in 2016, and at a worse ratio in 2021, if no improvement is carried out. The projected v/c ratios of the road section during the peak hours in 2016 and 2021, with and without the proposed widening, are as follows –

/TMRTCS

¹ Volume to capacity (v/c) ratio is an indicator which reflects the performance of a road. A v/c ratio equal to or less than 1.0 means that a road has sufficient capacity to cope with the volume of vehicular traffic under consideration and the resultant traffic will flow smoothly. A v/c ratio above 1.0 indicates the onset of congestion; that above 1.2 indicates more serious congestion with traffic speeds deteriorating progressively with further increase in traffic.

TMRTCS	v/c ratio		
	2008	2016 ²	2021 ²
Without proposed works	0.9	1.2	1.3
With proposed works	–	0.9	1.0

7. In addition, to streamline the traffic by eliminating the weaving movements from Tuen Hing Road towards the Kowloon-bound TMR, we propose to construct a new carriageway, which extends from Tuen Hing Road and runs along Tsing Hoi Circuit, to merge with the TMR Kowloon-bound carriageway. The proposed new carriageway comprises both an at-grade road section and a single-lane flyover.

8. As the proposed road widening will be in conflict with four existing footbridges, the latter will need to be demolished. We propose to reconstruct these footbridges to maintain the road crossing facilities.

9. As congestion is anticipated at the road junctions in the vicinity of the proposed works, namely junctions of CPR/Tuen Hing Road, CPR/Tsing Hoi Circuit and CPR/Hoi Wing Road, we also propose to implement improvement works to these junctions to increase their flow capacities and improve the flow between CPR and TMR.

10. As the TMRTCS forms part of the TMR which is a major link between Tuen Mun and Yuen Long, and between Tsuen Wan and Kowloon, we propose to provide a TCSS comprising variable message signs, speed enforcement cameras, lane control signals, variable speed limit signs, closed-circuit television cameras (CCTV) and vehicle detectors to enhance the efficiency and effectiveness of traffic and incident management.

/11.

² The Tuen Mun-Chek Lap Kok Link and Tuen Mun Western Bypass are planned to be completed and become operational by 2016. The impact of the two links on the v/c ratios is currently being studied. Depending on factors such as the alignments, there may be adjustments to this traffic forecast.

11. We upgraded **746TH** – Reconstruction and Improvement of TMR and **801TH** – Widening of TMR at Tsing Tin Interchange to Category A on 25 April 2008. Both projects are now under construction. The widening of the TMRTCS together with these two projects will turn the entire strategic TMR to a dual-three lane road bringing about an overall improvement to the highway and serving the traffic needs of the Northwest New Territories better.

FINANCIAL IMPLICATIONS

12. We estimate the cost of the Project to be \$1,814.4 million in MOD prices (see paragraph 13 below), made up as follows –

		\$ million
(a)	Roads and drains	97.3
(b)	Earthworks	26.9
	(i) slopeworks	14.8
	(ii) retaining walls	12.1
(c)	Flyover and footbridges	179.0
	(i) flyover	72.9
	(ii) demolition and reconstruction of four existing footbridges	106.1
(d)	Noise mitigation measures	1,042.2
	(i) full enclosures	563.5
	(ii) semi-enclosures	364.7
	(iii) noise barriers	114.0
(e)	TCSS	9.3
(f)	Landscaping works	14.1
(g)	Consultants' fees	11.9
	(i) construction supervision and contract administration	5.4
	(ii) manangement of resident site staff	3.9
	(iii) EM&A programme	2.6

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		\$ million	
(h)	Remuneration of resident site staff (RSS)	130.2	
(i)	Contingencies	130.3	
	Sub-total	1,641.2	(in September 2008 prices)
(j)	Provision for price adjustment	173.2	
	Total	1,814.4	(in MOD prices)

Item 12(a) includes road pavements, street furniture, traffic aids, road markings, lighting, drainage, reprovisioning of existing facilities and temporary traffic arrangement measures. Item 12(b)(i) includes slope cutting and embankment filling. Item 12(b)(ii) includes reinforced earth walls and retaining walls construction. Item 12(c)(i) includes modification works of the existing flyovers and the related structural condition surveys. Item 12(c)(ii) includes the provision of two temporary footbridges. Item 12(d)(iii) includes vertical and cantilevered noise barriers. A detailed breakdown of the estimates for consultants’ fees and RSS costs by man-months is at Enclosure 2.

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

Year	\$ million (Sept 2008)	Price Adjustment Factor	\$ million (MOD)
2009 –10	16.2	1.03500	16.8
2010 –11	196.4	1.05570	207.3
2011 –12	348.0	1.07681	374.7
2012 –13	408.0	1.09835	448.1
2013 –14	375.0	1.12032	420.1
2014 –15	157.0	1.15113	180.7
2015 –16	140.6	1.18566	166.7
	1,641.2		1,814.4

/14.

14. We have derived the MOD estimate on the basis of the Government's latest forecast of the trend rate of change in the prices of public sector building and construction output for the period 2009 to 2016. We will tender the proposed civil works under a Design and Build contract. We will tender the proposed TCSS for the whole TMR under a separate re-measurement contract. All contracts will provide for price adjustments.

15. We estimate the additional annual recurrent expenditure upon completion of the Project to be about \$17.4 million.

PUBLIC CONSULTATION

16. We consulted the Traffic and Transport Committee of the Tuen Mun District Council (TMDC) on 14 September 2007 and 14 March 2008 on the details of the improvement works. We consulted the Environment, Hygiene and District Development Committee of the TMDC on 21 September 2007 and 21 November 2008 on the associated noise mitigation measures. We also consulted the District Facilities Management Committee (DFMC) of the TMDC on 19 February 2008 on the treatment of affected trees to facilitate the improvement works. TMDC Members did not object to the details of the Project but required further information on the noise mitigation measures, such as the landscape design. They also requested that noise barriers be installed on the section of TMR along Tseng Choi Street, which is outside the boundary of the Project.

17. We consulted the local residents on the Project as a pre-gazette exercise by way of a public forum held on 4 January 2008. About 35 participants attended the forum including those from TMDC, Area Committees, mutual aid committees, owners' corporations and estate management offices. They supported the Project. In February 2009, the Administration received letters from eight incorporated owners of buildings/estates along TMRTCS within the project boundary urging for early implementation of the Project to mitigate the noise nuisance caused by TMR traffic.

/18.

18. We gazetted the proposed works under the Roads (Works, Use and Compensation) Ordinance (Cap. 370) (the Ordinance) on 18 April 2008 and received 54 objections. Five objections have been subsequently withdrawn unconditionally and 49 objections remained unresolved³. Details of the objections are as follows –

- (a) One objector was of the view that the Project would involve the felling of a large number of trees. In addition, he considered that the proposed works would cause noise and environmental impacts, and create potential safety concerns during construction. He was also concerned about the reasons for adopting different types of noise barriers in the Project and the visual impact of noise enclosures. Moreover, he considered that there would be an increase in traffic along the section of CPR between Sam Shing Hui and Rose Dale Garden, and requested the installation of noise barriers/enclosures thereat. He also pointed out that no improvement was proposed to the existing public transport arrangements between the section of CPR between Wah Fat Street and Tsing Hoi Circuit and Kowloon.

The Administration's response was that the Project was a designated project under the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499). Any tree felling proposal would be submitted to the concerned District Lands Officer for approval. No old and valuable trees were found within the Project boundary and a Task Group under the DFMC of the TMDC had been formed to oversee the treatment of affected trees. In addition, necessary requirements in accordance with the EIAO would be laid down in the contract to monitor the environmental impacts during construction, and barriers or hoardings would be erected for works near shops and footways. As for the choice of noise barriers and enclosures, it was based

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³ Under the Ordinance, an objection that is withdrawn unconditionally is treated as if the objector has not lodged the objection. An objection which is not withdrawn or withdrawn with conditions is treated as an unresolved objection and will be submitted to the Chief Executive-in-Council for consideration.

on the results of the noise and air quality assessments carried out under the EIAO, and the visual impact of noise enclosures would be adequately addressed in the concerned Environmental Impact Assessment (EIA) report. As traffic impact was not expected on the section of CPR between Sam Shing Hui and Rose Dale Garden, which is outside the scope of the Project, noise mitigation measures were considered not necessary in accordance with the EIAO. The existing public transport arrangements between the section of CPR between Wah Fat Street and Tsing Hoi Circuit and Kowloon were outside the scope of the Project. As we were unable to contact the objector, the objection was considered unresolved.

- (b) Three objectors requested that –
- (i) the Administration should install noise barriers or enclosures at the section of TMR between Kam Hing Building and Parkview Court as they considered that the noise level thereof was excessive, and the relevant works should be incorporated into the Project to minimise disturbance to TMR traffic and reduce construction cost; and
 - (ii) noise mitigation measures, such as planting trees, should be applied along the section of TMR between Yan Oi Tong and Tseng Choi Street to mitigate traffic noise.

In reply, the Administration stated that –

- (iii) the section of TMR near Tseng Choi Street was already a dual three-lane carriageway and was thus not included in the Project. The proposed noise barriers under the road scheme would be required in order to meet the requirements under

/the

the EIAO whereas the section of TMR near Tseng Choi Street was outside the Project scope and should be dealt with separately under the existing retrofitting policy⁴. The Administration was conducting a review study to investigate the feasibility of retrofitting works on this concerned section of TMR; and

- (iv) the planting of trees would not be effective in mitigating noise. Low-noise road surfacing materials would be adopted at the section of TMR between Yan Oi Tong and Tseng Choi Street.

Noting our explanation, the objectors further requested the Administration to complete the concerned study as soon as possible. We replied that the Administration would endeavour to achieve this goal (see paragraph 19 below). Despite our explanation, the three objectors maintained their objections.

- (c) One objector raised similar concerns as described in paragraph 18(b)(ii) above. He further suggested that after the completion of the Project, the traffic volume, vehicle speed and noise nuisance would likely be increased. We responded in accordance with paragraph 18(b)(iv) above, and that the proposed works serve to widen sections of the existing TMR and eliminate the existing bottlenecks, but would not create additional traffic. We further explained that the speed limit would not be changed upon the completion of road widening. In response to our explanation, the objector withdrew the objection unconditionally. The objection was considered resolved.

/(d)

⁴ Under a policy endorsed by the Chief Executive-in-Council in November 2000 to address noise impact of existing roads on nearby residents, engineering solutions, by way of retrofitting of barriers and enclosures as well as resurfacing roads with low noise material, should be implemented where practicable at existing roads where traffic noise exceeds the stipulated level.

- (d) 49 objectors considered that the proposed noise barriers in the Project should be extended to cover the section of TMR fronting Kam Hing Building which was located immediately outside the Project boundary, as the building had been facing the same noise level from TMR traffic for many years as those within the Project boundary. They also considered that with the likely increase of traffic volume and vehicle speed, the air quality and noise levels would be worsened after the completion of the proposed works. Similar to paragraph 18(b)(iii) above, we responded that the section of TMR near Tseng Choi Street was already a dual three-lane carriageway and was thus not included in the Project. We explained that the Administration was carrying out a review study to investigate the feasibility of retrofitting works on this concerned section of TMR. To address objectors' concerns on the environmental impact of the Project, we explained that the scope of the EIA includes assessments on air quality, noise and visual impacts, and the assessment results would be compiled into the EIA report.

The objectors further requested the Administration to complete the review study for the retrofitting feasibility study and provide a concrete retrofitting programme as soon as possible. We replied that the Administration would endeavour to achieve this goal. In response to our explanation, four objectors withdrew their objections unconditionally. The remaining 45 objections were considered unresolved.

19. The Administration has confirmed the need for the retrofitting of noise barriers on the section of TMR along Tseng Choi Street (see Enclosure 3 for its location), and will accordingly prepare a Technical Feasibility Statement (TFS). The Administration aims to complete the TFS by end 2009. Subject to the formal establishment of the feasibility and the availability of resources, the Administration plans to consult the TMDC on the retrofitting early next year.

/20.

20. Having considered the unresolved objections, and the Administration's plan to prepare the TFS on the retrofitting of noise barriers on the section of TMR along Tseng Choi Street, the Chief Executive-in-Council authorised the proposed works under the Ordinance on 31 March 2009. The authorisation notice was gazetted on 17 April 2009.

21. We briefed the Legislative Council Panel on Transport on the progress of the Project on 24 November 2006. Members supported the early implementation of the Project. We sought the Panel's views on 24 April 2009 on our proposal to upgrade the Project to Category A, which Members also supported. A Member requested the Administration to provide information in the Public Works Subcommittee paper on the measures to improve the environmental conditions of the covered section of the TMRTCS at Tuen Mun Town Plaza for passengers waiting at the bus stops thereat.

22. As part of the Project, the Administration will construct noise barriers of 5 m high between the service roads and TMR on each bound within the covered section as a protective screen against nuisance generated from TMR traffic. Also, we will install noise absorptive panels on the barriers to further enhance noise abatement. With the provision of these noise barriers, the impacts of noise and emissions from the passing vehicles on the footpath will be significantly reduced. It will improve the existing environmental condition. In response to the concern raised at the meeting of the Transport Panel on 24 April 2009, we will also study the implementation of appropriate measures to improve the ventilation of the location.

23. We consulted the Advisory Committee on the Appearance of Bridges and Associated Structures⁵ on the proposed aesthetic design of the noise barriers and enclosures, vehicular bridges and footbridges under the Project on 17 February 2009. The Committee accepted the proposed aesthetic design.

/24.

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; 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.

24. The Administration understands the community's concern on the visual aspects of noise barriers. In this regard, we launched an Open International Ideas Competition for Noise Barrier/Enclosure Design on 6 January 2009. The results were announced on 27 April 2009. We will incorporate the concept ideas of the winning entries into the design of noise barriers/enclosures under the Project.

ENVIRONMENTAL IMPLICATIONS

25. The Project is a designated project under Schedule 2 of the EIAO. An environmental permit is required for the construction and operation of the Project. The Director of Environmental Protection approved the EIA report for the Project in February 2009.

26. The EIA report concluded that, with the implementation of the recommended mitigation measures, the environmental impacts of the Project could be controlled to within established criteria under the EIAO and the Technical Memorandum on the EIA Process. We will implement the mitigation measures as recommended in the EIA report and the EM&A Manual. The key environmental mitigation measures include the installation of noise barriers/enclosures along the concerned sections of the TMRTCS.

27. During construction, we will control noise, dust and site run-off nuisance to comply with established criteria through the implementation of appropriate mitigation measures in the works contract. We will implement an EM&A programme during the course of construction to ensure that proactive measures are adopted to avoid the occurrence of adverse environmental impacts on the public.

28. We have considered optimising the alignment and the designed level of road works in the planning and design stages to reduce the generation of construction waste where possible. In addition, we will require the contractor to reuse inert construction waste (e.g. excavated soil materials) on site or in other suitable construction sites as far as possible, in order to minimise the disposal of

/inert

inert construction waste to public fill reception facilities⁶. 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.

29. 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 the day-to-day operations on site to 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.

30. We estimate that the Project will generate about 23 700 tonnes of construction waste. Of these, we will reuse about 6 000 tonnes (25%) of inert construction waste on site and deliver 13 200 tonnes (56%) of inert construction waste to public fill reception facilities for subsequent reuse. We will dispose of the remaining 4 500 tonnes (19%) 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 about \$920,000 for the Project (based on an unit cost of \$27/tonne for disposal at public fill reception facilities and \$125/tonne⁷ at landfills).

HERITAGE IMPLICATIONS

31. The Project 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.....

⁶ 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.

⁷ 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 is likely to be more expensive) when the existing ones are filled.

LAND ACQUISITION

32. No resumption of private land or major land clearance will be required.

TEMPORARY TRAFFIC ARRANGEMENTS

33. The TMRTCS is an important part of the strategic TMR. We will implement temporary traffic arrangements (TTAs) to enable the construction works, involving lane closures, traffic diversion and other arrangements. To minimise the traffic impact caused by the works to the TMRTCS, we will maintain the same number of traffic lanes in each direction of the existing carriageway during peak hours in the construction period. To facilitate the safe installation of the cantilevered and overhead panels of noise barriers, we will implement lane closures at night time (or non-working days). We will minimise the lane closures as far as practicable.

34. We will consult the TMDC prior to the implementation of major TTAs especially those involving lane closures. A traffic management liaison group comprising representatives of the Highways Department, Hong Kong Police Force, Transport Department and other concerned government departments will be set up to assess the TTAs to be proposed by the contractor.

BACKGROUND INFORMATION

35. We upgraded **819TH** to Category B in March 2007.

36. We engaged consultants in May 2007 to undertake the investigation and design for the Project at an estimated cost of \$13.0 million in MOD prices under **Subhead 6100TX** "Highway works, studies and investigations for items in Category D of the Public Works Programme". We have substantially completed the design to invite tenders for the Design and Build contract of the Project.

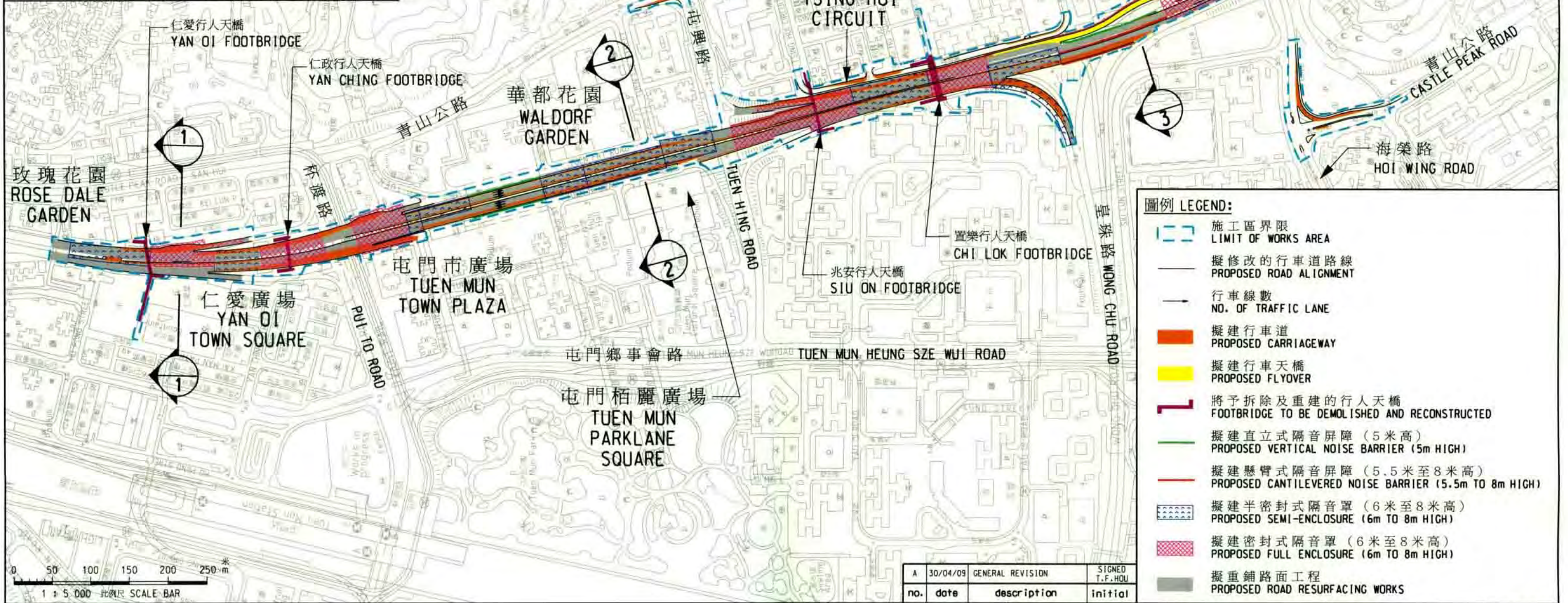
37. Of the about 990 trees within the Project boundary, about 130 trees will be preserved. The proposed works will involve the removal of about 860 trees, including about 500 trees to be felled (including 23 dead trees/*Leucaena leucocephala*) and about 360 trees to be transplanted. All of the trees to be removed are not important trees⁸. We will incorporate planting proposals as part of the proposed works, including an estimated quantity of about 500 heavy standard or standard trees, 4 000 whip trees and 150 shrubs which totals to approximately 6 000 square metres of woodland planting area. The total number of trees to be planted will outweigh the number of trees affected by the Project. We briefed the Task Group of DFMC of the TMDC and some green groups on the tree proposal and received no adverse comments.

38. We estimate that the proposed works will create about 850 jobs (160 for professional/technical staff and 690 for labourers) providing a total employment of about 33 450 man-months.

Transport and Housing Bureau
May 2009

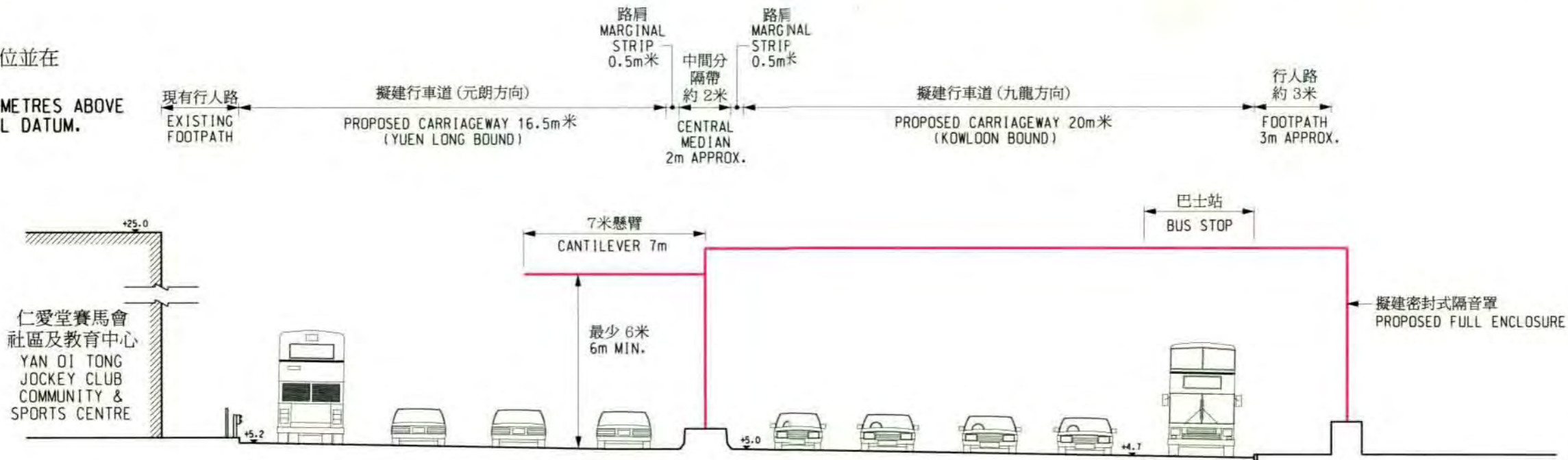
⁸ “Important trees” refer to trees in the Register of Old and Valuable Trees, or any other trees that meet one or more of the following criteria:-

- (a) trees of 100 years old or above;
- (b) trees of cultural, historical or memorable significance e.g. Fung Shui tree, tree as landmark of monastery or heritage monument, and trees in memory of important persons or events;
- (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.

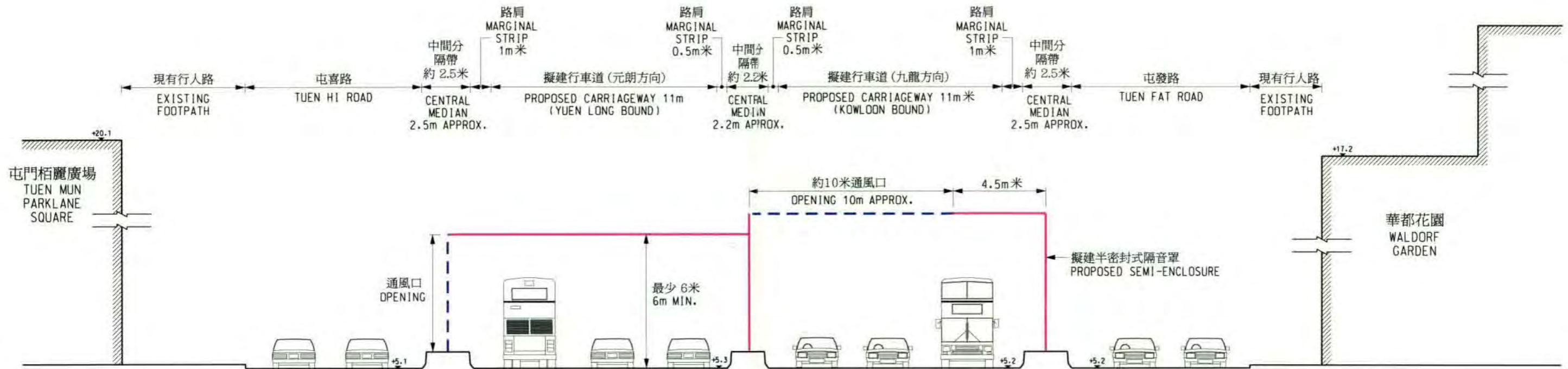


圖則名稱 plan title		設計 designed	SIGNED	繪圖 drawn	SIGNED	圖則編號 plan no.	比例 scale
工務計劃項目第819TH號 - 屯門公路市中心段交通改善工程 - 平面圖		T.F.HOU	14/04/09	W.L.LAM	14/04/09	HMW6819TH-SP0002-A	1:5000
PWP ITEM NO. 819TH - TRAFFIC IMPROVEMENTS TO TUEN MUN ROAD TOWN CENTRE SECTION - LAYOUT PLAN		覆核 checked	SIGNED	批准 approved	SIGNED	© 版權所有 COPYRIGHT RESERVED	
		W.C.CHAN	14/04/09	C.K.WONG	14/04/09	HONG KONG 路政署	
主要工程管理處 MAJOR WORKS PROJECT MANAGEMENT OFFICE							

註釋 NOTES:
 所有水平均以米為單位並在
 香港主水平基準上。
 ALL LEVELS ARE IN METRES ABOVE
 HONG KONG PRINCIPAL DATUM.



切面圖 SECTION 1-1



切面圖 SECTION 2-2

圖則名稱 plan title

工務計劃項目第819TH號 - 屯門公路市中心段交通改善工程 - 切面圖
 PWP ITEM NO. 819TH - TRAFFIC IMPROVEMENTS TO TUEN MUN ROAD TOWN CENTRE SECTION
 - SECTION

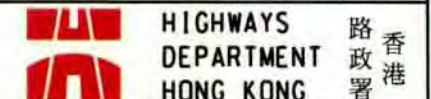
設計 designed	SIGNED	繪圖 drawn	SIGNED
T.F.HOU	14/04/09	W.L.LAM	14/04/09
覆核 checked	SIGNED	批准 approved	SIGNED
W.C.CHAN	14/04/09	C.K.WONG	14/04/09

主要工程管理處
 MAJOR WORKS PROJECT MANAGEMENT OFFICE

A	30/04/09	GENERAL REVISION	SIGNED
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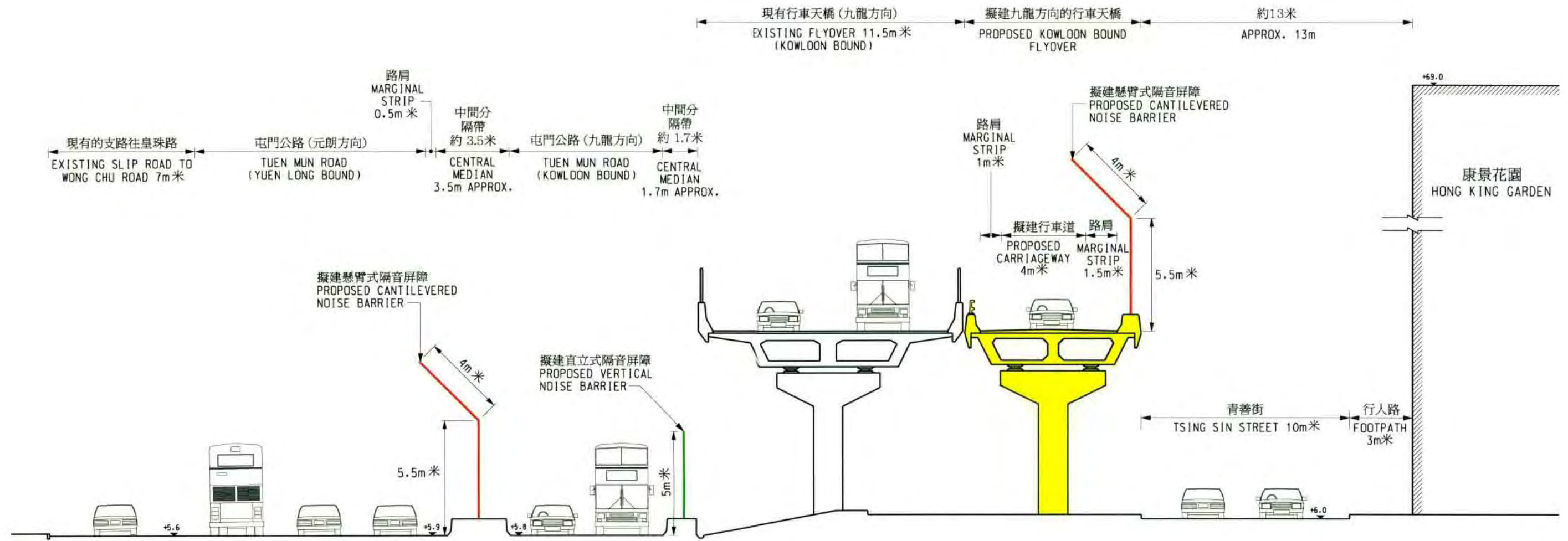
圖則編號 plan no.	比例 scale
HMW6819TH-SP0003-A	1:200

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註釋 NOTES:

所有水平均以米為單位並在
香港主水平基準上。
ALL LEVELS ARE IN METRES ABOVE
HONG KONG PRINCIPAL DATUM.



切面圖 SECTION 3-3

圖則名稱 plan title

工務計劃項目第819TH號 - 屯門公路市中心段交通改善工程 - 切面圖
PWP ITEM NO. 819TH - TRAFFIC IMPROVEMENTS TO TUEN MUN ROAD TOWN CENTRE SECTION
- SECTION

設計 designed	SIGNED	繪圖 drawn	SIGNED
T.F.HOU	14/04/09	W.L.LAM	14/04/09
覆核 checked	SIGNED	批准 approved	SIGNED
W.C.CHAN	14/04/09	C.K.WONG	14/04/09

主要工程管理處
MAJOR WORKS PROJECT MANAGEMENT OFFICE

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no.	date	description	initial

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Enclosure 2 to PWSC(2009-10)29

819TH – Traffic Improvements to Tuen Mun Road Town Centre Section

Breakdown of the estimates for consultants' fees and resident site staff costs (in September 2008 prices)

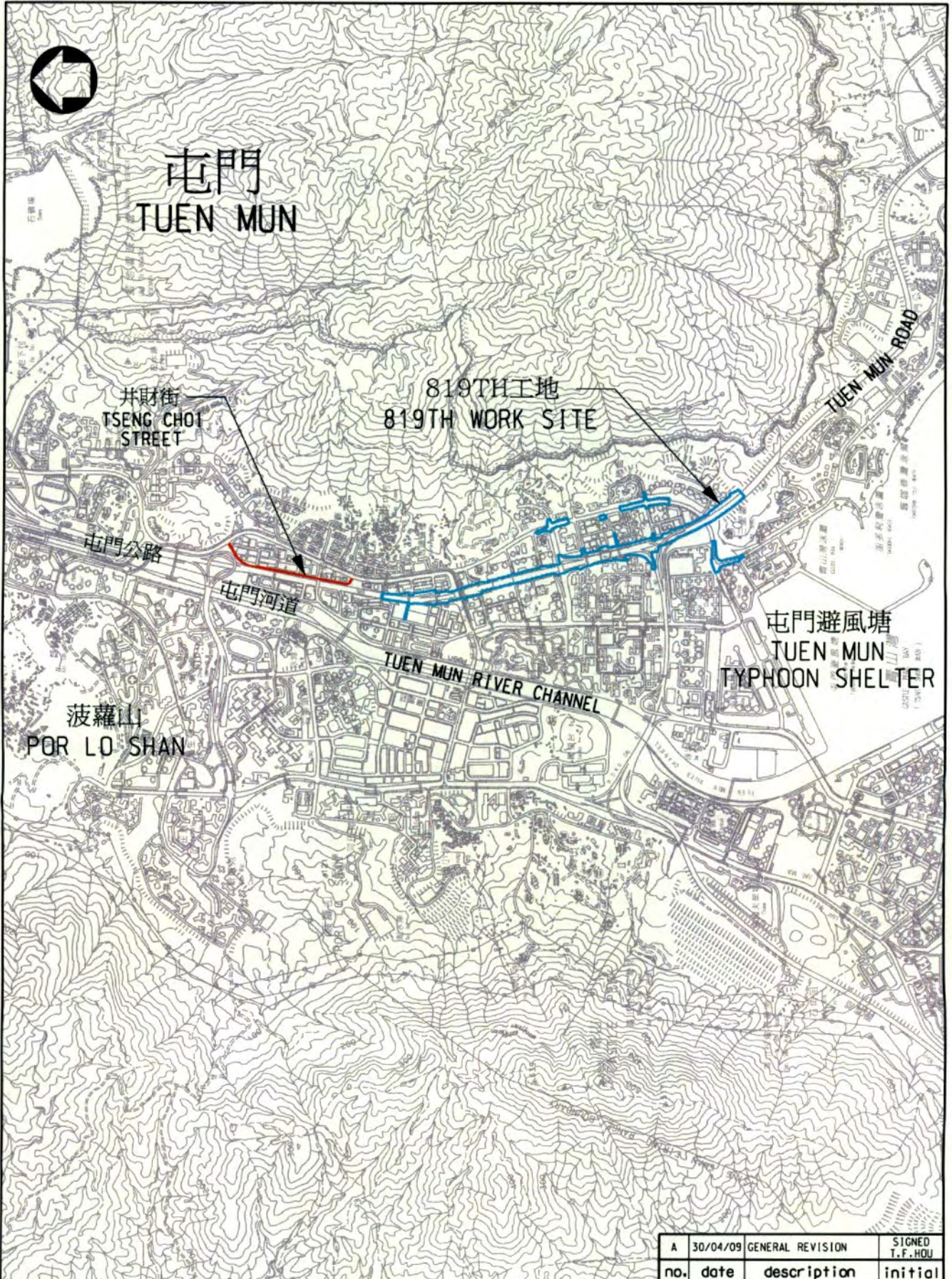
		Estimated man- months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee (\$ million)
(a) Consultants' staff costs					
(i) Construction supervision and contract administration ^(Note 2)	Professional	–	–	–	2.6
	Technical	–	–	–	2.8
(ii) EM&A programme	Professional	11.5	38	2.0	1.4
	Technical	30	14	2.0	1.2
				Sub-total	<u>8.0</u>
(b) Resident site staff costs	Professional	530	38	1.6	51.3
	Technical	2 608	14	1.6	82.8
Comprising –				Sub-total	<u>134.1</u>
(i) Consultants' fees for management of resident site staff					3.9
(ii) Remuneration of resident site staff					130.2
				Total	<u>142.1</u>

* 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 case of resident site staff supplied by the consultants. (As 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 Supplementary Agreement No. 1 to CE 22/2005 (HY) titled "Traffic Improvements to Tuen Mun Road Town Centre Section – Investigation, Design and Construction". The construction phase of the assignment will be executed only subject to Finance Committee's approval to upgrade **819TH** to Category A.



圖則名稱 plan title		設計 designed SIGNED T.F.HOU 14/04/09	繪圖 drawn SIGNED W.L.LAM 14/04/09	圖則編號 plan no. HMW6819TH-SP0005-A	比例 scale 1:25000
工務計劃項目第819TH號 - 屯門公路市中心段 交通改善工程 - 索引圖		覆核 checked SIGNED W.C.CHAN 14/04/09	批准 approved SIGNED C.K.WONG 14/04/09	© 版權所有 COPYRIGHT RESERVED	
PWP ITEM NO. 819TH - TRAFFIC IMPROVEMENTS TO TUEN MUN ROAD TOWN CENTRE SECTION - KEY PLAN		主要工程管理處 MAJOR WORKS PROJECT MANAGEMENT OFFICE		 HIGHWAYS DEPARTMENT HONG KONG	