

For discussion
on 22 February 2016

LEGISLATIVE COUNCIL PANEL ON ENVIRONMENTAL AFFAIRS

PWP Item No. 814TH – Retrofitting of Noise Barriers on Tuen Mun Road (Fu Tei Section)

PURPOSE

This paper seeks Members' views on the proposal to upgrade **814TH** – Retrofitting of Noise Barriers on Tuen Mun Road (Fu Tei Section) to Category A at an estimated cost of \$786.2 million in money-of-the-day (MOD) prices for retrofitting of noise barriers on the section of Tuen Mun Road between the footbridge to Fung Tei Station and Lam Tei Raw Water Pumping Station.

PROPOSAL AND JUSTIFICATION

2. To mitigate the traffic noise impact of existing roads on neighbouring residents, it is a government policy to consider the implementation of direct engineering solutions, where practicable, by way of retrofitting of noise 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.

3. For residents in the neighbourhood of Tuen Mun Road (Fu Tei Section) between the footbridge to Fung Tei Station and Lam Tei Raw Water Pumping Station, there are a total of about 860 dwellings exposed to traffic noise level exceeding 70 dB(A). The proposed project comprises retrofitting of noise barriers and semi-enclosures on this road section which will benefit about 830 dwellings with reduction in traffic noise levels of about 1 to 14 dB(A). A breakdown of the number of dwellings based on the respective level of reduction in traffic noise is at **Enclosure 1**.

¹ Road traffic noise level is specified in terms of L10(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.

4. The proposed scope of works under the project includes –
- (a) retrofitting of semi-enclosure from 7 metres (m) to 12 m in height over the southbound carriageway with a 3 m cantilevered section extending over the northbound carriageway between –
 - (i) Fung Tei Station and the Fung Tei Station light rail bridge of about 95 m in length;
 - (ii) the Fung Tei Station light rail bridge and the vehicular bridge to Castle Peak Road – San Hui of about 82 m in length;
 - (iii) the vehicular bridge to Castle Peak Road – San Hui and the footbridge to Tuen Fu Road of about 379 m in length; and
 - (iv) the footbridge to Tuen Fu Road and Lam Tei Raw Water Pumping Station in two sections of about 91 m in total length;
 - (b) retrofitting of cantilevered noise barrier of about 19 m in length and about 7 m in height along the central median between the two sections of semi-enclosures near Lam Tei Raw Water Pumping Station;
 - (c) retrofitting of vertical noise barriers of 3 m in height along –
 - (i) the verge of the southbound carriageway underneath the Fung Tei Station light rail bridge, the vehicular bridge to Castle Peak Road – San Hui and the footbridge to Tuen Fu Road in three sections of 31 m in total length; and
 - (ii) the central median underneath the Fung Tei Station light rail bridge, the vehicular bridge to Castle Peak Road – San Hui and the footbridge to Tuen Fu Road in three sections of 33 m in total length;
 - (d) associated drainage, geotechnical, roadworks, utilities diversions, street lighting, traffic aids and landscaping works; and
 - (e) implementation of an environmental monitoring and audit (EM&A) programme for the works in (a) to (d) above.

5. The aesthetic design of the proposed noise barriers will be in harmony with the surrounding environment. We will install absorptive, transparent and translucent panels for the noise barriers to improve aesthetics. Layout plan and section plan of the proposed works are at **Enclosures 2 and 3**.

6. Subject to funding approval of the Finance Committee (FC), we plan to commence the proposed works in the second quarter of 2016 for completion in the fourth quarter of 2019.

FINANCIAL IMPLICATIONS

7. We estimate the capital cost of the proposed works to be \$786.2 million in MOD prices.

INTERIM TRAFFIC ARRANGEMENT

8. We have conducted a traffic impact assessment (TIA) for the proposed works including assessment of the impact on traffic during the construction stage. We will maintain the same number of existing traffic lanes in the northbound and southbound carriageways of Tuen Mun Road during the peak hours throughout the construction period. The TIA concluded that the proposed works would not cause significant adverse impact on road users with implementation of appropriate temporary traffic arrangements.

ENVIRONMENTAL IMPLICATIONS

9. The proposed works is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). We have conducted an environmental review which concluded that the proposed works would not cause adverse long-term environmental impact.

10. To minimise short-term impacts during construction, 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 review.

11. At the planning and design stages, we have considered the design and construction sequence of the proposed works 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) on site or in other suitable construction sites as far as possible, in order to minimise the disposal of inert construction waste at public fill reception facilities². We will encourage the contractor to maximise the use of recycled or recyclable inert construction waste, and the use of non-timber formwork to further reduce the generation of construction waste.

² 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.

12. At the construction stage, we will 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 at public fill reception facilities and landfills respectively through a trip-ticket system.

13. We estimate that the proposed works will generate in total 37 000 tonnes of construction waste. Of these, we will reuse 10 200 tonnes (27%) of inert construction waste on site and deliver 22 500 tonnes (61%) of inert construction waste to public fill reception facilities for subsequent reuse. We will dispose of the remaining 4 300 tonnes (12%) of non-inert construction waste at landfills. The total cost for accommodating the construction waste at public fill reception facilities and landfill sites is estimated to be about \$1.145 million for the proposed works (based on a unit charge rate of \$27 per tonne for disposal at public fill reception facilities and \$125 per tonne at landfills as stipulated in the Waste Disposal (Charge for Disposal of Construction Waste) Regulation).

14. Of the 229 trees within the proposed works boundary, 227 trees will be preserved. The proposed works will involve felling of two trees which block the construction of the noise barriers. The trees to be felled are not important trees³. We will incorporate planting of four trees as part of the proposed works.

HERITAGE IMPLICATIONS

15. The proposed works will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic sites or buildings, sites of archaeological interest and government historic sites identified by the Antiquities and Monuments Office.

³ 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 an 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 m (measured at 1.3 m above ground level), or with height/canopy spread equal or exceeding 25 m.

LAND ACQUISITION

16. The proposed works do not require land resumption.

PUBLIC CONSULTATION

17. We consulted the Environment, Hygiene and District Development Committee (EH&DDC) of the Tuen Mun District Council on the proposed works on 15 November 2013. Members agreed to carry out the proposed works and urged for early implementation to relieve the residents of traffic noise impact. We gazetted the road scheme for the proposed works of the project under the Roads (Works, Use and Compensation) Ordinance (Cap. 370) (the Ordinance) in January and February 2014.

18. We received 141 public objections (mainly from residents of the Brilliant Garden) against the proposed noise barriers along Castle Peak Road – San Hui off the Brilliant Garden. The objectors were mainly concerned about the noise barriers' possible adverse effects on the Brilliant Garden in aspects such as daylight provision, visual impact and public security. They also expressed reservations about the practical necessity for the proposed works. To address these objections and concerns, we arranged four meetings with the objectors to explain that the proposed semi-enclosures along Tuen Mun Road (Fu Tei Section) were mainly for mitigating traffic noise generated from that road section, and would benefit dwellings in the Parkland Villas, Napa Valley, Siu Hong Court and Brilliant Garden, etc. That said, seventy-odd dwellings in the Brilliant Garden would remain exposed to traffic noise level between 71 to 74 dB(A). The proposed noise barriers along Castle Peak Road – San Hui would not only reduce the number of the dwellings affected by excessive traffic noise but also help further alleviate traffic noise problem faced by other dwellings in the Brilliant Garden. To address the objectors' concerns over daylight provision, visual impact and public security, we suggested adjustments to the proposed noise barriers' design and various improvement measures, such as using more transparent and glare-proof materials for the proposed noise barriers, reducing the number of trees to be affected and increasing the separation distance between the proposed noise barriers and the Brilliant Garden. Despite all our explanations and efforts, 131 objectors maintained their objections against the proposed noise barriers. We thus decided to amend the proposed project to exclude the proposed noise barriers along Castle Peak Road – San Hui to address the objections.

19. We further consulted the EH&DDC of the TMDC on the proposed works on 18 July 2014. Members supported the amendment scheme of noise barriers and urged for its early implementation. We gazetted the amendment scheme in September 2014 and no new objections were received.

20. The Chief Executive in Council authorised the project under the Ordinance subsequently. The notice of authorisation was gazetted on 3 and 10 July 2015.

21. We consulted the Advisory Committee on the Appearance of Bridges and Associated Structures⁴ (ACABAS) in June 2015. Members supported and accepted the aesthetic design.

ADVICE SOUGHT

22. Subject to Members' support, we plan to submit the proposal to the Public Works Subcommittee for examination in April 2016, with a view to seeking the funding approval of FC.

⁴ The ACABAS 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. It is responsible for vetting the design of bridges and other structures associated with the highway system, including noise barriers and enclosures, from the aesthetic and visual impact points of view.

ATTACHMENT

Enclosure 1 – breakdown of the number of dwellings based on the respective level of reduction in traffic noise

Enclosure 2 – Drawing No. HMW6814TH-SK0019

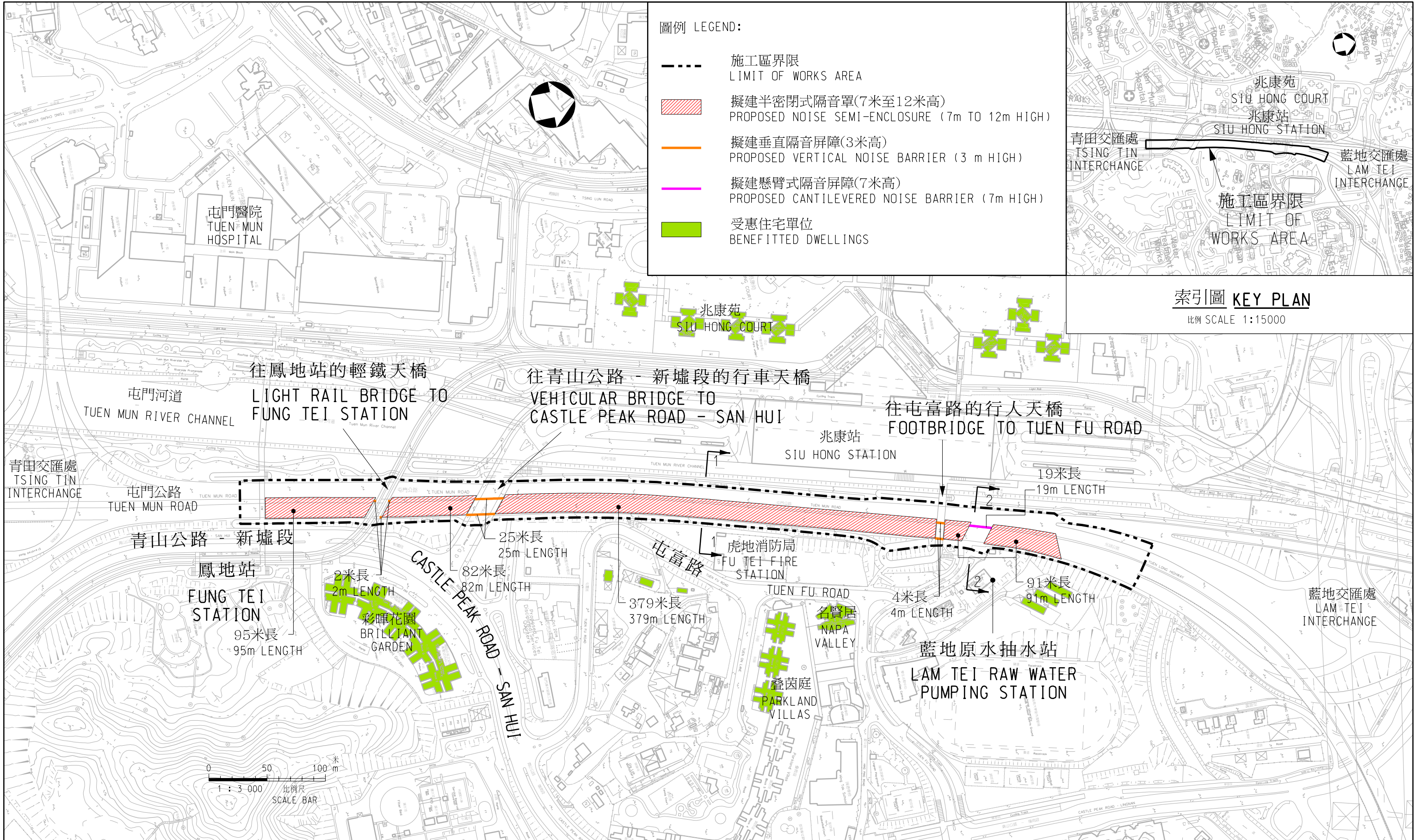
Enclosure 3 – Drawing No. HMW6814TH-SK0020

Environmental Protection Department
February 2016

**814TH - Retrofitting of noise barriers on
Tuen Mun Road (Fu Tei Section)**

**Breakdown of the number of benefitted dwellings based
on the respective level of reduction in traffic noise**

Reduction in traffic noise (dB(A))	Dwelling benefitted (Units)
11-15	39
6-10	463
1-5	328

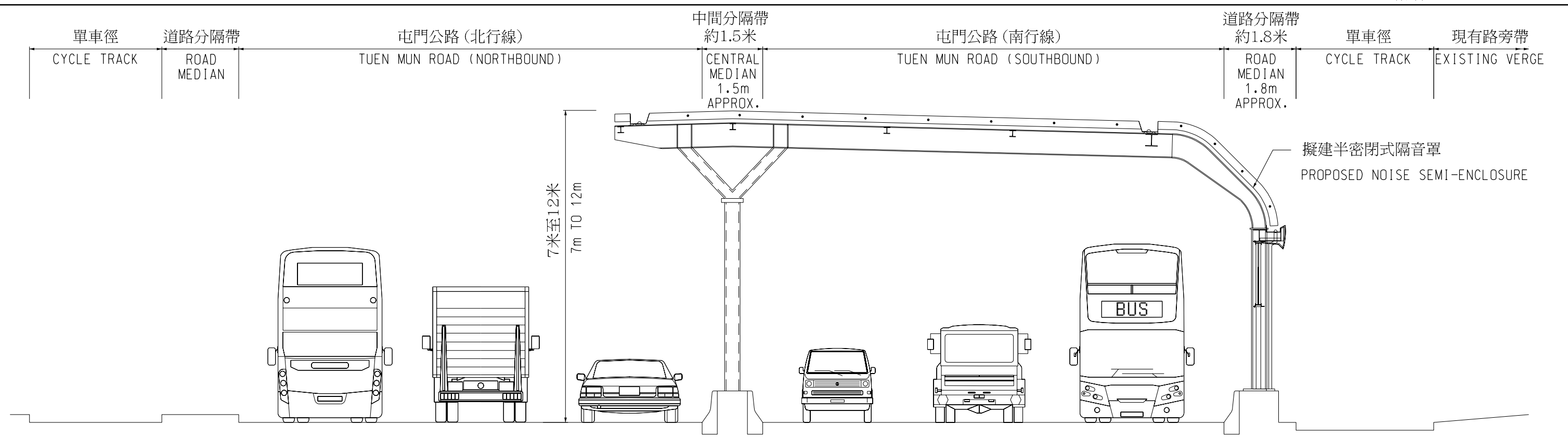


圖則名稱 drawing title

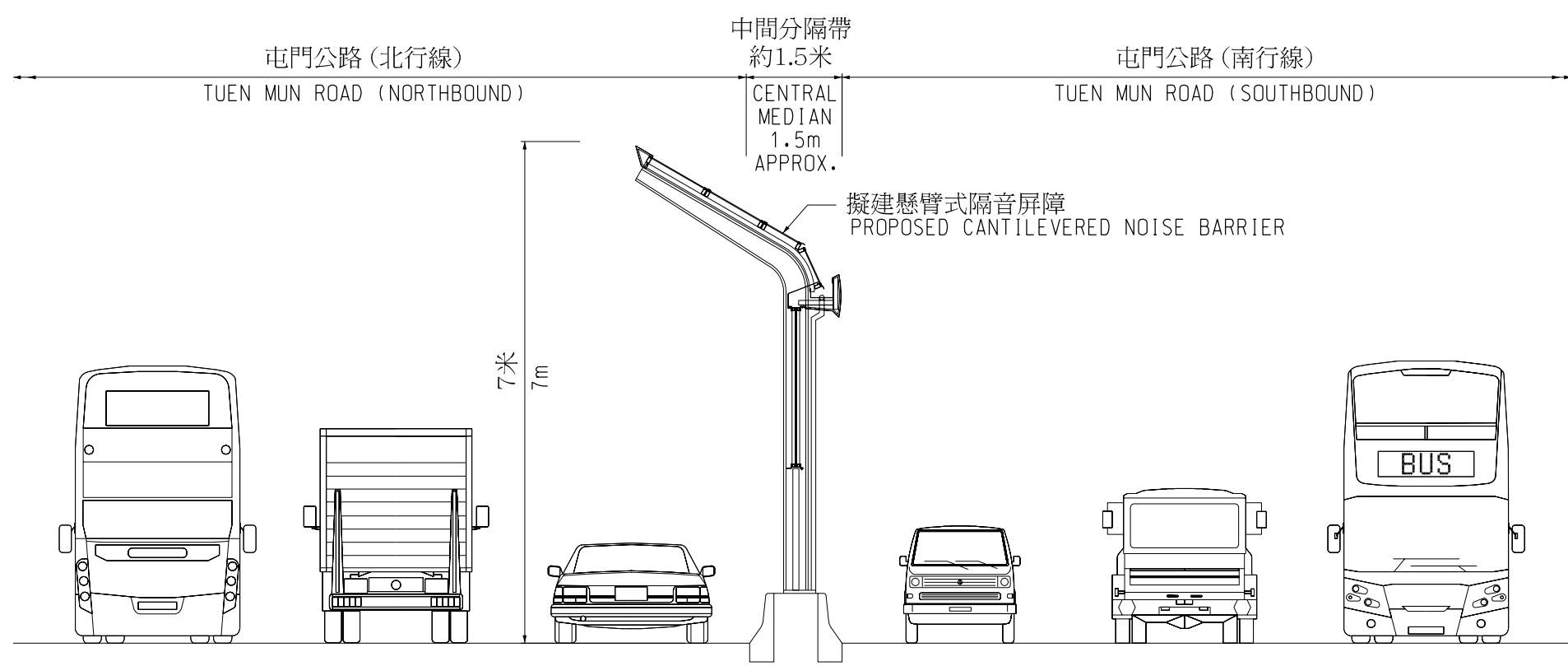
工務項目計劃第814TH號 - 屯門公路(虎地段)加建隔音屏障工程 - 平面圖
PUBLIC WORKS PROGRAMME ITEM NO. 814TH - RETROFITTING OF NOISE BARRIERS ON TUEN MUN ROAD (FU TEI SECTION) - LAYOUT PLAN

圖則編號 drawing no. HMW6814TH-SK0019 比例 scale 1:3000 OR AS SHOWN

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HONG KONG HIGHWAYS DEPARTMENT 路政署



切面圖 SECTION 1-1



切面圖 SECTION 2-2

圖則名稱 drawing title

工務項目計劃第814TH號 - 屯門公路（虎地段）加建隔音屏障工程 - 切面圖
 PUBLIC WORKS PROGRAMME ITEM NO. 814TH - RETROFITTING OF NOISE BARRIERS ON TUEN MUN ROAD (FU TEI SECTION) - SECTION

圖則編號 drawing no. HMW6814TH-SK0020 比例 scale 1:100

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