

**For discussion on
22 January 2018**

**LEGISLATIVE COUNCIL
PANEL ON ENVIRONMENTAL AFFAIRS**

804TH — Retrofitting of Noise Barriers on Tai Po Road (Sha Tin Section)

PURPOSE

This paper seeks Members' views on the proposal to upgrade Public Works Programme (PWP) Item No. **804TH** "Retrofitting of Noise Barriers on Tai Po Road (Sha Tin Section)" to Category A at an estimated cost of \$851.8 million in money-of-the-day (MOD) prices for retrofitting noise barriers on the section of Tai Po Road between Scenery Court and Citylink Plaza and that between Wo Che Estate and Fo Tan Road.

PROJECT SCOPE

2. The proposed project includes –
 - (a) retrofitting of the following noise barriers and enclosures on an approximately 410 metre (m) section of Tai Po Road (Sha Tin Section) between Scenery Court and Citylink Plaza:
 - (i) two sections of noise semi-enclosure (6 m to 12 m high) of about 260 m in total length over the southbound carriageway with a 2 m cantilevered section extending over the northbound carriageway;
 - (ii) a section of cantilevered noise barrier (6.5 m high) of about 70 m in length along the verge of the southbound carriageway;
 - (iii) a section of vertical noise barrier (5 m high) of about 155 m in length along the central median; and
 - (iv) two sections of vertical noise barrier (6 m high) of about 220 m in total length along the verge of the northbound carriageway;

- (b) retrofitting of the following noise barriers and enclosures on an approximately 180 m section of Tai Po Road (Sha Tin Section) between Wo Che Estate and Fo Tan Road:
 - (i) a section of noise semi-enclosure (6 m high) of about 110 m in length over the southbound carriageway with a 2 m cantilevered section extending over the northbound carriageway;
 - (ii) a section of vertical noise barrier (5 m high) of about 170 m in length along the verge of the southbound carriageway;
 - (iii) a section of cantilevered noise barrier (6 m high) of about 110 m in length along the verge of the northbound carriageway; and
 - (iv) a section of vertical noise barrier (2 m to 5 m high) of about 90 m in length along the verge of the northbound carriageway;
- (c) associated works on lighting, slope, drainage, traffic aids, other utilities and landscaping, as well as permanent closure of part of the verge area for retrofitting of noise enclosures; and
- (d) implementation of an environmental monitoring and audit (EM&A) programme for the works mentioned in (a) to (c) above.

The layout plan and section plan of the proposed works are at **Enclosures 1 and 2** respectively.

3. Regarding the arrangement for the construction works, the Civil Engineering and Development Department (CEDD) has proposed to carry out road widening works between the two road sections mentioned above and will consult the Panel on Transport of the Legislative Council on that PWP Item (No. **861TH** – Widening of Tai Po Road (Sha Tin Section)) on 19 January 2018. In order to minimise the inconvenience caused to the residents concerned and road users during the construction stage, the CEDD and Highways Department plan to carry out the two projects under one single works contract. The locations and scopes of PWP Item Nos. **804TH** and **861TH** are shown at **Enclosure 3**.

4. Subject to funding approval of the Finance Committee (FC), we plan to commence the construction works in the second quarter of 2018 for completion in the second half of 2023.

JUSTIFICATIONS

5. To mitigate the traffic noise impact of existing roads on neighbouring residents, it is the Government's policy, where practicable and subject to availability of resource, to study the implementation of direct noise mitigation measures on existing roads generating traffic noise at neighbouring residents at levels exceeding 70 dB(A)¹. Such measures include retrofitting of noise barriers and enclosures on roads, and road resurfacing with low noise materials.

6. Currently, a total of some 2 250 dwellings near the section of Tai Po Road between Scenery Court and Citylink Plaza and that between Wo Che Estate and Fo Tan Road are affected by traffic noise at levels exceeding 70 dB(A). Having regard to the site constraints, the proposed project comprises retrofitting of noise barriers and semi-enclosures on the above road sections, benefitting about 2 150 dwellings with reduction in traffic noise levels by about 1 to 20 dB(A). A breakdown of the number of benefitted dwellings by the respective level of reduction in traffic noise is at **Enclosure 4**.

FINANCIAL IMPLICATIONS

7. We estimate the capital cost of the proposed project to be \$851.8 million in MOD prices.

ENVIRONMENTAL IMPLICATIONS

8. The proposed project is not a designated project under the Environmental Impact Assessment Ordinance (Cap. 499). We have conducted an environmental review and the conclusion is that the works concerned will not cause adverse long-term environmental impact.

¹ Road traffic noise level is specified in terms of $L_{10}(1 \text{ hour})$ which is the noise level exceeded for 10% of a one-hour period and is generally measured at peak traffic flow. The traffic noise limit of 70 dB(A) for residential premises as stipulated in the Hong Kong Planning Standards and Guidelines is adopted as the criterion for studying the implementation of noise mitigation measures under existing policy.

9. To minimise short-term impact during construction, we will implement mitigation measures to control the nuisances caused by construction noise, dust and site run-off in compliance with the established standards and guidelines. We will also carry out the EM&A programme to ensure proper implementation of the recommendations of the environmental review.

10. At the planning stage, we have considered the design and construction sequences of the proposed works to reduce the generation of construction waste wherever possible. In addition, the contractor will be required to reuse inert construction waste (e.g. excavated soil) on site or in other suitable construction sites as far as possible, in a bid to minimise the disposal of inert construction waste at public fill reception facilities². The contractor will also be encouraged 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.

11. At the construction stage, the contractor will have to submit for approval a plan setting out the waste management measures, which should include appropriate mitigation actions 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, and will require the contractor to separate the inert portion from non-inert construction waste on site for disposal at appropriate facilities. Disposal of inert and non-inert construction waste at public fill reception facilities and landfills respectively will be supervised through a trip-ticket system³.

² Public fill reception facilities are specified in Schedule 4 of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N). Disposal of inert construction waste at public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

³ Trip-ticket system is to record down the routes of vehicles for transporting construction waste through a systematic way to ensure the orderly transportation of construction waste to the appropriate facilities for disposal to help prevent illegal dumping. Contractor is required to complete a standard trip-ticket form outlining the details of the transportation vehicle, type and approximate volume of waste and the designated disposal facility. Once the waste is delivered to the designated facility, a receipt is issued to the vehicle operator for return to the project engineer or architect representative for verification of the contractor's compliance with the requirements.

12. We estimate that the proposed works will generate 43 500 tonnes of construction waste in total. Of these, 24 600 tonnes of inert construction waste (57%) will be reused on site and around 17 550 tonnes of inert construction waste (40%) will be delivered to public fill reception facilities for subsequent reuse. The remaining 1 350 tonnes of non-inert construction waste (3%) will be disposed of at landfills. For the proposed works, the total cost for accommodating the construction waste at public fill reception facilities and landfills is estimated to be about \$1.52 million (based on a unit charge rate of \$71 per tonne for disposal at public fill reception facilities and \$200 per tonne at landfills as stipulated in the Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 354N)).

13. The aesthetic design of the proposed noise barriers and enclosures will be in harmony with the surrounding environment. Transparent and translucent panels will be used as far as possible provided that the noise reduction performance of the barriers and enclosures will not be affected. The design was submitted to the Advisory Committee on the Appearance of Bridges and Associated Structures (ACABAS)⁴ for consultation in October 2017, and received support and endorsement from members of the committee.

14. Of the 763 trees within the proposed works boundary, 132 will be preserved and the remaining 631 have to be felled as they will block the project of retrofitting noise barriers and enclosures. Although most of those roadside trees to be felled have been grown for years, they are not important trees⁵. We

⁴ The ACABAS comprises representatives of the Hong Kong Institute of Architects, the Hong Kong Institution of Engineers, the Hong Kong Institute of Planners, academic institutions, Architectural Services Department, Highways Department, Housing Department and CEDD. 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.

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 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.

propose to compensate by planting about 1 052 whips⁶ and this planting proposal will be incorporated into the proposed project.

HERITAGE IMPLICATIONS

15. 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 ACQUISITION

16. No land resumption is required for the proposed project.

PUBLIC CONSULTATION

17. The Health and Environmental Committee of the Sha Tin District Council was consulted on the proposed project on 7 July 2016, and its members agreed that the project should be carried out to alleviate the traffic noise impact on nearby residents. The scheme and plans of the proposed project were gazetted under the Roads (Works, Use and Compensation) Ordinance (Cap. 370) (the Ordinance) on 30 September 2016 and 7 October 2016 respectively. No objection was received during the statutory period. Hence the project was authorised under the Ordinance with the notice of authorisation gazetted on 30 December 2016 and 6 January 2017.



⁶ Newly planted trees are whips that will take certain time to grow big enough to compensate for the loss in respect of landscape.

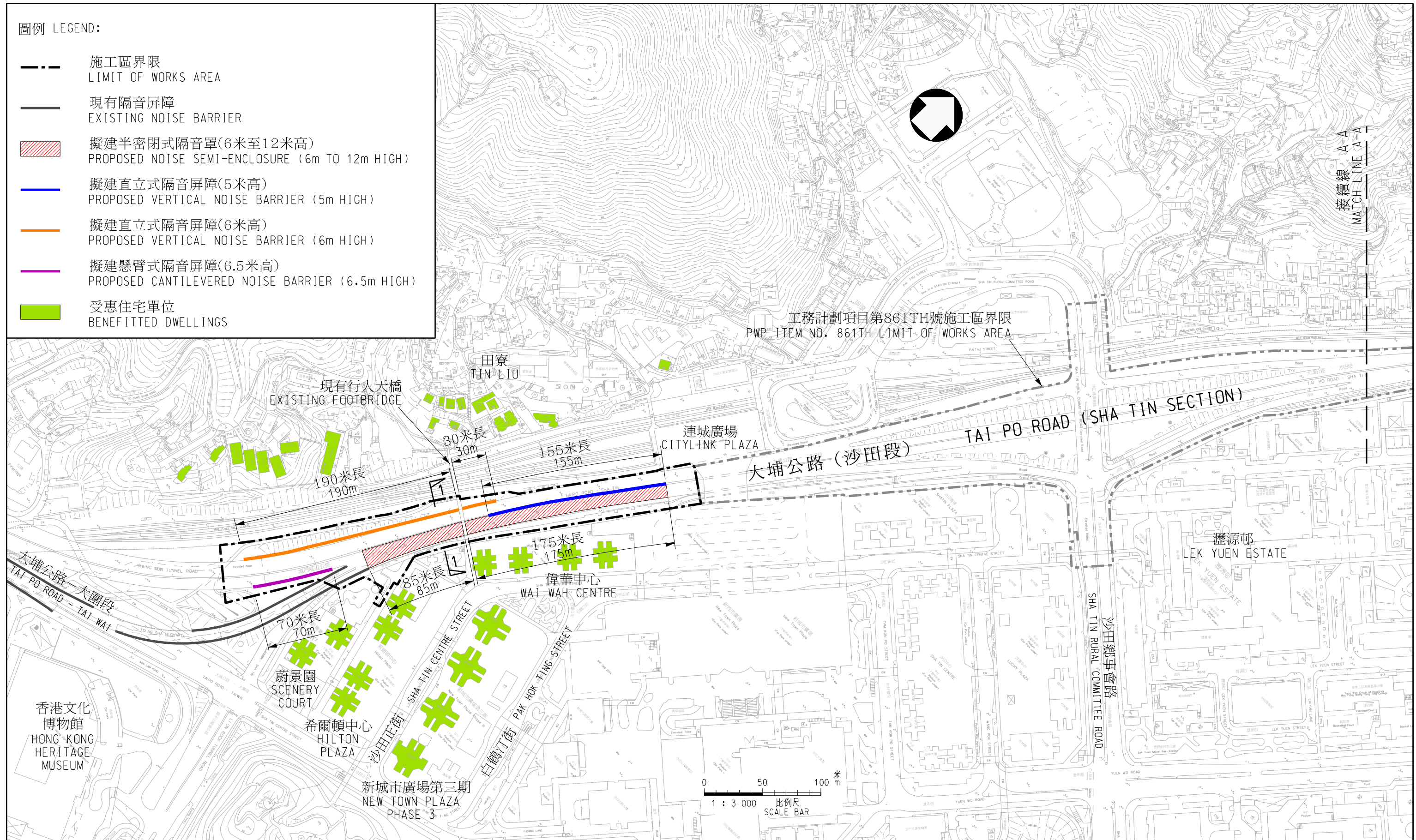
WAY FORWARD

18. We plan to seek funding approval from the FC for the proposed works under **804TH** in May 2018 after consulting the Public Works Subcommittee. Members are invited to comment on the proposed funding application.

**Environment Bureau
Highways Department
January 2018**

圖例 LEGEND:

-  施工區界限
LIMIT OF WORKS AREA
-  現有隔音屏障
EXISTING NOISE BARRIER
-  擬建半密閉式隔音罩(6米至12米高)
PROPOSED NOISE SEMI-ENCLOSURE (6m TO 12m HIGH)
-  擬建直立式隔音屏障(5米高)
PROPOSED VERTICAL NOISE BARRIER (5m HIGH)
-  擬建直立式隔音屏障(6米高)
PROPOSED VERTICAL NOISE BARRIER (6m HIGH)
-  擬建懸臂式隔音屏障(6.5米高)
PROPOSED CANTILEVERED NOISE BARRIER (6.5m HIGH)
-  受惠住宅單位
BENEFITTED DWELLINGS



圖則名稱 plan title

工務計劃項目第804TH號 - 大埔公路 (沙田段) 加建隔音屏障工程 - 平面圖

PUBLIC WORKS PROGRAMME ITEM NO. 804TH - RETROFITTING OF NOISE BARRIERS ON TAI PO ROAD (SHA TIN SECTION) - LAYOUT PLAN

(兩張圖中的第一張) (SHEET 1 OF 2)

圖則編號 plan no.

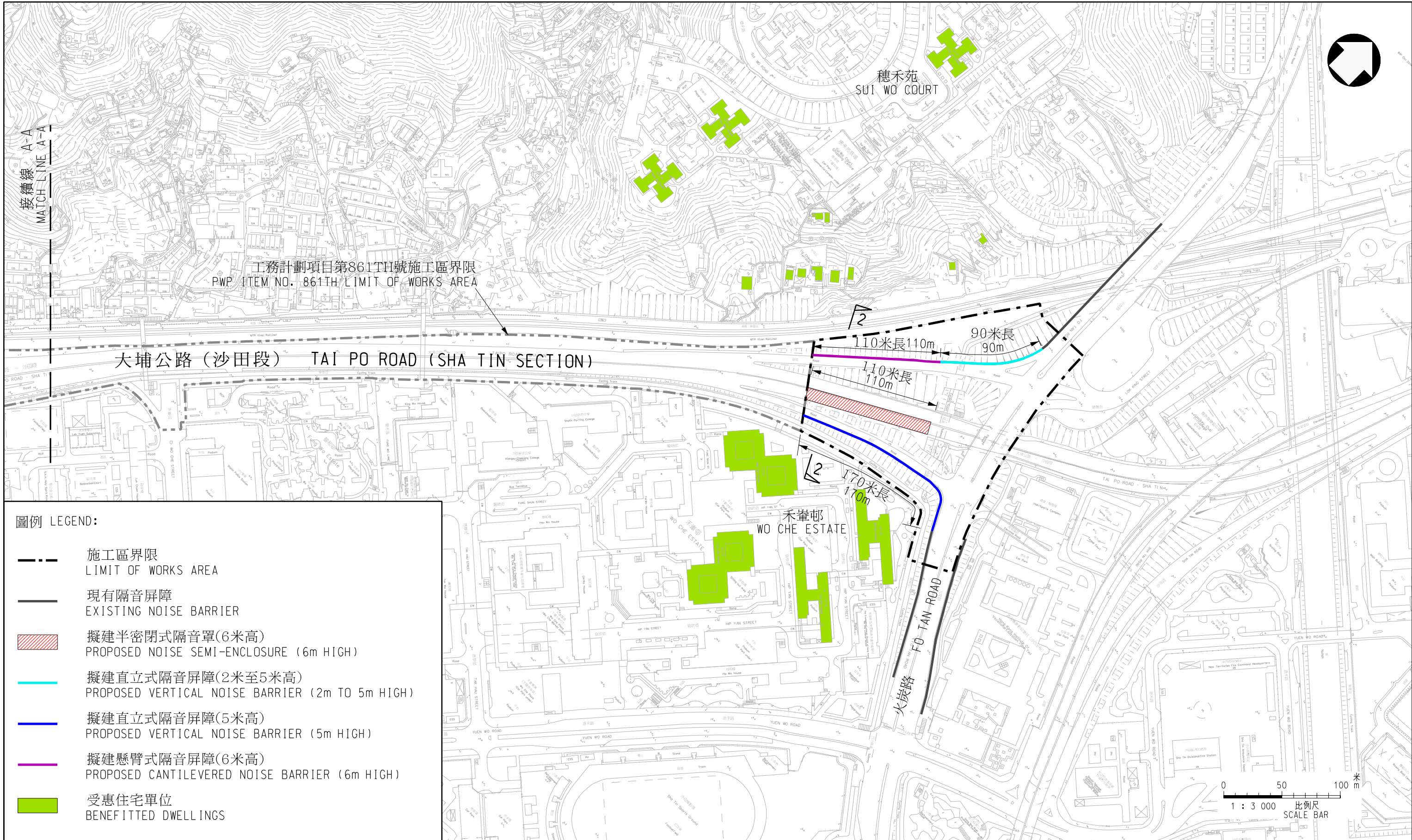
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比例 scale

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圖則名稱 plan title

工務計劃項目第804TH號 - 大埔公路（沙田段）加建隔音屏障工程 - 平面圖

PUBLIC WORKS PROGRAMME ITEM NO. 804TH - RETROFITTING OF NOISE BARRIERS ON TAI PO ROAD (SHA TIN SECTION) - LAYOUT PLAN

(兩張圖中的第二張) (SHEET 2 OF 2)

圖則編號 plan no.

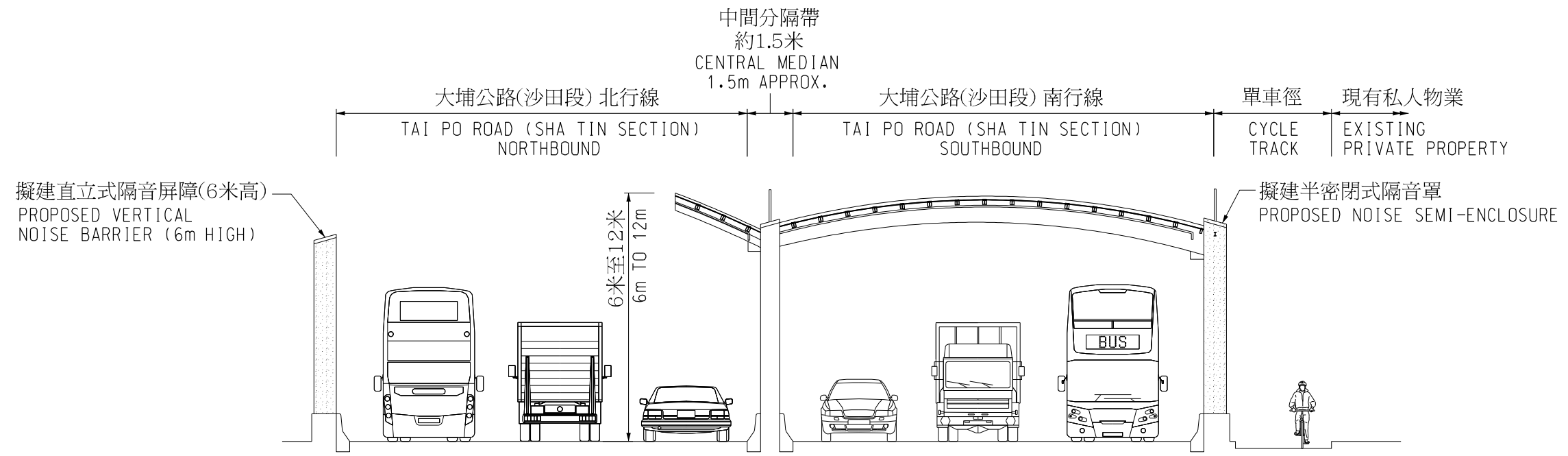
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比例 scale

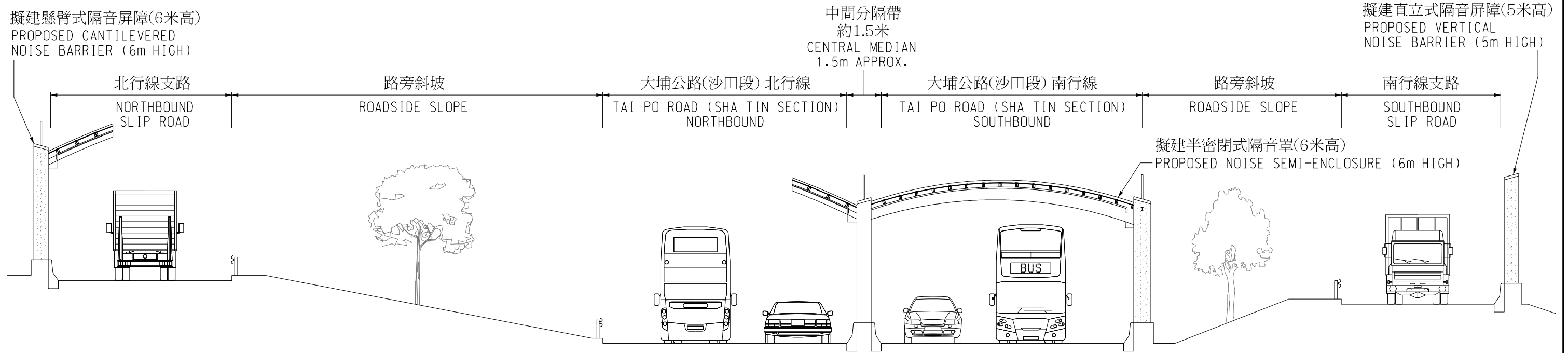
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切面圖 SECTION 1-1



切面圖 SECTION 2-2

圖則名稱 drawing title

工務計劃項目第804TH號 - 大埔公路(沙田段)加建隔音屏障工程 - 切面圖

PUBLIC WORKS PROGRAMME ITEM NO. 804TH - RETROFITTING OF NOISE BARRIERS ON TAI PO ROAD (SHA TIN SECTION) - SECTION

圖則編號 drawing no.
HMW6804TH-SK0128

比例 scale
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圖則名稱 plan title	圖則編號 plan no.	比例 scale
工務計劃項目第804TH號 - 大埔公路 (沙田段) 加建隔音屏障工程 - 加建隔音屏障工程及道路擴闊工程的位置圖 PUBLIC WORKS PROGRAMME ITEM NO. 804TH - RETROFITTING OF NOISE BARRIERS ON TAI PO ROAD (SHA TIN SECTION) - LOCATION PLAN FOR RETROFITTING PROJECT AND ROAD WIDENING PROJECT	HMW6804TH-SK0129	1:6000
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	HIGHWAYS DEPARTMENT HONG KONG	路政署 香港

**Public Works Programme Item No. 804TH –
Retrofitting of Noise Barriers on Tai Po Road (Sha Tin Section)**

Breakdown of the number of benefitted dwellings by
the respective level of reduction in traffic noise

Reduction in Traffic Noise (dB(A))	Dwelling Benefitted (Units)
16 - 20	101
11 - 15	302
6 - 10	635
1 - 5	1 109