

**For discussion  
on 15 November 2013**

**Legislative Council Panel on Transport  
Central-Wan Chai Bypass and Island Eastern Corridor Link**

**PURPOSE**

This paper seeks Members' view on the proposal to increase the approved project estimate (APE) for **579TH** (i.e. "Central-Wan Chai Bypass and Island Eastern Corridor Link") by \$7,934.3 million from \$28,104.6 million to \$36,038.9 million in money-of-the-day (MOD) prices.

**BACKGROUND**

2. In July 2009, the Finance Committee (FC) of the Legislative Council approved the upgrading of **579TH** to Category A at an estimated cost of \$28,104.6 million in MOD prices. The approved scope of works under **579TH** comprises –

- (a) construction of a dual three-lane road tunnel of about 3.7 kilometres (km) long between the Rumsey Street Flyover in Central and the Island Eastern Corridor (IEC) in North Point;
- (b) construction of the approach roads to the proposed road tunnel west portal and the associated slip roads in Central, Wan Chai and Causeway Bay of about 3 km in total length;
- (c) modification of Rumsey Street Flyover westbound up ramp, demolition of Rumsey Street Flyover eastbound down ramp and widening of the Rumsey Street Flyover Extension of about 200 metres (m) long;
- (d) modification of a section of IEC of about 800 m long between Hing Fat Street and Po Leung Kuk Yu Lee Mo Fan Memorial School and an up ramp from Hing Fat Street to IEC eastbound;

- (e) installation of the following noise mitigation facilities:
  - (i) vertical noise barriers of about 350 m long and 3.5 m high and cantilevered noise barriers of about 230 m long and 5.5 m high with 1 to 3 m cantilever along sections of the proposed slip road leading to the IEC eastbound; and
  - (ii) noise semi-enclosures of about 730 m long and 10 m high along both bounds of the IEC and a section of the proposed slip road branching out from the IEC westbound;
- (f) installation of a traffic control and surveillance system (TCSS);
- (g) reprovisioning of the Whitfield Depot, the affected facilities within Victoria Park and the affected mooring facilities in the Causeway Bay Typhoon Shelter (CBTS);
- (h) associated electrical and mechanical (E&M), drainage, landscaping and slope works, and works on junction modification, modification of the bus terminus at Central Ferry Pier, buildings and ventilation structures; and
- (i) implementation of an environmental monitoring and audit (EM&A) programme for the works mentioned in items 2(a) to 2(h) above.

Plans showing the proposed works are at **Enclosure 1**.

## **PROGRESS OF WORKS**

3. Highways Department commenced the construction works in 2009 with a part entrusted to the Civil Engineering and Development Department for construction under the Central Reclamation III (CRIII) and the Wan Chai Development Phase II (WDII) projects. The whole **579TH** is implemented under 13 works contracts, details of which are shown at **Enclosure 2**. We have so far awarded 12 works contracts mainly on reclamation, tunnels, and viaducts construction.

4. Up till now, we have completed four works contracts including the tunnel structure under the CRIII project, the re-mooring works at CBTS, the re-provisioning of the Whitfield Depot and the reclamation in North Point. The rest of the works are in full swing. Works in the approach roads and the tunnel west portal in Central are gradually taking shape while the modification of the IEC and the associated works in North Point are also in active progress. As for the tunnel construction, some 40% of the tunnel structure in the permanent reclamation formed under WDII has been completed and about 35% of the tunnel structure employing temporary reclamation method at the CBTS and the ex-Public Cargo Working Area sections has also been built. On the whole, the construction works are progressing satisfactorily in general. We envisage that the Central-Wan Chai Bypass and Island Eastern Corridor Link can commission in 2017.

#### **ADJUSTMENT OF PROJECT ESTIMATE**

5. Following a review of the financial situation, we consider it necessary to increase the APE for **579TH** by \$7,934.3 million from \$28,104.6 million to \$36,038.9 million in MOD prices to cover the additional costs mainly arising from the following -

- (I) increase in cost for the tunnel construction works; and
- (II) increase in provision for price adjustment.

Details of the increases in APE are elaborated in paragraphs 6 to 12 below.

#### **(I) Increase in Cost for the Tunnel Construction Works**

6. The works under **579TH** involves, among other things, the construction of 3.7 km of tunnel which is supported on diaphragm walls and barrette piles founded on bedrock. During the design stage, we had assessed the geotechnical conditions of the tunnel route based on available ground information in the vicinity, as well as information gathered from the site investigation for this project. When the project estimate for **579TH** was prepared in 2009, the depth of diaphragm walls and barrette piles for the tunnel was estimated based on the site investigation information available then. However, as revealed from the actual ground conditions encountered during the construction stage of diaphragm wall and barrette pile, the bedrock profile varied significantly from location to location and were generally deeper than those envisaged at design stage, i.e. the bedrock levels were deeper-than-expected, especially for the tunnel section in

CBTS, resulting in deeper diaphragm walls and barrette piles required. This, coupled with the higher-than-expected tender rates for diaphragm wall and barrette pile construction, has caused an additional cost of \$975.3 million for the tunnel construction, which represents about 17% increase from the original estimate (\$5,643.2 million) on this front.

## (II) Increase in Provision for Price Adjustment

7. According to existing Government practice, monthly payments to contractors for most construction contracts are adjusted to cover market fluctuation in labour and material costs, which are known as Contract Price Fluctuation (CPF) payment. The price adjustment is assessed based on the Government's latest assumptions on the trend rate of change in the prices of public sector building and construction output together with the cash flow of the project so as to arrive at the MOD prices of a project.

8. When the MOD project estimate of **579TH** was prepared in 2009, the applicable set of price adjustment factors was based on the projection in March 2009 on prices for public sector building and construction output, which was assumed to increase by 2% per annum over the period from 2009 to 2013 and by 3% per annum from 2014 to 2019. However, according to the latest set of Government's assumptions (September 2013), the trend rate of change in the prices of public sector building and construction output for the same period is very different. According to actual statistics, the factors of price adjustment for the year of 2010, 2011 and 2012 are 2.9%, 5.9% and 6.3% respectively. As for the increase in prices for 2013 and future years, it is now assessed to be 6% per annum over the period from 2013 to 2017; and 5% per annum over the period from 2018 to 2023. The actual and forecast price adjustment factors are much higher than the assumptions in March 2009.

9. Based on the latest estimated cash flow, the provision for price adjustment will increase by \$6,959.0 million (i.e. from \$3,532.4 million to \$10,491.4 million). Detailed assessment of the latest provision for price adjustment is at **Enclosure 3**.

## Review of Contingencies

10. Apart from the increases mentioned in Paragraphs 6 to 9 above, there are also minor changes in cost estimate in other works items when compared with the APE. The works items with increase in estimate include the

tunnel E&M works, the building and ventilation structures, etc. On the other hand, the estimates for noise mitigation facilities and traffic control and surveillance system are less than those in the APE. These result in a net increase in cost of \$725.3 million as detailed below:

- (a) the revised estimate for the marine works and tunnel structures under the tunnel construction works increases from \$7,388.6 million to \$7,433.3 million. The \$44.7 million increase is due to the slight differences between the prices in the awarded tenders and the sums allowed in the APE for these items;
- (b) the revised estimate for the earthworks under the tunnel construction works increases from \$2,230.7 million to \$2,296.0 million. The \$65.3 million increase is due to the more extensive temporary support works required during excavation for the construction of the tunnel structures;
- (c) the revised estimate for the tunnel E&M works and building and ventilation structures increases from \$2,180.2 million by \$700 million to \$2,880.2 million. The variation is due to the additional installation in the air purification system (APS) to remove nitrogen dioxide from the tunnel exhaust in response to public demand for better quality of exhaust air from tunnels; and
- (d) the revised estimate for the roads and drains, elevated structures and foundations, retaining walls and slope works, noise mitigation facilities, re-provisioning of affected facilities, landscaping works, and TCSS is reduced from \$3,339.8 million by \$84.7 million to \$3,255.1 million. The variation is due to the slight differences between the prices in the awarded tenders and the sums allowed in the APE for pricing these items.

A detailed comparison of the cost breakdown of the original APE and the revised project estimate in MOD prices is at **Enclosure 4**.

11. We have reviewed and considered there is scope to reduce the contingencies under the original APE by \$725.3 million to cover the increase in cost mentioned in paragraph 10 above.

12. For the remaining \$1,434.4 million of project contingency, as there remains considerable amount of marine works and underground works of high risk nature to be actively carried out till the commissioning in 2017, we need to retain such amount to cover any possible additional expenditures arising from works variations to suit actual site conditions (and the subsequent increase in cost) or claims for additional payments from the contractors. We would expose ourselves to unacceptable budget risk if we reduce the contingency level further. Therefore, we do not recommend using those project contingency to cope with the adjustment in cost mentioned in paragraphs 6 to 10 above.

13. Overall, a breakdown of the proposed increase of \$7,934.3 million is as follows:

<b>Factors</b>	<b>Proposed increased amount (\$million)</b>	<b>% of the increased amount</b>
<b>Increase due to -</b>		
(a) Increase in cost for the tunnel construction works – diaphragm walls and foundations	975.3	11.2
(b) Increase in provision for price adjustment	6,959.0	80.4
(c) Increase in cost for other works items	725.3	8.4
(d) Total increase (d)=(a)+(b)+(c)	8,659.6	100.0
<b>Partly Offset by -</b>		
(e) Drawdown from Contingencies	(725.3)	100.0
(f) Proposed Increase (f)=(d)-(e)	7,934.3	

## FINANCIAL IMPLICATIONS

14. Subject to approval, we will revise the phased expenditure as follows –

Year	\$ million (in MOD prices)
Up to 31 March 2013	7,135.6
2013-2014	3,547.9
2014-2015	4,189.0
2015-2016	5,100.4
2016-2017	5,224.6
2017-2018	4,553.6
2018-2019	3,647.4
2019-2020	1,603.4
2020-2021	1,037.0
	<hr/>
	36,038.9
	<hr/>

15. The proposed increase in the APE will not give rise to any additional recurrent expenditure.

## PUBLIC CONSULTATION

16. During the course of construction, Highways Department has maintained close contact with the Central and Western District Council, Wan Chai District Council, Eastern District Council and Islands District Council as well as the local communities to report the works progress, the associated temporary traffic arrangements and the temporary vessel relocation arrangements in CBTS from time to time. In addition, to enhance communication with the public, two community liaison centres have been set up in Central and North Point respectively to receive visitors and local residents who are interested in the project and to answer their enquiries in relation to the project. We also issue

newsletters on a regular basis to update the members of District Councils, local residents and stakeholders on the works progress. Also, we have set up a project website and hotline for the public to offer comments and suggestions.

### **WAY FORWARD**

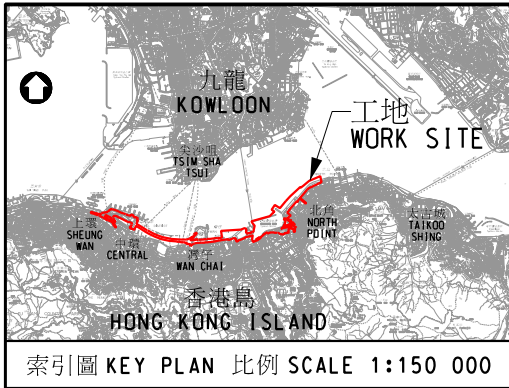
17. Subject to the support of the Panel, we intend to submit the proposal to the Public Works Subcommittee in December 2013. If the proposal is supported by the Subcommittee, we would submit our funding application to the FC in January 2014.

### **ADVICE SOUGHT**

18. Members are invited to comment on and support our funding proposal.













**Transport and Housing Bureau**  
**November 2013**

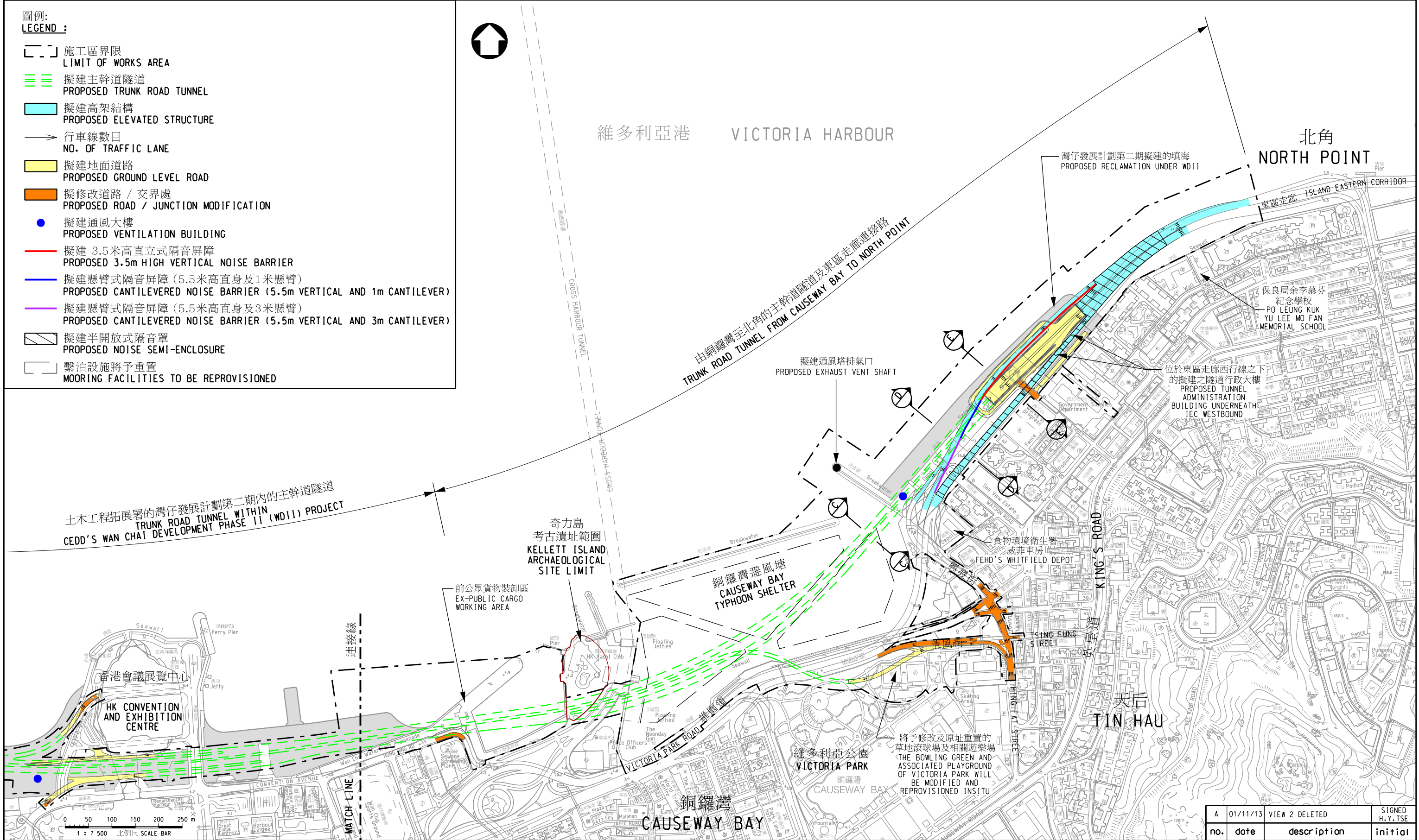




圖則名稱 plan title		設計 designed		繪圖 drawn		圖則編號 plan no.		比例 scale	
工務計劃項目第 579TH號 - 中環及灣仔繞道和東區走廊連接路 - 平面圖		S.C.POON 18/05/09 SIGNED		W.L.LAM 18/05/09 SIGNED		HMW6579TH-SP0004-A		1:7500	
PWP ITEM NO. 579TH - CENTRAL-WAN CHAI BYPASS AND ISLAND EASTERN CORRIDOR LINK - LAYOUT PLAN		覆核 checked		批准 approved		© 版權所有 COPYRIGHT RESERVED			
		S.M.WONG 18/05/09 SIGNED		S.MO 18/05/09 SIGNED		HIGHWAYS DEPARTMENT HONG KONG 路政署			
		主要工程管理處 MAJOR WORKS PROJECT MANAGEMENT OFFICE							

**圖例:**  
**LEGEND :**

-  施工區界限  
LIMIT OF WORKS AREA
-  擬建主幹道隧道  
PROPOSED TRUNK ROAD TUNNEL
-  擬建高架結構  
PROPOSED ELEVATED STRUCTURE
-  行車線數目  
NO. OF TRAFFIC LANE
-  擬建地面道路  
PROPOSED GROUND LEVEL ROAD
-  擬修改道路 / 交界處  
PROPOSED ROAD / JUNCTION MODIFICATION
-  擬建通風大樓  
PROPOSED VENTILATION BUILDING
-  擬建 3.5米高直立式隔音屏障  
PROPOSED 3.5m HIGH VERTICAL NOISE BARRIER
-  擬建懸臂式隔音屏障 (5.5米高直身及1米懸臂)  
PROPOSED CANTILEVERED NOISE BARRIER (5.5m VERTICAL AND 1m CANTILEVER)
-  擬建懸臂式隔音屏障 (5.5米高直身及3米懸臂)  
PROPOSED CANTILEVERED NOISE BARRIER (5.5m VERTICAL AND 3m CANTILEVER)
-  擬建半開放式隔音罩  
PROPOSED NOISE SEMI-ENCLOSURE
-  繫泊設施將予重置  
MOORING FACILITIES TO BE REPROVISIONED



圖則名稱 plan title  
 工務計劃項目第 579TH 號 - 中環及灣仔繞道和東區走廊連接路  
 - 平面圖  
 PWP ITEM NO. 579TH - CENTRAL-WAN CHAI BYPASS AND ISLAND EASTERN CORRIDOR LINK  
 - LAYOUT PLAN

設計 designed	SIGNED	繪圖 drawn	SIGNED
S.C.POON	18/05/09	W.L.LAM	18/05/09
覆核 checked	SIGNED	批准 approved	SIGNED
S.M.WONG	18/05/09	S.MO	18/05/09
主要工程管理處 MAJOR WORKS PROJECT MANAGEMENT OFFICE			

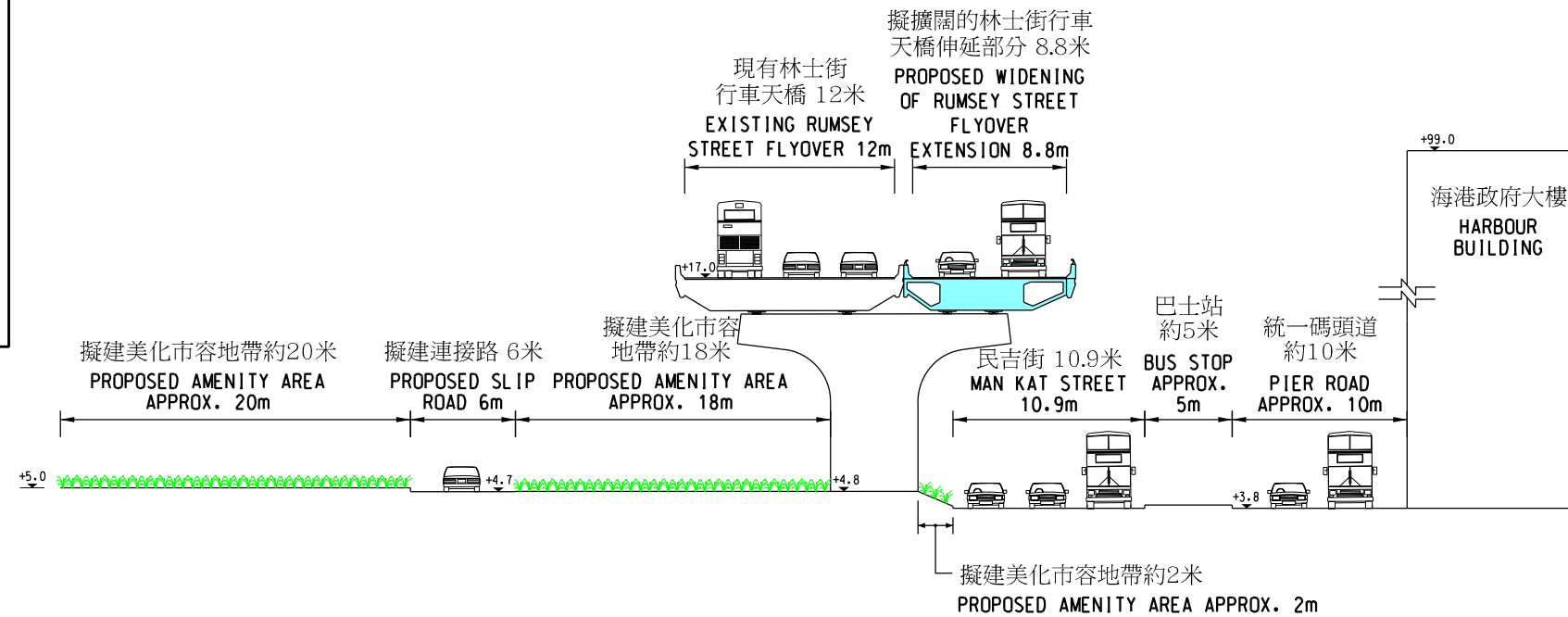
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註釋 NOTES:

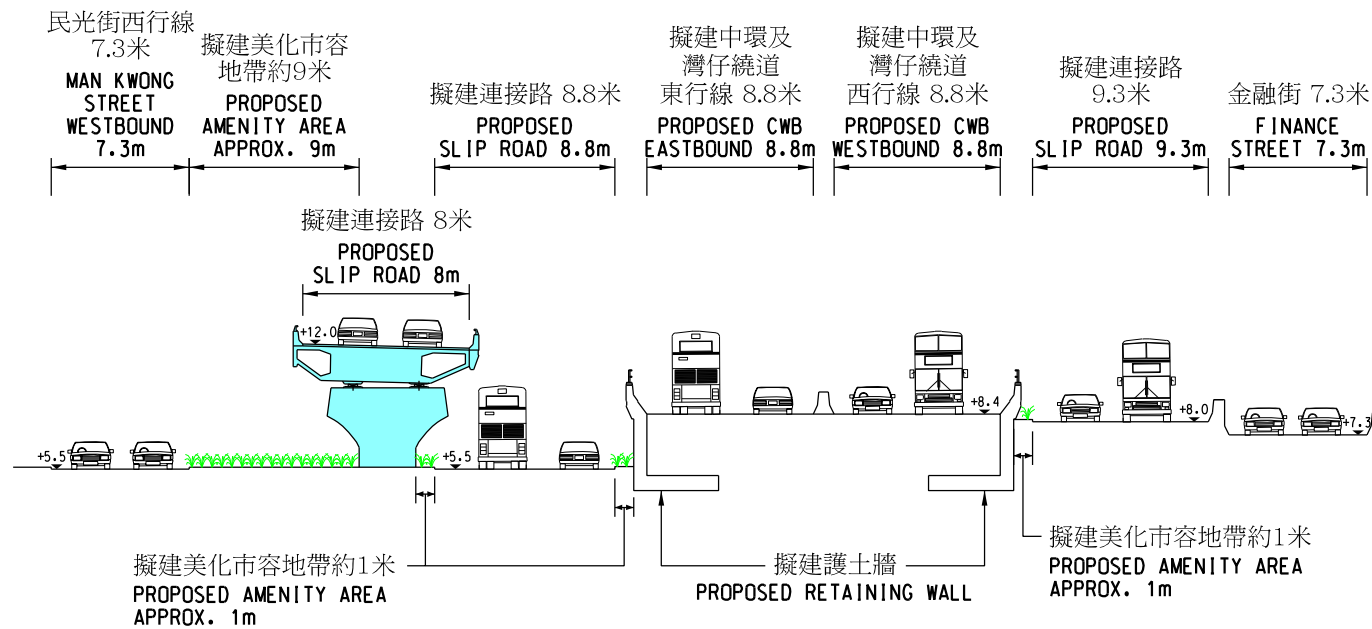
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 ALL LEVELS ARE IN METRES ABOVE HONG KONG PRINCIPAL DATUM
- CWB 表示中環及灣仔繞道  
 CWB STANDS FOR CENTRAL-WAN CHAI BYPASS
- IEC 表示東區走廊  
 IEC STANDS FOR ISLAND EASTERN CORRIDOR
- 所有切面圖只作闡述一般設計佈局之用，設計或會因實際情況而作出修改  
 ALL CROSS SECTIONS ARE FOR GENERAL ILLUSTRATION OF DESIGN LAYOUT ONLY AND MAY BE SUBJECT TO CHANGE TO SUIT SITE CONDITIONS

圖例  
 LEGEND:

 擬建美化市容地帶  
 PROPOSED AMENITY AREA



切面 SECTION A-A



切面 SECTION B-B

A	01/11/13	NOTES REVISED	SIGNED H.Y. TSE
no.	date	description	initial

圖則名稱 plan title

工務計劃項目第 579TH 號 - 中環及灣仔繞道和東區走廊連接路  
 - 切面圖

PWP ITEM NO. 579TH - CENTRAL-WAN CHAI BYPASS AND ISLAND EASTERN CORRIDOR LINK  
 - CROSS SECTION

設計 designed	SIGNED	繪圖 drawn	SIGNED
S.C. POON	18/05/09	W.L. LAM	18/05/09
覆核 checked	SIGNED	批准 approved	SIGNED
S.M. WONG	18/05/09	S. MO	18/05/09

圖則編號 plan no.	比例 scale
HMW6579TH-SP0006-A	1:400

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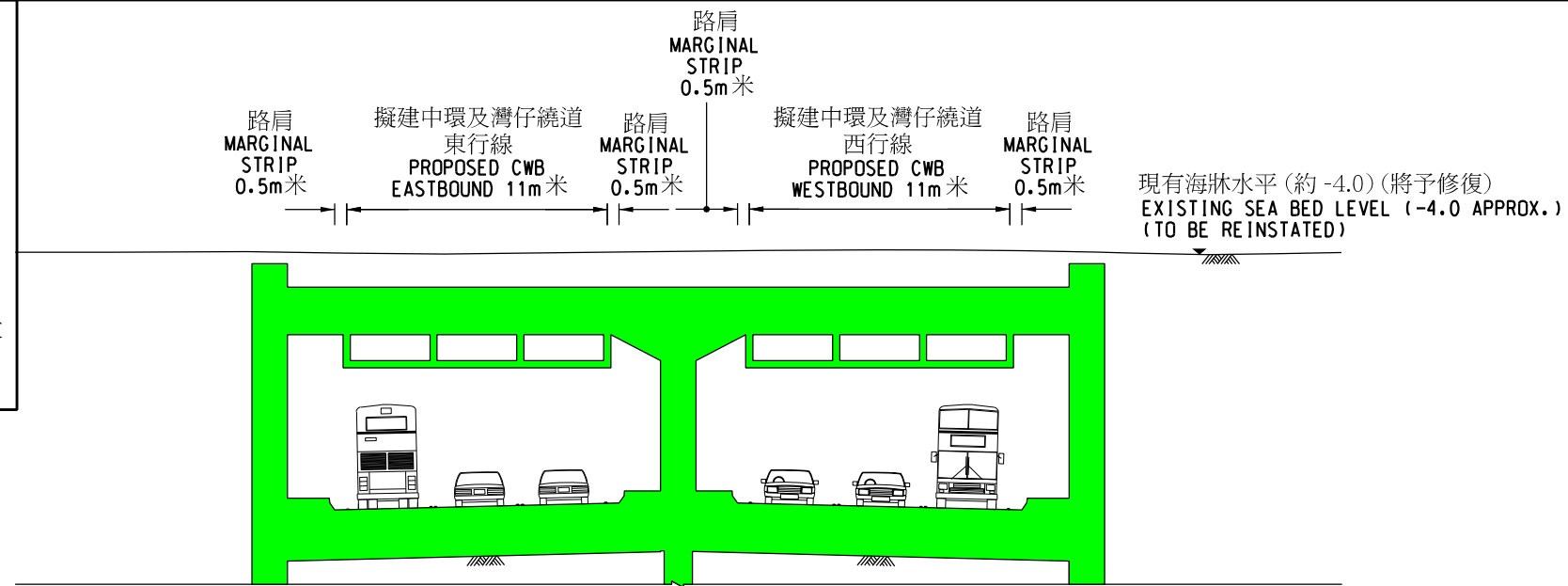


HIGHWAYS DEPARTMENT HONG KONG 路政署

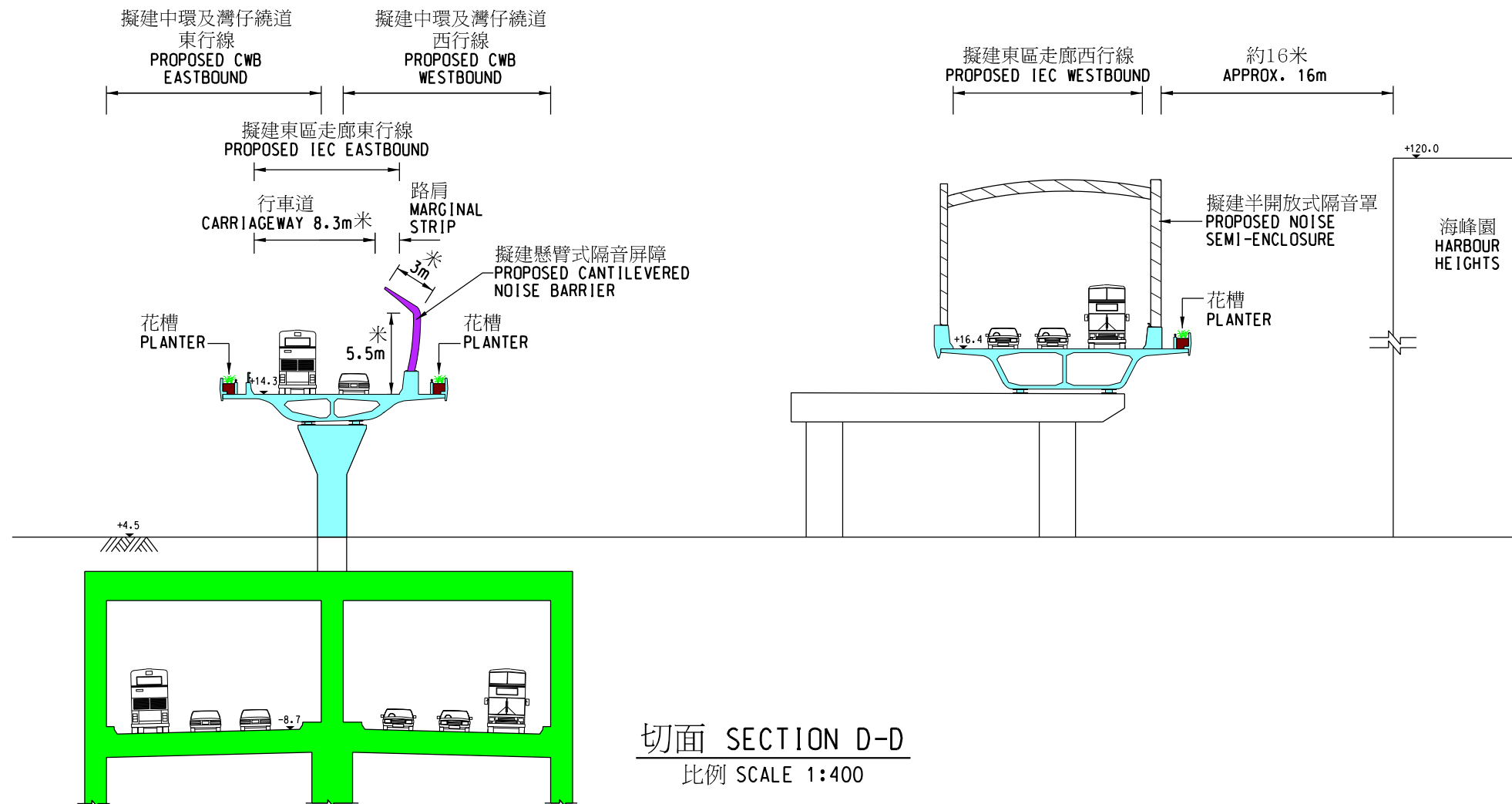
主要工程管理處  
 MAJOR WORKS PROJECT MANAGEMENT OFFICE

註釋 NOTES:

1. 所有水平均以米為單位並在香港主水平基準上  
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切面 SECTION C-C  
 比例 SCALE 1:300




切面 SECTION D-D  
 比例 SCALE 1:400

圖則名稱 plan title

工務計劃項目第 579TH 號 - 中環及灣仔繞道和東區走廊連接路  
 - 切面圖

PWP ITEM NO. 579TH - CENTRAL-WAN CHAI BYPASS AND ISLAND EASTERN CORRIDOR LINK  
 - CROSS SECTION

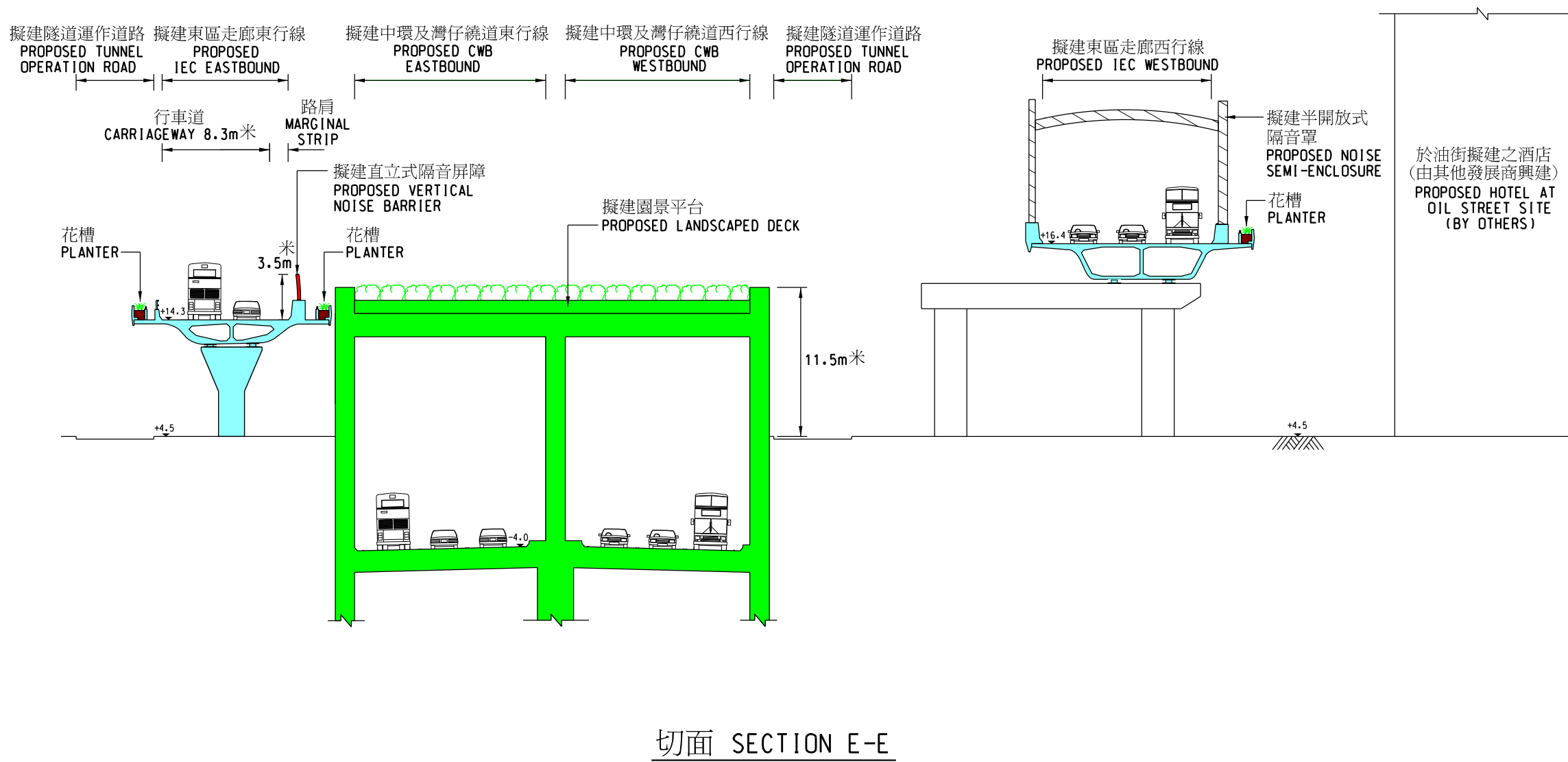
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主要工程管理處 MAJOR WORKS PROJECT MANAGEMENT OFFICE					

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圖例  
LEGEND:

 擬建園景平台  
PROPOSED LANDSCAPED DECK



切面 SECTION E-E

圖則名稱 plan title

工務計劃項目第 579TH 號 - 中環及灣仔繞道和東區走廊連接路  
- 切面圖  
PWP ITEM NO. 579TH - CENTRAL-WAN CHAI BYPASS AND ISLAND EASTERN CORRIDOR LINK  
- CROSS SECTION

設計 designed	SIGNED	繪圖 drawn	SIGNED
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覆核 checked	SIGNED	批准 approved	SIGNED
S.M.WONG	18/05/09	S.MO	18/05/09
主要工程管理處 MAJOR WORKS PROJECT MANAGEMENT OFFICE			

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**List of works contracts implemented under 6579TH**

<b>Contract No.</b>	<b>Title</b>	<b>Contract Award Date</b>	<b>Status</b>
<b>Under Highways Department</b>			
HY/2009/11	Central-Wan Chai Bypass – North Point Reclamation	December 2009	Completed
HY/2009/16	Central-Wan Chai Bypass – Provision and Laying of Private Moorings	December 2009	Completed
HY/2009/17	Central-Wan Chai Bypass – FEHD Whitfield Depot Reprovisioning Works	February 2010	Completed
HY/2009/15	Central-Wan Chai Bypass – Tunnel (Causeway Bay Typhoon Shelter Section)	September 2010	In progress
HY/2009/18	Central-Wan Chai Bypass – Central Interchange	September 2010	In progress
HY/2009/19	Central-Wan Chai Bypass – Tunnel (North Point Section) and Island Eastern Corridor Link	January 2011	In progress
HY/2010/08	Central-Wan Chai Bypass – Tunnel (Slip Road 8 Section)	March 2013	In progress
HY/2011/08	Central-Wan Chai Bypass – Tunnel buildings, systems and fittings, and works associated with tunnel commissioning	February 2014	To be awarded
<b>Under Civil Engineering and Development Department through entrustment</b>			
HK12/02	Central Reclamation Phase III – Engineering Works	February 2003	Completed
HK/2009/01	Wan Chai Development Phase II –Central-Wan Chai Bypass at Hong Kong Convention and Exhibition Centre	December 2009	In progress
HK/2009/02	Wan Chai Development Phase II –Central-Wan Chai Bypass at Wan Chai East	January 2010	In progress
HK/2010/06	Wan Chai Development Phase II –Central-Wan Chai Bypass over MTR Tsuen Wan Line	January 2011	In progress
HK/2012/08	Wan Chai Development Phase II –Central-Wan Chai Bypass at Wan Chai West	January 2013	In progress

## Enclosure 3 to LC Paper No. CB(1)268/13-14(03)

### 579TH – Central-Wan Chai Bypass and Island Eastern Corridor Link

**Table 1 – Cash flow and provision for price adjustment in PWSC(2009-10)52**

Year	Original project estimate (\$ million, in September 2008 prices)  X	Original price adjustment factors (March 2009)#  Y	Approved project estimate (\$ million, in MOD prices)  Z	Provision for price adjustment (\$million)  A = Z - X
2009 - 2010	232.8	1.03500	240.9	8.1
2010 - 2011	1,553.6	1.05570	1,640.1	86.5
2011 - 2012	3,209.8	1.07681	3,456.3	246.5
2012 - 2013	3,888.3	1.09835	4,270.7	382.4
2013 - 2014	4,314.0	1.12032	4,833.1	519.1
2014 - 2015	3,296.3	1.15113	3,794.5	498.2
2015 - 2016	3,357.9	1.18566	3,981.3	623.4
2016 - 2017	2,302.4	1.22123	2,811.8	509.4
2017 - 2018	1,478.5	1.25787	1,859.8	381.3
2018 - 2019	938.6	1.29560	1,216.1	277.5
<b>Total</b>	<b>24,572.2</b>		<b>28,104.6</b>	<b>3,532.4</b>

**Note:**

# Price adjustment factors adopted in March 2009 were based on the projected movement of prices for public sector building and construction output at that time, which were assumed to increase by 2.0% per annum over the period from 2009 to 2013 and by 3.0% per annum from 2014 to 2019

## Enclosure 3 to LC Paper No. CB(1)268/13-14(03)

### 579TH – Central-Wan Chai Bypass and Island Eastern Corridor Link

**Table 2 – Revised cash flow and provision for price adjustment due to revised project estimate (PE) and latest adjustment factors**

Year	Latest PE (\$ million, in September 2008 prices)	Latest PE (\$ million, in September 2013 prices) <sup>^^</sup>	Latest price adjustment factors (October 2013) <sup>##</sup>	Latest PE (\$ million, in MOD prices)	Latest provision for price adjustment (\$ million)	Net increase in provision for price adjustment (\$ million)
a	b	c	d	e	f	
Up to March 2013	6,216.2 <sup>^</sup>	7,135.6 <sup>^</sup>	1.00000	7,135.6 <sup>^</sup>	<b>e = d - a</b>	<b>f = e - a</b>
2013 - 2014	2,784.1	3,547.9	1.00000	3,547.9		
2014 - 2015	3,101.1	3,951.9	1.06000	4,189.0		
2015 - 2016	3,562.1	4,539.3	1.12360	5,100.4		
2016 - 2017	3,442.2	4,386.7	1.19102	5,224.6		
2017 - 2017	2,830.4	3,606.9	1.26248	4,553.6		
2018 - 2017	2,154.0	2,745.0	1.32876	3,647.4		
2019 - 2017	901.8	1,149.2	1.39519	1,603.4		
2020 - 2021	555.5	707.9	1.46495	1,037.0		
<b>Total</b>	<b>25,547.5</b>	<b>31,770.4</b>		<b>36,038.9</b>		

#### Notes

<sup>##</sup> Price adjustment factors promulgated in September 2013 were based on the latest movement of prices for public sector building and construction output, which are assumed to increase by 6.0% per annum over the period from 2013 to 2017 and by 5.0% per annum from 2018 to 2023.

<sup>^</sup> \$6,216.2 million was the actual expenditure excluding price adjustment up to March 2013; whereas \$7,135.6 million was the actual expenditure including price adjustment.

<sup>^^</sup> The revised project estimate (in September 2008 prices) was multiplied by 1.27435 for conversion to September 2013 prices. The figure of 1.27435 represents the changes in price movement for public sector building and construction output between September 2008 and September 2013.



## Enclosure 4 to LC Paper No. CB(1)268/13-14(03)

### 579TH – Central-Wan Chai Bypass and Island Eastern Corridor Link

#### Comparison between Approved Project Estimate and the Revised Project Estimate

	(A) Approved Project Estimate (\$ million)	(B) Revised Project Estimate (\$ million)	(B) – (A) Difference (\$ million)
(a) Tunnel construction works	15,262.5	16,347.8	1,085.3
(i) Marine works	983.6	999.5	15.9
(ii) Diaphragm walls and foundations	5,643.2	6,618.5	975.3
(iii) Earthworks	2,230.7	2,296.0	65.3
(iv) Tunnel structures	6,405.0	6,433.8	28.8
(b) Tunnel E&M works	1,543.3	1,933.2	389.9
(i) Tunnel ventilation works	527.0	542.8	15.8
(ii) E&M works	1,016.3	1,390.4	374.1
(c) Roads and drains	109.5	120.4	10.9
(d) Elevated structures and foundations	1,174.5	1,197.0	22.5
(e) Retaining walls and slope works	431.9	450.4	18.5
(f) Building and ventilation structures	636.9	947.0	310.1
(g) Noise mitigation facilities	1,102.6	955.5	(147.1)
(i) Vertical noise barriers	44.6	51.8	7.2
(ii) Cantilevered noise barriers	61.5	74.1	12.6
(iii) Noise semi-enclosures	996.5	829.6	(166.9)
(h) Re-provisioning of affected facilities	234.4	254.0	19.6
(i) Landscaping works	74.4	75.5	1.1
(j) TCSS	212.5	202.3	(10.2)
(k) Tunnel vehicles	54.1	54.1	0.0
(l) Consultants' fees	222.8	222.8	0.0
(i) Contract administration	73.9	73.9	0.0
(ii) Management of resident site staff (RSS)	96.7	96.7	0.0
(iii) EM&A programme	23.2	23.2	0.0
(iv) Electrical and Mechanical Services Trading Fund (EMSTF)	29.0	29.0	0.0
(m) Remuneration of RSS	1,353.1	1,353.1	0.0
(n) Contingencies	2,159.7	1,434.4	(725.3)
(o) Provision for price adjustment	3,532.4	10,491.4	6,959.0
<b>Total</b>	<b>28,104.6</b>	<b>36,038.9</b>	<b>7,934.3</b>

## Enclosure 4 to LC Paper No. CB(1)268/13-14(03)

As regards **item (a)(i) (tunnel construction works – marine works)** and **item (a)(iv) (tunnel construction works – tunnel structures)**, the variations reflect the difference between the awarded tenders and the Approved Project Estimate (APE) in pricing these items. In comparison with the APE, the awarded tender prices for items (a)(i) and (a)(iv) are \$44.7 million higher than that estimated in the APE.

2. As regards **item (a)(ii) (tunnel construction works – diaphragm walls and foundations)**, an increase of \$975.3 million is due to the unexpected deeper bedrock levels for founding the diaphragm walls and barrette piles for the tunnel structure and the higher-than-expected-tender rates for the diaphragm wall and barrette pile construction, as explained in paragraph 6 of the main paper.

3. As regards **item (a) (iii) (tunnel construction works – earthworks)**, an increase of \$65.3 million is due to the more extensive temporary support required during excavation for the construction of the tunnel structures.

4. As regards **item (b) (tunnel E&M works)** and **item (f) (building and ventilation structures)**, the total increase of \$700.0 million is due to the additional installation in the air purification system (APS) to remove nitrogen dioxide from the tunnel exhaust in response to public demand for better quality of exhaust air from tunnels in the project.

5. As regards **item (c) (roads and drains)**, **item (d) (elevated structures and foundations)**, **item (e) (retaining walls and slope works)**, **item (g) (noise mitigation facilities)**, **item (h) (re-provisioning of affected facilities)**, **item (i) (landscaping works)**, and **item (j) (TCSS)**, the variations reflect the difference between the awarded tenders and the APE in pricing these items. In comparison with the APE, the awarded tender prices for items (c), (d), (e), (g), (h), (i) and (j) are \$84.7 million lower than that estimated in the APE.

6. As regards **item (n) (contingencies)**, we have drawn \$725.3 million from the contingencies allowed in the APE to cover all the additional costs arising from the works items as explained in the above paragraphs, except the additional cost of \$975.3 million for the diaphragm wall and foundations for the tunnel construction works (i.e. item (a)(ii) above). The remaining sum of \$1,434.4 million has to be retained as contingencies for meeting unexpected expenditures required for completing the remaining works.

7. As regards **item (o) (provision for price adjustment)**, an increase of \$6,959.0 million is due to unexpected increase in actual and projected payments for contract price fluctuation. Details are given in paragraphs 7 to 9 of the main paper and Enclosure 3.