

## **ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE**

### **HEAD 711 - HOUSING**

#### **Transport - Roads**

#### **642TH - Improvements to Island Eastern Corridor section between North Point Interchange and Sai Wan Ho**

Members are invited to recommend to Finance Committee the upgrading of **642TH**, entitled “Improvements to Island Eastern Corridor section between North Point Interchange and Sai Wan Ho”, to Category A at an estimated cost of \$946.1 million in money-of-the-day prices.

### **PROBLEM**

The section of Island Eastern Corridor (IEC) between North Point Interchange and Sai Wan Ho will not be able to cope with future growth in traffic demand due to housing developments in the eastern districts on Hong Kong Island. Also, inadequate traffic capacity for the section of IEC near the Eastern Harbour Crossing (EHC) has led to traffic congestion causing severe weaving, merging and traffic safety problems.

### **PROPOSAL**

2. The Director of Highways, with the support of the Secretary for Housing and Secretary for Transport, proposes to upgrade **642TH** to Category A at an estimated cost of \$946.1 million, in money-of-the-day (MOD) prices, for the proposed improvement works to the section of IEC between North Point Interchange and Sai Wan Ho.

/ **PROJECT** .....

**PROJECT SCOPE AND NATURE**

3. The scope of works for **642TH** includes -
- (a) providing a new 800-metre elevated eastbound carriageway (two lanes) along IEC from Man Hong Street to the Eastern Harbour Crossing (EHC) towards Shau Kei Wan including realignment of the existing carriageway to suit the new carriageway;
  - (b) providing a new 1.4-kilometre westbound carriageway (single lane) along IEC from Tai Cheong Street to the west of the EHC including a 380-metre elevated carriageway, a 45-metre underpass, 3 slip roads, various sections of carriageway at grade, and realignment of the existing carriageway to suit the new carriageway;
  - (c) reprovisioning the North Point Fire Services Department (FSD) pier to enable construction of the new eastbound carriageway;
  - (d) reprovisioning recreational facilities along the affected section of westbound carriageway on IEC including development of recreational facilities at Aldrich Bay reclamation promenade to compensate for the land alienation at Quarry Bay Park;
  - (e) implementing the environmental mitigation measures recommended in the EIA including the installation of 1.1 kilometres of noise barriers and a 130-metre semi-enclosure along the boundary of the Quarry Bay Park, and air-conditioning with window insulation to 9 dwellings of the Fire Services Department staff quarters at Java Road; and
  - (f) ancillary works including structure, drainage, landscaping, traffic aids, lighting and other street furniture.

— A site plan is at Enclosure 1.

**/ JUSTIFICATION .....**

**JUSTIFICATION**

4. The Commissioner for Transport completed a Traffic Impact Assessment (TIA) in 1997 which concluded that the traffic flows on the IEC will increase significantly in the next decade upon completion of the Central - Wan Chai Bypass and Island Eastern Corridor Link<sup>1</sup> and the new housing developments<sup>2</sup> in Shau Kei Wan and Chai Wan. To cater for the anticipated additional traffic demand on the IEC, the TIA recommended the proposed improvements under **642TH** to expand the traffic capacity of the section of IEC between North Point Interchange and Sai Wan Ho. The projected volume to capacity (V/C) ratios<sup>3</sup> in 2001, 2003, 2006 and 2011 at critical sections of IEC under the scenarios with and without improvements are as follows -

	Without improvements		With improvements	
	AM peak (westbound)	PM peak (eastbound)	AM peak (westbound)	PM peak (eastbound)
Year 2001	1.04	0.88	—	—
Year 2003	1.13	0.92	0.68	0.66
Year 2006	1.39	1.26	0.84	0.76
Year 2011	1.54	1.46	0.92	0.88

/ 5. ....

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1 The project **579TH** – ‘Central-Wan Chai Bypass and Island Eastern Corridor Link’ is in Category B of the Public Works Programme. In July 1995, we engaged consultants to undertake the investigation and detailed design of the project at an estimated cost of \$200 million in August 1994 prices under **557TH** – ‘Central-Wan Chai Bypass and Island Eastern Corridor Link – consultants’ fees and investigations’. We plan to commence construction in 2002 for completion in 2010.

2 The planned housing developments in Aldrich Bay reclamation at Shau Kei Wan and Chai Wan will be completed between 2000 and 2007 with estimated population intakes of 31 880 and 8 300 respectively

3 The capacity here refers to the design capacity of the road. A V/C ratio equal to or less than 1.0 means that the road has sufficient capacity to cope with the volume of vehicular traffic under consideration. A V/C ratio above 1.0 indicates the onset of mild congestion and a ratio above 1.2 indicates more serious congestion with traffic speeds progressively deteriorating with further increases in traffic.

5. At present, it would take a motorist approximately 3 to 4 minutes to complete this section of road. However, without the improvements, it is predicted that mild congestion would start to develop from 2001. By 2006, severe congestion would be expected with traffic speeds progressively deteriorating. Long queues would build up in both eastbound and westbound directions, leading to substantial travel delay. It might take a motorist more than 15 minutes to complete this section of road.

6. Furthermore, the section of IEC near the EHC entrance has heavy weaving and merging activities, leading to safety concerns. We anticipate that the additional traffic lanes provided under this project would significantly reduce the weaving and merging problems, and improve safety on this road section.

7. In order to carry out the road construction works and the environmental mitigation measures along the westbound carriageway, we require permanent alienation of 7 198 square metres of land at the existing Quarry Bay Park. As the Quarry Bay Park is surrounded by the well-developed residential area of Taikoo Shing, we cannot find any spare land within the same location to re-provision the alienated park area. We will re-provision recreational facilities along the existing promenade at the nearby Aldrich Bay reclamation.

## FINANCIAL IMPLICATIONS

8. We estimate the capital cost of this project to be \$946.1 million in MOD prices (see paragraph 9 below), made up as follows -

	<b>\$million</b>
(a) Roads and drains	485.5
(b) Noise barriers, semi-enclosure and other environmental mitigation measures	72.8
(c) Re-provisioning of FSD pier and other affected facilities	34.6

/ (d) .....

(d) Reprovisioning of recreational facilities at Aldrich Bay reclamation promenade	40.6	
(e) Landscaping works	6.4	
(f) Consultants' fees for	90.0	
(i) construction stage	19.7	
(ii) site staff costs	70.3	
(g) Contingencies	65.0	
	Sub-total	794.9 (at December 1998 prices)
(h) Inflation allowance	151.2	
	Total	946.1 (in MOD prices)

— A breakdown of the estimates for consultants' fees and site staff costs (at December 1998 prices) is provided at Enclosure 2.

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

Year	\$ million (Dec 1998)	Price adjustment factor	\$ million (MOD)
2000 – 2001	43.4	1.05814	45.9
2001 – 2002	165.5	1.11104	183.9
2002 – 2003	211.3	1.16660	246.5
2003 – 2004	198.4	1.22493	243.0
2004 – 2005	176.3	1.28617	226.8
	794.9		946.1

10. We have derived the MOD estimate on the basis of the Government's forecast of trend labour and construction prices for the period 2000 to 2005. We will tender the proposed works on a remeasurement contract basis because the quantities for the foundations of the elevated structures, underpass, pier and noise barriers are subject to variation to allow for actual site conditions. We will also make provision for inflation adjustment because the contract period will exceed 21 months.

11. We estimate the additional annually recurrent expenditure to be \$5.5 million.

## **PUBLIC CONSULTATION**

12. We consulted the Eastern Provisional District Board on 12 February 1998. The Board supported the project in principle. The Advisory Council on the Environment considered the Environmental Impact Assessment (EIA) Report on 23 March 1998 and accepted the findings and recommendations. The then Provisional Urban Council considered the required land alienation at Quarry Bay Park on 9 September 1998 and 15 September 1998, and agreed to the required land alienation and the proposed compensatory provision of recreational facilities of about 17 200 square metres at the nearby Aldrich Bay reclamation promenade.

13 We gazetted the proposed works under the Roads (Works, Use and Compensation) Ordinance on 30 September 1998 and received seven objections. Two objectors withdrew their objections after further explanation of the details of the proposed traffic arrangement and environmental mitigation measures. The third objector withdrew his objection subject to minor modifications of the land requirement arrangements and the condition that traffic flow on the slip road from IEC to Taikoo Shing will be maintained at all times during reconstruction of the slip road. The fourth objector was the owner of two adjacent lots at Hoi Yu Street, of which portions would be resumed under the Ordinance. The objector asked for an exchange of land or monetary compensation. We explained to the objector that the proposed resumption was necessary for the realignment of Hoi Yu Street and that, according to the existing land policy while land exchange would not be considered, the objector could submit claims for monetary compensation under the Ordinance. The fifth objector was the owner of a private lot at Java Road, containing an existing pier which would be resumed and demolished. The objector asked for re-provisioning of the pier. We explained to the objector that the proposed resumption and demolition of the pier would be inevitable for the

IEC improvement works and that while the Government has no obligation under the lease to re-provision the pier, the objector could submit claims for monetary compensation under the Ordinance. The sixth and seventh objectors were Taikoo Shing residents. They were concerned about the environmental and traffic impacts and questioned the traffic justifications for the proposed IEC improvement works near Sai Wan Ho. We explained to the objectors that the proposed works were required due to traffic needs. We also explained the recommended environmental mitigation measures and construction stage traffic management measures which would be carried out under the project. Pursuant to the provisions of the Ordinance, we submitted the fourth, fifth, sixth and seventh objections to the Chief Executive in Council for consideration. The Chief Executive in Council subsequently authorized the proposed works on 20 July 1999 with modifications in line with the request made by the third objector.

14. We gazetted the re-provisioning of the FSD pier under the Foreshore and Sea-bed (Reclamations) Ordinance on 30 October 1998. No objection was received and the proposed pier re-provisioning works were authorized by the Chief Executive on 29 January 1999.

## **ENVIRONMENTAL IMPLICATIONS**

15. We completed an EIA study for this project in February 1998 which concluded that the environmental impacts involved could be mitigated to within established criteria by installing noise barriers and a semi-enclosure along the southern perimeter of the improvement works. We will also provide indirect technical remedies in the form of window insulation and air-conditioning to nine dwellings of the Fire Services Department Staff Quarters at Java Road. The Advisory Council on the Environment endorsed the EIA in March 1998 without conditions. For short term impacts 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. For example, we will use quiet construction plant and set up hoarding around the works sites to reduce the noise nuisance during the construction stage. Besides, water sprays will be used to control dust nuisance. We will also use temporary drains to reduce the run-off related impact associated with ground construction activities. The project is a designated project under Schedule 2 of the Environmental Impact Assessment Ordinance. The Director of Environmental protection issued the environmental permit in December 1999.

16. We have considered in the planning and design stages ways of reducing the generation of construction and demolition material (C&DM) as much as possible. About 5 000 cubic metres of C&D waste will be disposed of at landfills and 35 000 cubic metres of public fill will be delivered to public filling facilities. We shall require the contractor to implement measures to minimise the generation of C&DM and to reuse and recycle C&DM. We shall control the disposal of C&DM to the designated public filling facility and landfill through a trip ticket system. We shall record the disposal, reuse and recycling of C&DM for monitoring purposes.

## LAND ACQUISITION

17. We require the permanent alienation of 7 198 square metres of land at Quarry Bay Park and the resumption of about 530 square metres of land involving portions of two private lots at Hoi Yu Street and about 800 square metres of land involving a portion of a private pier at Java Road respectively. We will charge the land resumption costs estimated at \$30.0 million (at December 1998 prices) to **Head 701** – “Land Acquisition” **Subhead 1100CA** – “Compensation and ex-gratia Allowances in respect of projects in the Public Works Programme”, of the Capital Works Reserve Fund.

## BACKGROUND INFORMATION

18. We upgraded **642TH** to Category B of the Public Works Programme in August 1996.

19. We engaged consultants to undertake the investigation and preliminary design of the project at an estimated cost of \$14 million in MOD prices under **Subhead B100HX** – “Minor housing development related works, studies and investigations for items in Category D of the Public Works Programme”. We completed the investigation and preliminary design in September 1998.

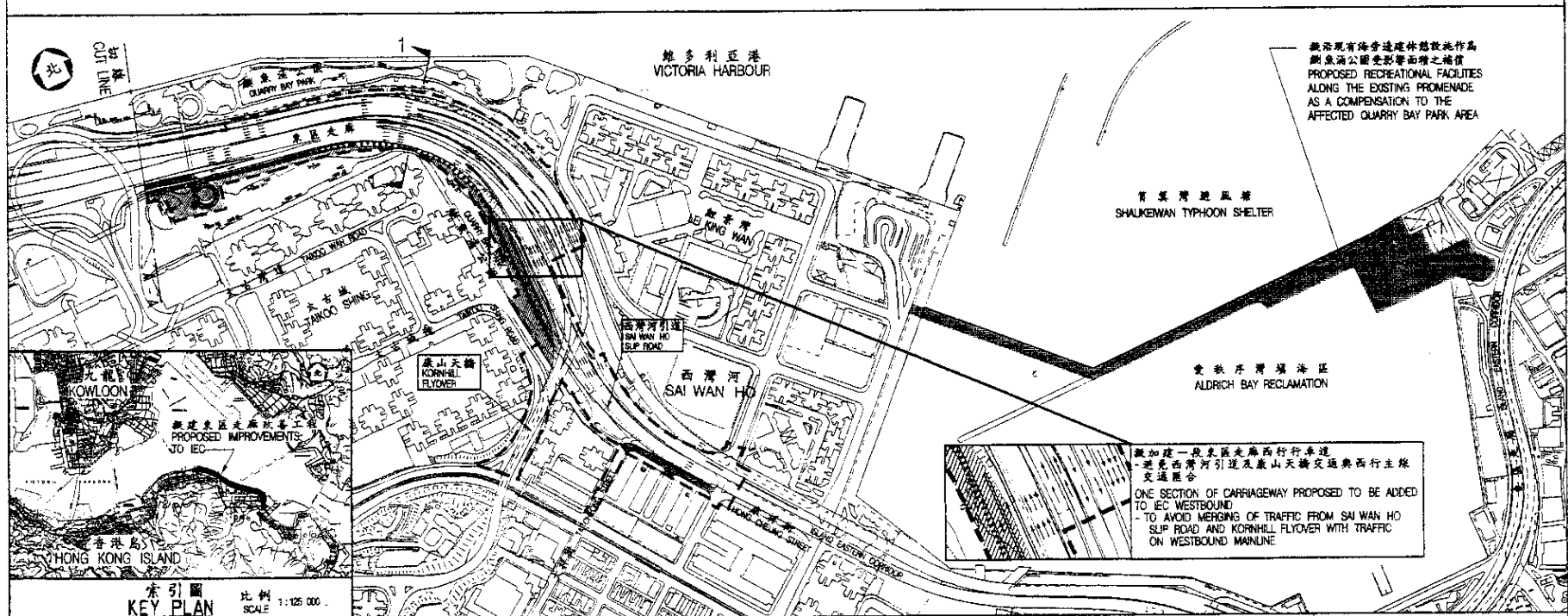
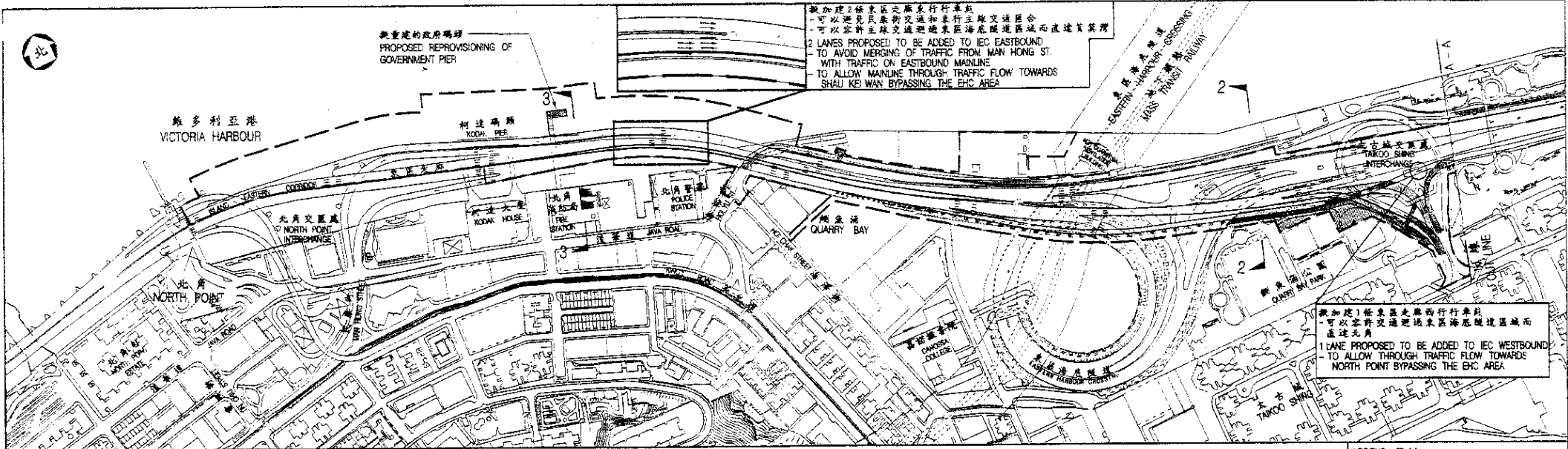
20. We upgraded part of **642TH** to Category A as **650TH** – “Improvements to Island Eastern Corridor section between North Point Interchange and Sai Wan Ho – consultants’ fees and site investigations” in November 1998 at an estimated cost of \$43.1 million in MOD prices and engaged consultants to undertake the detailed design in January 1999.



21. We have substantially completed the detailed design and working drawings for the proposed works. We plan to start the works in June 2000 for completion in December 2003.

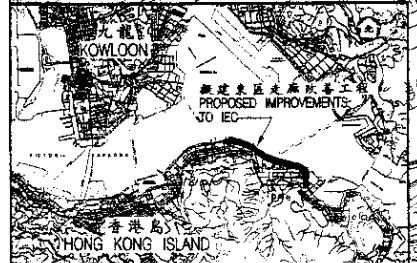
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Housing Bureau  
January 2000



**LEGEND: 圖例**

- 擬建行車道 / 行人道  
PROPOSED CARRIAGEWAY / FOOTWAY
- 擬建架空結構  
PROPOSED ELEVATED STRUCTURE
- 重建行車道  
EXISTING CARRIAGEWAY TO BE RECONSTRUCTED / REALIGNED
- 現有行車道 / 設施將被拆除  
EXISTING CARRIAGEWAY / FACILITIES TO BE DEMOLISHED
- 擬建地下行車道  
PROPOSED UNDERPASS
- 間接改善工程  
INDIRECT TECHNICAL REMEDY
- 擬建五米高倒置L形隔音屏障  
PROPOSED 5m INVERTED-L SHAPED NOISE BARRIER
- 擬建五米高隔音屏障  
PROPOSED 5m PLAIN NOISE BARRIER
- 擬建半封閉式屏障  
PROPOSED SEMI-ENCLOSURE
- 重建補償工程  
REPROVISIONING WORKS
- 地下鐵路預留區界限  
LIMIT OF MTR PROTECTION ZONE
- 施工區界限  
LIMIT OF WORKS AREA
- 東區過海隧道管理控制區  
EIC TUNNEL CONTROL AREA
- 鰗魚涌公園受影響面積給予補償/修復  
AFFECTED AREA OF QUARRY BAY PARK TO BE COMPENSATED / REINSTATED
- 建議的行車方向  
PROPOSED TRAFFIC FLOW
- 現有的行車方向  
EXISTING TRAFFIC FLOW



索引圖 比例 1:125,000  
KEY PLAN SCALE 1:125,000

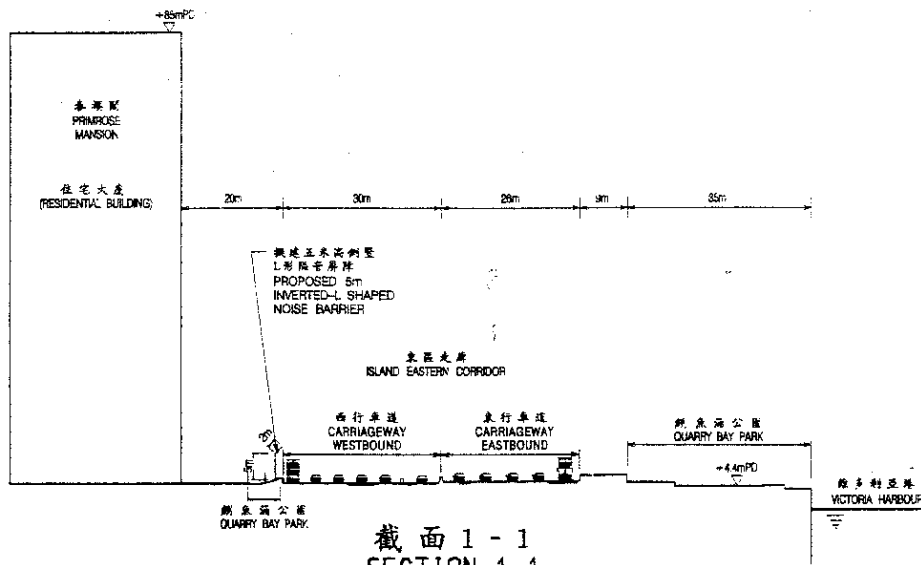
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東區走廊改善工程 - 北角交匯處至西灣河段 - 地盤平面圖  
IMPROVEMENTS TO ISLAND EASTERN CORRIDOR - SECTION BETWEEN NORTH POINT INTERCHANGE AND SAI WAN HO - SITE PLAN

NOTES: 註釋  
1. 此圖須與圖則 PMHB642/1SK/014 一同參閱。  
THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH DRAWING NO. PMHB642/1SK/014.

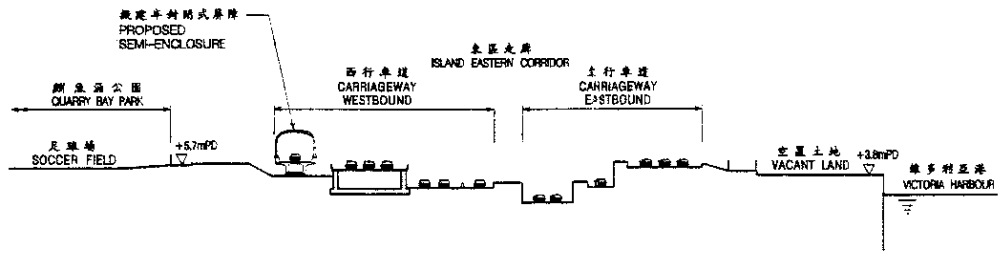
drawing no. 圖號  
PMHB642 /1SK /013

scale 比例  
1:5,000  
或如圖示  
OR AS SHOWN

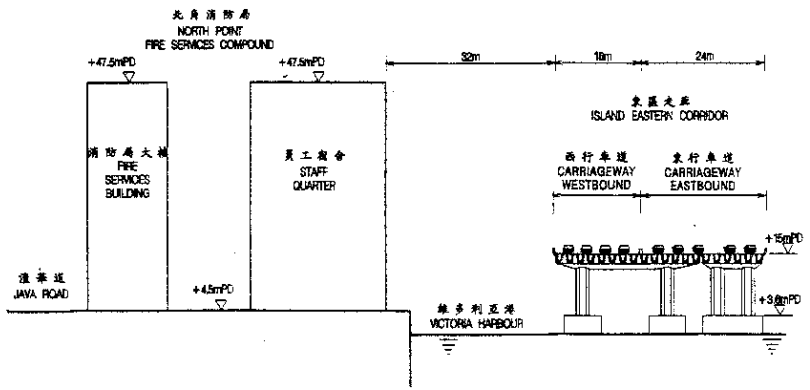
HONG KONG HIGHWAYS DEPARTMENT  
香港路政署



截面 1 - 1  
SECTION 1-1



截面 2 - 2  
SECTION 2-2



截面 3 - 3  
SECTION 3-3

NOTES: 註釋  
 1. 此圖須與圖則PMHB642/1SK/013  
 一同參閱。  
 THIS DRAWING SHOULD BE READ IN  
 CONJUNCTION WITH DRAWING NO.  
 PMHB642/1SK/013.

- LEGEND: 圖例
- 擬建行車道/行人道  
PROPOSED CARRIAGEWAY/FOOTWAY
  - 擬建架空結構  
PROPOSED ELEVATED STRUCTURE
  - 擬建五米高側壁L形隔音屏障  
PROPOSED 5m INVERTED-L SHAPED  
NOISE BARRIER
  - 擬建半封閉式屏障  
PROPOSED SEMI-ENCLOSURE

no.	date	description
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REVISION

drawn	S.K.TSE	11/99
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checked

approved

contract no.  
合約編號

file no.  
繪圖編號

project no. PWP ITEM NO.  
工程編號 B642TH /B

北角交匯處至西灣河的  
東區走廊改善工程  
IMPROVEMENTS TO ISLAND  
EASTERN CORRIDOR -  
SECTION BETWEEN NORTH POINT  
INTERCHANGE AND SAIWAN HO

drawing title 圖號名稱  
截面圖  
SECTIONS

drawing no. 圖號 PMHB642 /SK /014	scale 比例 1 : 1 000
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office  
 MAJOR WORKS  
 PROJECT MANAGEMENT OFFICE  
 主要工程管理處

HIGHWAYS DEPARTMENT  
 路政署  
 HONG KONG

**Enclosure II to PWSC(1999-2000)85**

**642TH - Improvements to Island Eastern Corridor section between North Point Interchange and Sai Wan Ho**

**Breakdown of estimates for consultants' fees (at December 1998 prices)**

<b>Consultants' staff costs</b>			<b>Estimated man months</b>	<b>Average MPS* salary point</b>	<b>Multiplier factor</b>	<b>Estimated fee (\$ million)</b>
(a)	Administration of contract	Professional	104	40	2.4	15.7
		Technical	80	16	2.4	4.0
(b)	Site supervision by resident site staff employed by the consultants	Professional	277	40	1.7	29.6
		Technical	1140	16	1.7	40.7
Total consultants' staff costs						90.0

\* MPS = Master Pay Scale

**Notes**

1. A multiplier factor of 2.4 applied to the average MPS point to arrive at the full staff cost including the consultants' overheads and profit, as the staff will be employed in the consultants' offices. (At 1.4.1998 MPS pt. 40 = \$62,780 p.m. and MPS pt. 16 = \$21,010 p.m.). A multiplier factor of 1.7 applied in the case of resident site staff supplied by the consultants.
  
2. The consultants' fees for work in the construction stage is a provisional part of the lump sum price quoted by the selected consultants under Agreement No. CE57/98 "Design and Construction of Improvements to Island Eastern Corridor section between North Point Interchange and Sai Wan Ho which is available for acceptance by Government subject to approval of upgrading of **642TH** to Category A.