For discussion **PWSC(2000-01)88**
on 17 January 2001

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 706 - HIGHWAYS
Transport - Roads
365TH - Castle Peak Road improvement between Area 2 and Sham Tseng, Tsuen Wan
553TH - Castle Peak Road improvement between Sham Tseng and Ka Loon Tsuen, Tsuen Wan

Members are invited to recommend to Finance Committee -

(a) the upgrading of **365TH** to Category A at an estimated cost of $2,528.3 million in money-of-the-day prices for widening and improving Castle Peak Road between Area 2 and Sham Tseng in Tsuen Wan; and

(b) the upgrading of **553TH** to Category A at an estimated cost of $1,232.3 million in money-of-the-day prices for widening and improving Castle Peak Road between Sham Tseng and Ka Loon Tsuen in Tsuen Wan.

PROBLEM

The existing Castle Peak Road (CPR) between Area 2 and Ka Loon

/ Tsuen .....

Tsuen in Tsuen Wan is below current road standards. The capacity of this road is also insufficient to cope with the future traffic demand generated from the western part of the New Territories.

PROPOSAL

2. The Director of Highways, with the support of the Secretary for Transport, proposes to upgrade **365TH** and **553TH** to Category A at an estimated cost of $2,528.3 million and $1,232.3 million respectively, totaling $3,760.6 million, in money-of-the-day (MOD) prices for widening and improving the section of CPR between Area 2 and Ka Loon Tsuen in Tsuen Wan.

PROJECT SCOPE AND NATURE

3. The scope of works for **365TH** includes -

(a) widening and realignment of the 4.6 kilometre-long CPR between Area 2 and Sham Tseng in Tsuen Wan from a single two-lane to a dual two-lane carriageway with a three-metre wide footpath on both sides, including construction of elevated highway structures of a total length of one kilometre;

(b) construction of a 300-metre long two-lane flyover in Ting Kau and six covered footbridges;

(c) reclamation of 0.8 hectares of land including construction of a 310-metre long seawall;

(d) installation of 1.1 kilometres of 0.8-metre high noise barriers, 300 metres of five-metre high noise barriers, 430 metres of partial noise enclosures, and air-conditioning with window insulation to about 800 dwellings along the route;

(e) provision of recreational facilities at three beaches to compensate for permanent alienation of 4 050 square metres and temporary alienation of 12 020 square metres of beach space; and

/ (f) .....

(f) associated works on road reconstruction, junction modification, slope stabilization, geotechnical, landscaping, lighting and drainage.

4. The scope of works for **553TH** includes -

(a) widening and realignment of the 3.7 kilometre-long CPR between Sham Tseng and Ka Loon Tsuen from a single two-lane to a dual two-lane carriageway with a three-metre wide footpath on both sides, including construction of elevated highway structures of a total length of 300 metres;

(b) construction of five covered footbridges;

(c) reclamation of two hectares of land including construction of a 970-metre long seawall;

(d) installation of 40 metres of five-metre high noise barriers, 170 metres of 3.5-metre high noise barriers, 520 metres of partial noise enclosures, and air-conditioning with window insulation to about 1 100 dwellings along the route;

(e) provision of recreational facilities at two beaches to compensate for permanent alienation of 2 700 square metres and temporary alienation of 600 square metres of beach space and reprovisioning a sitting-out area; and

(f) associated works on road reconstruction, junction modification, slope stabilization, geotechnical, landscape, lighting and drainage.

A site plan is at Enclosure 1.

5. We have substantially completed the detailed design and working drawings for the proposed works under **365TH** and **553TH**. We plan to start the works in June 2001 for completion in June 2005.

/ JUSTIFICATION .....

JUSTIFICATION

6. The existing 8.3 kilometre-long CPR between Area 2 and Ka Loon Tsuen in Tsuen Wan is a single two-lane carriageway, serving mainly the residential developments along the road and those between Ka Loon Tsuen and Tuen Mun east. As CPR runs parallel to Tuen Mun Road (TMR), it also supplements TMR to serve the east-west traffic movements in the west New Territories.

7. This section of CPR is sub-standard from a traffic engineering point of view. For a considerable length of the road, the width of the carriageway is below the current standard of 7.3 metres for a single two-lane carriageway. There are about 12 sharp bends along the road with curvature less than the minimum standard. This causes severe sightline restrictions. Besides, roadside footpaths are either unavailable or too narrow, posing a safety hazard to pedestrians.

8. Apart from enhancing road safety, the proposed widening is necessary to cope with the increasing traffic demand following completion of planned residential developments[1] in Tsuen Wan West and Tuen Mun over the next few years. The projected traffic volume to capacity (V/C)[2] ratios in 2001, 2005 and 2011 with and without the proposed widening at critical sections of CPR are as follows -

V/C Ratio of CPR at its junction with Hoi On Road

	Year		
	2001	**2005**	**2011**
Without the proposed improvement works	0.80	1.69	2.62
With the proposed improvement works	-	0.58	0.91

/ Without .....

[1] The planned residential developments include 16 000 new flats to be built at Tuen Mun Town Lots 423 and 429, Tuen Mun Area 56 Phase I and II, and the San Miguel Site Redevelopment. Furthermore, according to the latest planning data, the population in the Northwest New Territories is expected to increase from 970 000, by 550 000, to 1 510 000 from 2001 to 2016.

[2] The capacity here refers to the design capacity of the road. A V/C ratio of 1.0 or less 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; above 1.2 indicates more serious congestion with traffic speeds progressively deteriorating with further increase in traffic.

V/C Ratio of CPR west of Sham Tseng Interchange

	Year		
	2001	**2005**	**2011**
Without the proposed improvement works	1.42	2.46	3.38
With the proposed improvement works	-	0.85	1.17

9. In Area 2, Sham Tseng and Tsing Lung Tau, there are existing residential developments flanking the northern side of the road. To minimize resumption of private land, we have to form space for road widening through limited reclamation on the seaward side.

10. Associated with the proposed road widening works, we will form local slip roads, including a two-lane flyover at Ting Kau, to link CPR with the existing residential developments. We will also construct 11 footbridges across CPR near major residential developments and beaches.

11. We will improve the roadside slopes in conjunction with the road widening works. There are many potentially unstable slopes adjacent to this stretch of CPR. If left unattended, these slopes may pose a serious threat to the safety of the local residents and commuters who use this road. During the last few years, there have been landslip incidents which have resulted in injuries.

12. The proposed road works will require permanent alienation of 6 750 square metres and temporary alienation of 12 620 square metres of land from six gazetted beaches[3] along CPR. We will provide compensatory recreational facilities including beach stores and barbecue areas at five gazetted beaches[4] and reprovisioning of a sitting out area on a like-with-like basis at Ka Loon Tsuen.

/ 13. .....

[3] The six affected beaches are Approach Beach, Lido Beach, Casam Beach, Hoi Mei Beach, Gemini Beach and Anglers' Beach.

[4] The five beaches are Approach Beach, Ting Kau Beach, Lido Beach, Casam Beach and Hoi Mei Beach.

13. As a result of the proposed widening works and the predicted increase in traffic flow, the residents along the widened carriageway will be exposed to noise levels higher than the upper limit stipulated in the Hong Kong Planning Standards and Guidelines (HKPSG). We will install noise barriers and partial noise enclosures along the road section wherever possible to directly mitigate traffic noise. However, in some areas, due to site constraints, direct mitigation measures are neither effective nor practical. We will provide indirect noise mitigation measures for 1 900 dwelling units in the form of window insulation and air-conditioning.

14. To mitigate the visual impact of the works, we will hydroseed and plant creepers and shrubs on the slopes. We will also plant trees along the footpaths and shrubs on the central reserve.

FINANCIAL IMPLICATIONS

15. We estimate the capital cost of **365TH** and **553TH** to be $2,528.3 million and $1,232.3 million in MOD prices respectively made up as follows -

Estimate for 365TH		**$million**	
(a)	Road and drains		300.7
(b)	Elevated highway structures		463.6
(c)	Slopeworks and retaining walls		819.2
(d)	Reclamation and seawall		11.5
(e)	Noise mitigation measures		232.2
	(i) noise barriers	202.5	
	(ii) indirect technical remedies	29.7	
(f)	Recreational facilities		5.7
(g)	Landscaping works		39.6

/ (h) .....

Estimate for 365TH		**$million**		
(h)	Consultants' fees		213.3	
	(i) construction stage	46.6		
	(ii) site staff costs	166.7		
(i)	Contingencies		210.9	
	Sub-total		2,296.7	(at September 2000 prices)
(j)	Provision for price adjustment		231.6	
	Total		2,528.3	(in MOD prices)

Estimate for 553TH		**$million**		
(a)	Road and drains		181.5	
(b)	Elevated highway structures		62.6	
(c)	Slopeworks and retaining walls		404.5	
(d)	Reclamation and seawall		43.6	
(e)	Noise mitigation measures		198.6	
	(i) noise barriers	176.6		
	(ii) indirect technical remedies	22.0		
(f)	Recreational facilities		7.9	
(g)	Landscaping works		15.7	

/ (h) .....

Estimate for 553TH		**$million**	
(h) Consultants' fees		102.5	
(i) construction stage	22.8		
(ii) site staff costs	79.7		
(i) Contingencies		102.8	
Sub-total		1,119.7	(at September 2000 prices)
(j) Provision for price adjustment		112.6	
Total		1,232.3	(in MOD prices)

A breakdown by man-months of the estimate for consultants' fees is at Enclosure 2.

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

Estimate for 365TH

Year	**$ million (Sept 2000)**	**Price Adjustment Factor**	**$ million (MOD)**
2001 - 02	149.3	1.02550	153.1
2002 - 03	482.3	1.05627	509.4
2003 - 04	574.2	1.08795	624.7
2004 - 05	643.1	1.12059	720.7
2005 - 06	344.5	1.15421	397.6
2006 - 07	103.3	1.18884	122.8
	2,296.7		2,528.3

/ **Estimate** .....

Estimate for 553TH

Year	$ million (Sept 2000)	Price Adjustment Factor	$ million (MOD)
2001 - 02	61.6	1.02550	63.2
2002 - 03	251.9	1.05627	266.1
2003 - 04	279.9	1.08795	304.5
2004 - 05	313.5	1.12059	351.3
2005 - 06	168.0	1.15421	193.9
2006 - 07	44.8	1.18884	53.3
	1,119.7		1,232.3

17. We have derived the MOD estimate on the basis of the Government's latest forecasts trend in labour and construction prices for the period 2001 to 2007. We will tender the proposed works under standard re-measurement contracts because the actual quantities for the geotechnical works and the foundations of the bridges and the noise barriers are subject to variation. We will allow for adjustment due to inflation in the contract because the construction period will last longer than 21 months.

18. We estimate the annual recurrent expenditure arising from the proposed works to be $11.7 million.

PUBLIC CONSULTATION

19. We consulted the then Tsuen Wan District Board on 4 March 1997; the Traffic and Transport Committee of the then Tsuen Wan Provisional District Board (TWPDB) on 16 January 1998 and its Environmental Affairs Committee (EAC) on 19 January 1998 and 16 July 1998. The Board and the Committees supported the proposed improvement projects. However, on 16 July 1998 the

/ EAC .....

EAC of the TWPDB requested the inclusion of a cycle track in the projects. The Administration considered this proposal to be not viable since substantial land resumption and demolition of buildings would be required for a continuous cycle track along the road. Even if it were to be constructed, the gradient of the cycle track at some locations would be substandard as a cycle track cannot be as steep as a carriageway.

20. The proposed road works fall within the gazetted boundaries of six beaches and a sitting-out area under the purview of the then Regional Council (RC). We consulted the RC on 27 March 1997 and the Tsuen Wan District Committee of the then Provisional Regional Council (PRC) on 6 November 1997 and 19 January 1998. The Council supported the proposed road improvements and agreed to the required land alienation from the six beaches as well as the proposed compensatory provision of recreational facilities at five gazetted beaches and a sitting-out area. The cost of these facilities has been included in the project estimates.

21. The Planning Department has undertaken a land use review for Tsuen Wan West. In this context, the Administration presented the project to the Metro Planning Committee (MPC) of the Town Planning Board on 17 December 1999 and 17 March 2000. The MPC expressed concerns about the potential impact of the scheme on the surrounding environment, particularly on the scenic and landscape value of the coastal area. The MPC requested the Administration to consider ways to improve the design of the road alignment to minimize the impact on the recreational uses along the coast. We explained to the MPC that the main objectives of the project were to enhance the safety of road users by upgrading the road to current standards and to increase its capacity to cater for future traffic demand. As CPR is heavily constrained by existing developments along both sides of the road, the present scheme is the optimum solution taking into consideration the engineering design requirements and the need to minimize land resumption and environmental impacts. We will implement extensive landscaping works to ameliorate the visual impact. We have allowed some $55.3 million for this purpose in the project estimates.

22. We gazetted the proposed works under **365TH** under the Roads (Works, Use and Compensation) Ordinance (Chapter 370) on 10 July 1998 and gazetted the amendments to the proposed works on 28 May 1999. We received 16 objections from 15 objectors. Two objectors withdrew their objections

/ unconditionally .....

unconditionally[5] and 14 objections from 13 objectors remained unresolved. Details of the unresolved objections are shown in Enclosure 3.

23. We gazetted the proposed works under **553TH** under the Roads (Works, Use and Compensation) Ordinance on 26 June 1998, and gazetted the first and second amendments to the proposed works on 21 May 1999 and on 14 April 2000 respectively. We received 20 objections from 19 objectors. Six objectors withdrew their objections unconditionally but 14 objections from 13 objectors remained unresolved. Details of the unresolved objections are shown in Enclosure 4. Having considered the unresolved objections and the proposed modifications to the projects, the Chief Executive-in-Council authorized **365TH** and **553TH** under the Roads Ordinance on 23 May 2000 and 10 October 2000 respectively.

24. At the meeting of the LegCo Panel on Transport on 24 November 2000, Members noted that we would submit the projects to the PWSC meeting on 6 December 2000 for consideration. Members of the panel did not raise any comments on the projects.

25. When we submitted the projects to Members for consideration at the PWSC meeting on 13 December 2000, Members raised further questions regarding details of the traffic accidents, traffic justifications, alienation of the affected beaches, consultation of the then Tsuen Wan District Board regarding the proposed provision of a cycle track and planned developments along CPR. In response, the Administration withdrew the item at the PWSC meeting in order to provide the additional information to Members. Details of the additional information are contained in Enclosures 5 and 6 of this paper as requested.

ENVIRONMENTAL IMPLICATIONS

26. The road improvement projects are not designated projects under the Environmental Impact Assessment (EIA) Ordinance. However the reclamation and dredging works under the two projects are designated elements under items C2 and C12 of Schedule 2 of the EIA Ordinance and environmental

/ permits .....

[5] Under the Roads (Works, Use and Compensation) 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.

permits are required for their construction and operation. In order to alleviate the congestion problem at CPR as a matter of urgency, we propose to upgrade the projects to Category A in parallel with the applications for permission to apply directly for the required environmental permits. We will not commence the reclamation and dredging works before the permits are obtained. As part of the Feasibility Study for the project, an EIA report was prepared and was lodged on the Register established under the EIA Ordinance. The EIA identified traffic noise as a major concern. The findings indicated that by the year 2011 many of the existing residents along CPR would be exposed to traffic noise exceeding the standards set out in the HKPSG. Modeling of air quality impacts indicated that identified sensitive receivers along the proposed route would not be subject to air quality impacts which exceeded the Air Quality Objectives, established under the Air Pollution Control Ordinance, for hourly Nitrogen Dioxide and daily Respirable Suspended Particulate[6] for the design year of 2011. A recent review of the EIA Report indicates that the findings are relevant and that the environmental impact of the project including construction impacts and operational noise impacts can be controlled to within the established standards and guidelines. We will implement an Environmental Monitoring and Audit (EM&A) programme to ensure timely and effective implementation of the recommended mitigation measures. We have included in the overall project estimate an amount of $12.9 million for implementing the EM&A.

27. The EIA and the subsequent review recommend a package of direct technical remedies comprising noise barriers and partial enclosures along the study area to alleviate the noise impact. The traffic noise levels will be reduced by up to 16 dB(A) when all these noise barriers and enclosures are in place.

28. At some sections of the road, we found direct mitigation measures to be impracticable. At those locations, we cannot provide noise screens due to space constraints or the need to maintain adequate sightlines and access for fire engines. We consider the alternative option of providing noise-reducing road surfacing material to be unsuitable for this road section as frequent start-stops at the run-ins and junctions would lead to quick wear and tear requiring frequent and costly maintenance.

/ 29. .....

[6] The peak hour concentration for Nitrogen Dioxide would be 263 $\mu g/m^3$ and the daily average Respirable Suspended Particulate would be 89 $\mu g/m^3$, which are below the Air Quality Objectives of 300 and 180 $\mu g/m^3$ respectively.

29. According to the ongoing Noise Insulation Work Study for the projects, we estimate that about 1 900 dwellings are eligible for indirect technical remedies for the projects. We estimate the cost of implementing the indirect technical remedies to be $51.7 million. We have included this cost in the project estimate.

30. We consulted the Advisory Council on the Environment (ACE) on 21 April 1997. The ACE endorsed the EIA report 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 contracts. The EIA also studied ways to reduce the generation of construction and demolition material (C&DM). It was estimated that approximately 1 420 000 cubic metres of C&DM will be generated. We will reuse/recycle about 640 000 cubic metres (45.07%) of C&DM on site to reduce waste generation. About 546 000 cubic metres (38.45%) of filling materials and 229 000 cubic metres (16.13%) of C&DM will be delivered to public filling facilities and by the contractor to his own tips respectively. About 5 000 cubic metres (0.35%) of C&D waste will be disposed of at landfills. We shall require the contractor to submit a waste management plan under the contract to the Engineer for approval. The waste management plan shall include appropriate mitigation measures including the allocation of an area for waste segregation. We shall require the Engineer to ensure that the day-to-day operations on site comply with the approved waste management plan submitted. We shall require the contractor to separate public fill from C&D waste for disposal at appropriate locations and to sort the C&DM by category on-site to facilitate reuse/recycling. The reused/recycled materials shall include paper/ cardboard, timber and metal. We shall control the disposal of these materials through a trip-ticket system. We shall record the disposal, reuse and recycling of C&DM for monitoring purposes.

LAND ACQUISITION

31. For the proposed road improvement works, we shall resume approximately 15 989 square metres of private land. 49 families will be affected by the clearance. The Director of Housing will offer these families accommodation in public housing or temporary housing areas in line with the existing housing policy. We will charge land acquisition and clearance costs, estimated at $248.5 million, to **Head 701** – Land Acquisition.

/ 32. .....

32. The proposed road improvement works would affect a sitting-out area and require permanent alienation of about 6 750 square metres and temporary alienation of 12 620 square metres of land from the affected beaches. The then PRC agreed to such alienation.

BACKGROUND INFORMATION

33. We upgraded **365TH** and **553TH** to Category B in September 1995.

34. We engaged consultants to undertake the feasibility study and preliminary design of the improvement to the section of CPR between Area 2 and Ka Loon Tsuen in Tsuen Wan at a cost of $8.6 million in MOD prices under **Subhead 6100TX** - "Highway Works, studies and investigation for items in Category D of the Public Works Programme". We completed the feasibility study and preliminary design in February 1997.

35. We upgraded part of **365TH** and **553TH** as a single item **701TH** to Category A, entitled "Castle Peak Road improvement between Area 2 and Ka Loon Tsuen, Tsuen Wan – consultants' design fees and investigations" in June 1997 at a cost of $57.2 million in MOD prices and engaged consultants to undertake the detailed design in June 1997.

36. To minimize traffic disruption, we will carry out temporary traffic diversion arrangements as and when necessary.

37. We estimate that the proposed works for **365TH** will create some 1 792 new jobs with a total of about 47 914 man-months comprising 282 professional/technical staff and 1 510 labourers and the proposed works for **553TH** will create some 991 new jobs with a total of about 22 666 man-months comprising 151 professional/technical staff and 840 labourers.

Transport Bureau
January 2001

Enclosure 2 to PWSC(2000-01)88

365TH - Castle Peak Road improvement between Area 2 and Sham Tseng, Tsuen Wan

Breakdown of the estimate for consultants' fees (at September 2000 prices)

Consultants' staff costs			Estimated man-months	Average MPS* salary point	Multiplier Factor	Estimated fee ($ million)
(a)	Administration of contract	Professional	308	38	2.4	42.5
		Technical	90	14	2.4	4.1
(b)	Site supervision by resident site staff employed by the consultants	Professional	700	38	1.7	68.5
		Technical	3030	14	1.7	98.2
	Total consultants' staff costs					213.3

* MPS = Master Pay Scale

553TH - Castle Peak Road improvement between Sham Tseng and Ka Loon Tsuen, Tsuen Wan

Breakdown of the estimate for consultants' fees (at September 2000 prices)

Consultants' staff costs			Estimated man-months	Average MPS* salary point	Multiplier Factor	Estimated fee ($ million)
(a)	Administration of contract	Professional	150	38	2.4	20.7
		Technical	45	14	2.4	2.1
(b)	Site supervision by resident site staff employed by the consultants	Professional	325	38	1.7	31.8
		Technical	1480	14	1.7	47.9
	Total consultants' staff costs					102.5

* MPS = Master Pay Scale

Notes

1. A multiplier factor of 2.4 is 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. A multiplier factor of 1.7 is applied in the case of site staff supplied by the consultants. (At 1.4.2000 MPS pt. 38 = $57,525 p.m. and MPS pt. 14 = $19,055 p.m.)

2. The consultants' fees for work in the construction stage are a provisional part of the lump sum price quoted by the selected consultants under Agreement No. CE1/96 "Design and Construction Assignment for Castle Peak Road Improvement between Area 2 and Ka Loon Tsuen, Tsuen Wan" which is available for acceptance by Government subject to approval of upgrading of **365TH** and **553TH** to Category A.

Enclosure 3 to PWSC(2000-01)88

Details of the unresolved objections to 365TH

(a) Five objectors objected to the land resumption for the proposed works. We have modified the proposed works to minimize the land resumption at four locations for four of the objectors. The objectors withdrew their objections subject to the modifications. We explained to a fifth objector that moving the proposed road alignment to avoid land resumption was not feasible as the CPR near his lot was constrained by residential developments on both sides. The objector maintained his objection.

(b) Five objectors objected to the proposed road layout. Three of them were concerned about the potential hazard of errant vehicles falling from a proposed flyover. We explained to them that 1.5-metre high reinforced concrete parapet would be constructed along the bend of the flyover to prevent such happening. However, the objectors maintained their objections. The fourth objector objected that a proposed roundabout in front of his property would affect the traffic movements from the lot. We explained to him that the roundabout location was the most desirable in terms of minimizing land resumption. The objector maintained his objection. A fifth objector requested the provision of transport and pedestrian crossing facilities. We have revised the design to meet his requests. The objector withdrew his objection subject to the agreed modifications.

(c) Two objectors objected to the termination of their government land licences. The first lodged two objections concerning the termination of a government land licence and the possible environmental impacts of the project on his lot. We informed him that we would implement compensatory planting to promote a friendly environment but the land covered by the government licence was necessary for the implementation of the project. The objector maintained his objections. A second objector used the licensed government land as a garage. We informed him that we would not be able to avoid land acquisition by modifying the proposed works. We discussed with him possible options to ease his concerns. He opted to apply to the Director of Lands for a direct vehicular access to his lot. As the Director of Lands was still processing his application, he maintained his objection.

(d) One objector expressed that the Administration did not respect the 'private rights of property' and did not consider the 'redevelopment potential of the affected lands' when assessing land resumption compensation. We explained to the objector that the implementation of proposed works was in compliance with the current policy and statutory procedures. Nonetheless, the objector maintained his objection.

Enclosure 4 to PWSC(2000-01)88

Details of the unresolved objections to 553TH

(a) One objector lodged two objections to the resumption of his house, which was covered by a government land license. He was also concerned about the environmental impacts of the proposed works especially the marine works. He also counter-proposed to construct a coastal road at Tsing Lung Tau to meet the future traffic demand. We explained to him that the termination of the government land license and the marine works were necessary and that the coastal road option was not feasible as it could not serve the residential developments alongside the CPR. We further explained to the objector that environmental mitigation measures would be implemented at appropriate locations. The objector maintained his objections.

(b) Five objectors objected to the proposed locations and layouts of certain footbridges, the environmental impacts of the proposed works and the banning of right turning movement. One of them also requested the Administration to connect the proposed footbridge to his lot and he was concerned about the impacts of the proposed road works on his loading and unloading activities during our construction period. We advised the objector that a future connection to the footbridge to be built by him would be possible and we would maintain continuous passage to his lot. The objector did not withdraw his objection. In response to the objections by the other four objectors, we deleted a proposed footbridge and kept an existing signalized crossing that is located nearer to the Sham Tseng centre. We informed them that noise mitigation measures would be implemented to mitigate traffic noise and that the air quality after the road improvement was within acceptable levels. We also advised the objectors that the banning of right turning movement was necessary to improve traffic flow and safety of the improved road. They did not withdraw their objections.

(c) One objector objected to a proposed noise enclosure in front of his lot as it would prohibit his vehicular access from CPR. We explained to the objector that he had no legal entitlement to the existing vehicular access. He maintained his objection.

(d) Three objectors took the view that the proposed works were unnecessary and objected to the impact of the project on the various beaches. We informed them that the proposed works were necessary to cater for the future developments and traffic demand and had been designed to minimize the impacts on the beaches. The objectors maintained their objections.

(e) Three objectors were concerned about the impacts of the proposed works on their livelihood and the adequacy of future transport and pedestrian crossing facilities. Although we proposed to construct an additional footbridge near their houses and would reprovision bus stops and laybys at appropriate locations, the objectors maintained their objections.

Enclosure 5 to PWSC(2000-01)88

Supplementary information to PWSC meeting held on 13 December 2000

1. Traffic accident statistics

The number of accidents on different sections of CPR in Tsuen Wan and Tuen Mun districts from 1 October 1998 to 30 September 2000 is as follows -

	No. of Accidents			
	Fatal	**Serious**	**Slight**	**Total**
Road section				
CPR between Hoi On Road, Tsuen Wan and Sham Tseng Interchange	1	14	35	50
CPR between Sham Tseng Interchange and Ka Loon Tsuen	1	16	34	51
CPR between Ka Loon Tsuen and Siu Lam Interchange	1	4	14	19
CPR between Siu Lam Interchange and Hoi Wing Road, Tuen Mun	0	11	60	71

2. Details of additional traffic on CPR

(a) A plan showing the locations, number of flats and expected completion dates for the major property developments is given in Enclosure 6. We estimate that by 2011, more than 20 000 new flats will be completed along CPR between Tuen Mun and Tsuen Wan.

(b) We forecast the above planned residential developments along CPR will generate some 2 000 extra vehicle trips per hour in 2011 as follows -

Section	**Additional traffic volume generated Vehicles per hour, morning peak, Kowloon bound**
CPR between Sam Shing Hui and Siu Lam	1100

CPR between Siu Lam and Sham Tseng	800
CPR between Sham Tseng and Area 2, Tsuen Wan	100

The current flow on CPR west of Sham Tseng Interchange is 1 300 vehicles per hour.

(c) To cater for the increase in traffic volume, we need to widen both sections of CPR east and west of Sham Tseng Interchange (under **365TH** and **553TH** respectively). We have considered alternatives of diverting the increase in traffic onto Tuen Mun Road (TMR) but found the options to be impracticable. The extra traffic would not only overload the entry interchanges at Siu Lam and Sham Tseng but also the mainline of TMR, detailed as follows –

(i) Siu Lam Interchange

At present, due to capacity problems, only buses can use the interchange to access TMR eastbound. Even if the bus-only right turn to TMR at Siu Lam Interchange is re-opened to all vehicles in the morning peak hours, it has no extra capacity to take on future increase in traffic load. The right turn movement to TMR east bound can allow at most 700 vehicles per hour while the ahead-only road to CPR eastbound has a capacity of about 1 000 vehicles per hour. We expect that by 2011 the total demand for Kowloon bound traffic will increase to 2 000 vehicles per hour.

(ii) Sham Tseng Interchange

The existing slip road at Sham Tseng Interchange has only one northbound lane for vehicular traffic to join TMR from CPR. The northbound lane is operating at its full capacity of 1 000 vehicles per hour and has no spare capacity to carry additional traffic. It is impracticable to widen the slip road as it is already constrained by a residential development, an embankment and an underpass beneath TMR. Even if the slip road were to be widened to two lanes, the 700-metre distance between Sham Tseng Interchange and the slip road to Ting Kau Bridge is insufficient for two lanes of traffic to merge safely onto TMR.

(iii) TMR

Traffic on TMR is fast approaching its capacity despite the commissioning of the Tai Lam section of Route 3. The existing eastbound TMR between Sham Tseng Interchange and Ting Kau Interchange has a capacity of 5 600 vehicles per hour and is already carrying a traffic volume of 5 000 vehicles per hour. If the additional traffic from CPR is added onto TMR, there will be severe congestion on the Kowloon bound traffic on TMR. Due to immense technical difficulties, we have no plan to widen TMR but only to provide full width hard shoulder along that road.

3. Alienation of affected beaches

Name of affected beach	Gazetted Beach area (m^2)	Permanent alienation Area (m^2)	Permanent alienation % of net Gazetted Beach area	Temporary alienation Area (m^2)	Temporary alienation % of net Gazetted Beach area
Approach Beach	56 860	790	1.4%	1 520	2.7%
Casam Beach and Lido Beach	41 210	150	0.4%	1 380	3.3%
Hoi Mei Beach	30 360	1 860	6.1%	4 810	15.8%
Gemini Beach	13 290	1 250	9.4%	4 310	32.4%
Anglers' Beach	17 270	2 700	15.6%	600	3.5%
Total	158 990	6 750	4.2%	12 620	7.9%

4. Provision of a cycle track along Castle Peak Road

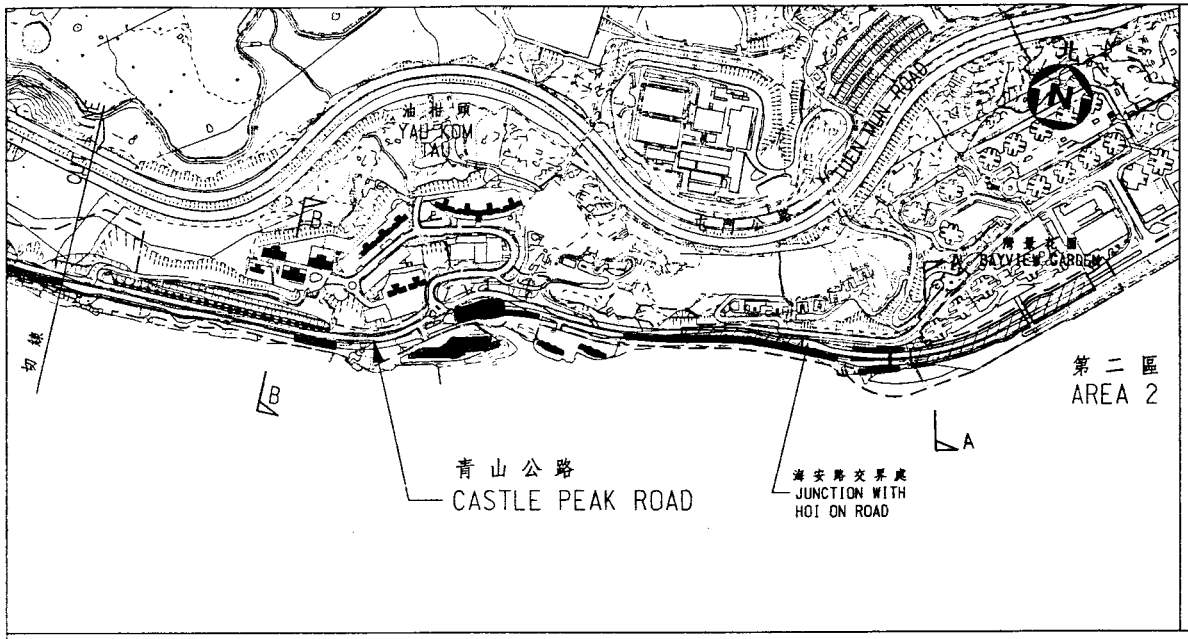
In relation to the views of the then District Board on the provision of a cycle track along Castle Peak Road, a set of consultation documents and minutes of the following meetings is deposited at the LegCo Secretariat for inspection -

(a) The then Tsuen Wan District Board meeting held on 4 March 1997;

(b) The then Tsuen Wan Provisional District Board (TWPDB) Traffic and Transport Committee (T&TC) meetings held on 16 January and 19 March 1998; and

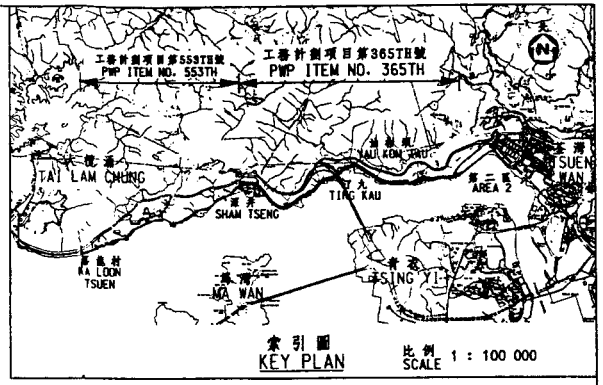
(c) The then TWPDB Environmental Affair Committee meetings held on 19 January, 23 March, 21 May and 16 July 1998.

We have liaised with various relevant departments regarding the proposal to provide a cycle track along Castle Peak Road. We agree that the coastline provides some of the best scenic views in the territory. In this connection, we propose to conduct a comprehensive study on beautification of the area and developing the area as a place on interest for local and overseas visitors. Various facilities including cycle track, promenade, fishing points and other amenity facilities will be considered in the study. We shall brief Members on the outcome of the study when it is completed.



圖例 LEGEND:

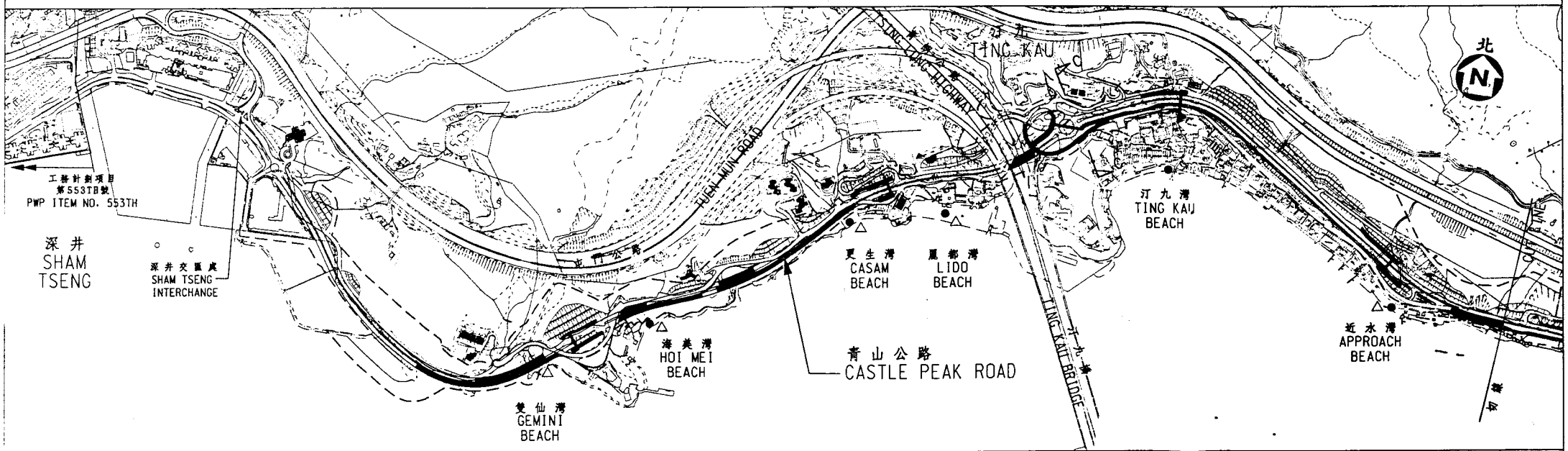
- 施工區界限 LIMIT OF WORKS AREA
- 擬建行車道 PROPOSED CARRIAGEWAY
- 擬建架空結構 PROPOSED ELEVATED STRUCTURE
- 擬建汀九行車天橋 PROPOSED TING KAU FLYOVER
- 擬建填海區 PROPOSED RECLAMATION
- 擬建海堤 PROPOSED SEAWALL
- 擬建康文化事務署的補償設施 PROPOSED LCSD COMPENSATORY FACILITIES
- 受工程影響的泳灘 BEACH AFFECTED BY THE PROJECT
- 擬建斜坡工程 PROPOSED SLOPEWORK
- 擬建行人天橋 PROPOSED FOOTBRIDGE
- 擬建0.8米高隔音屏障 PROPOSED 0.8m HIGH NOISE BARRIER
- 擬建5米高隔音屏障 PROPOSED 5m HIGH NOISE BARRIER
- 擬建半封閉式隔音罩 PROPOSED PARTIAL NOISE ENCLOSURE



隔音改善工程包括安裝冷氣機及改善窗户的隔音效能
INDIRECT TECHNICAL REMEDIES INCLUDING AIR CONDITIONING AND WINDOW INSULATION

註釋 NOTES:

1. 此圖需與圖則PMH6365/1PS/106一同參閱。
   THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH DRAWING NO. PMH6365/1PS/106.



title 圖則名稱
工務計劃項目第365TH號
荃灣第二區與深井之間的青山公路改善工程－位置圖
PWP ITEM NO. 365TH
CASTLE PEAK ROAD IMPROVEMENT BETWEEN AREA 2 AND SHAM TSENG, TSUEN WAN - LOCATION PLAN

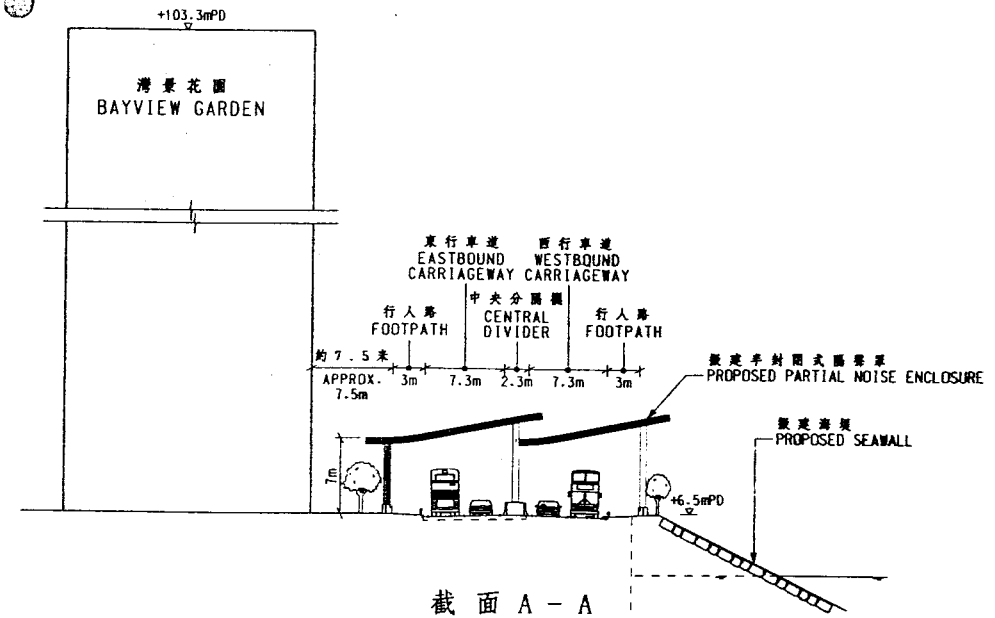
designed	S.W.CHUNG	10/00	drawn S.H.CHENG	10/00	drawing no. 圖號 PMH6365/1PS/105
checked	S.W.CHUNG	10/00	approved JOHN.K.H.LI	10/00	scale 比例 1:7500@A3 或如圖示 OR AS SHOWN

office MAJOR WORKS PROJECT MANAGEMENT OFFICE 主要工程管理處

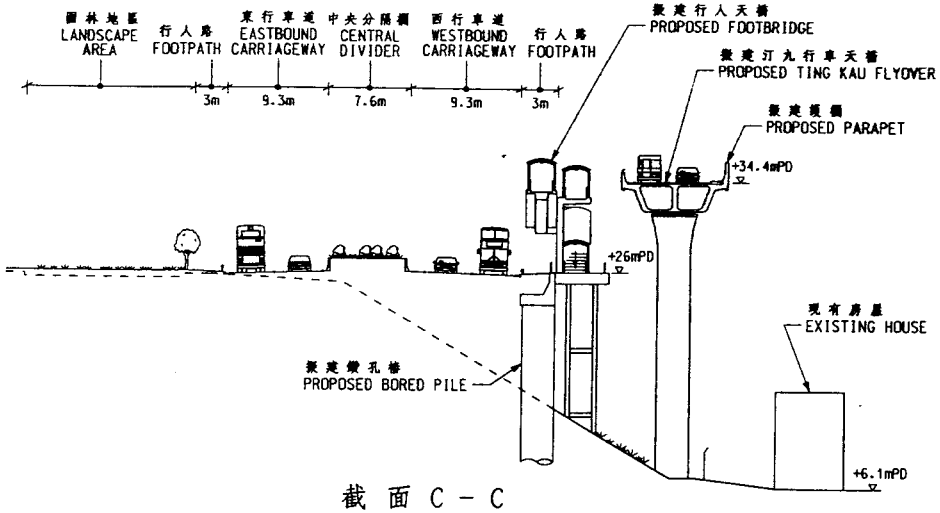
HIGHWAYS DEPARTMENT HONG KONG 路政署 香港

Path- D:\TEAM2\6365TH\63651ps105.dgn Plot Date : 31-OCT-2000

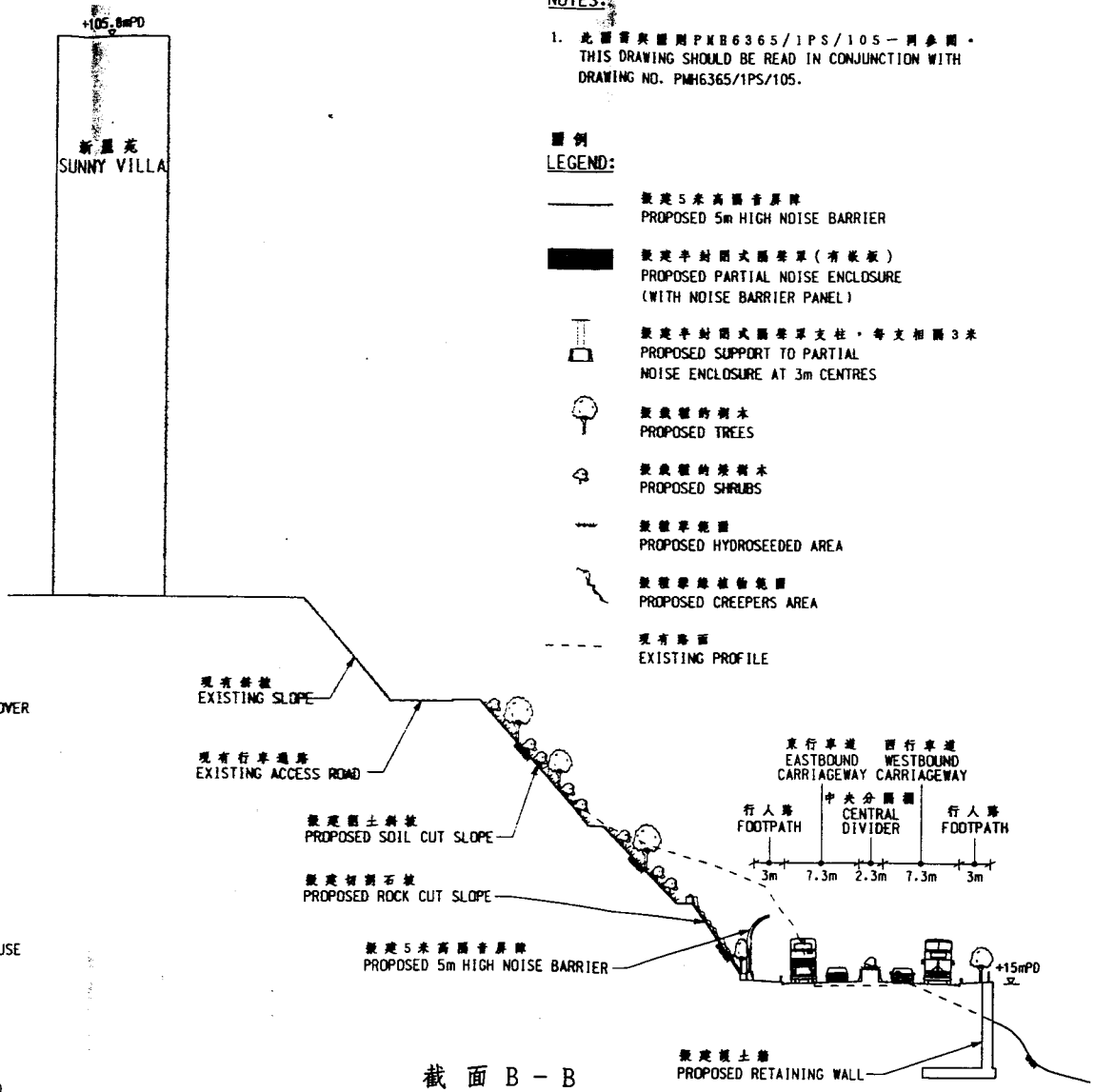
A3 420 x 297



截面 A－A
SECTION A－A



截面 C－C
SECTION C－C



截面 B－B
SECTION B－B

註釋
NOTES:

1. 此圖需與圖則PMH6365/1PS/105一同參閱。
   THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH DRAWING NO. PMH6365/1PS/105.

圖例
LEGEND:

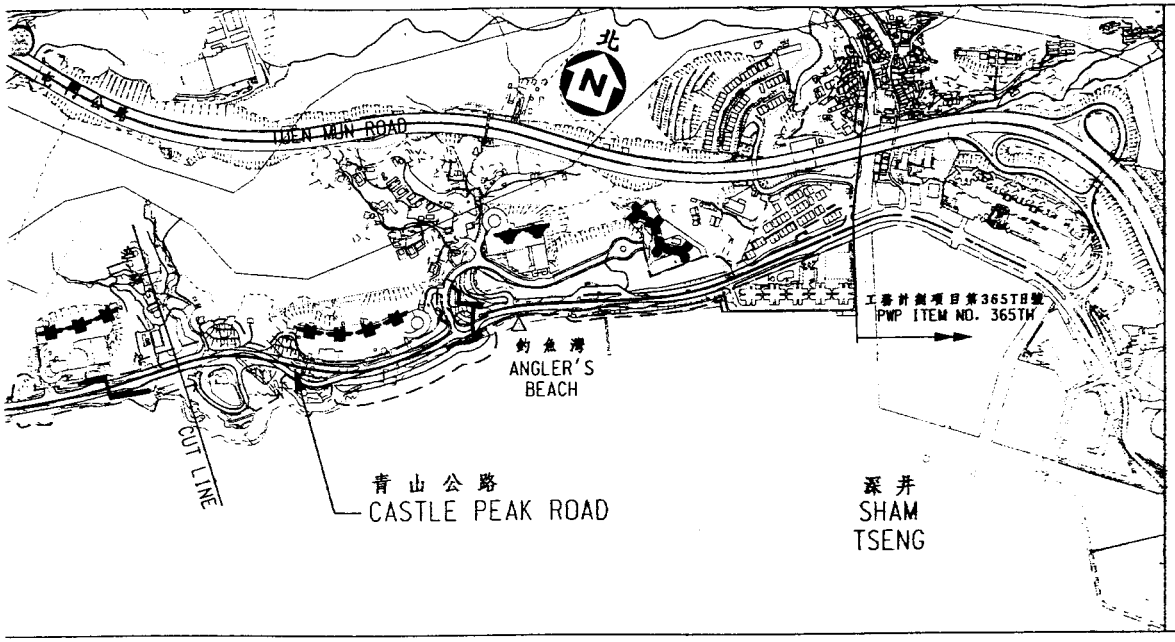
- 擬建5米高隔音屏障 PROPOSED 5m HIGH NOISE BARRIER
- 擬建半封閉式隔音罩(有吸板) PROPOSED PARTIAL NOISE ENCLOSURE (WITH NOISE BARRIER PANEL)
- 擬建半封閉式隔音罩支柱，每支相隔3米 PROPOSED SUPPORT TO PARTIAL NOISE ENCLOSURE AT 3m CENTRES
- 擬建種植樹木 PROPOSED TREES
- 擬建種植灌木 PROPOSED SHRUBS
- 擬建草坡面 PROPOSED HYDROSEEDED AREA
- 擬建攀緣植物範圍 PROPOSED CREEPERS AREA
- 現有地面 EXISTING PROFILE

title 圖則名稱
工務計劃項目第365TH號
荃灣第二區與深井之間的青山公路改善工程－截面圖
PWP ITEM NO. 365TH
CASTLE PEAK ROAD IMPROVEMENT BETWEEN AREA 2 AND SHAM TSENG, TSUEN WAN - SECTIONS

designed S.W.CHUNG 10/00	drawn S.H.CHENG 10/00	drawing no. 圖號 PMH6365/1PS/106	scale 比例 1:500 @A3
checked S.W.CHUNG 10/00	approved JOHN.K.H.LI 10/00	HIGHWAYS DEPARTMENT HONG KONG 路政署 香港	
office MAJOR WORKS PROJECT MANAGEMENT OFFICE 主要工程管理處			

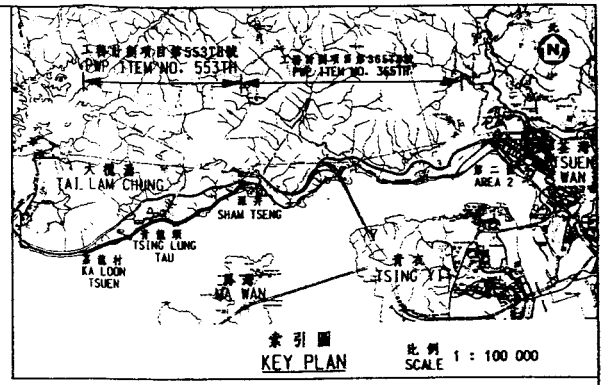
path- d:\team2\6365th\63651ps106.dgn Plot Date : 31-OCT-2000

A3 420 x 297



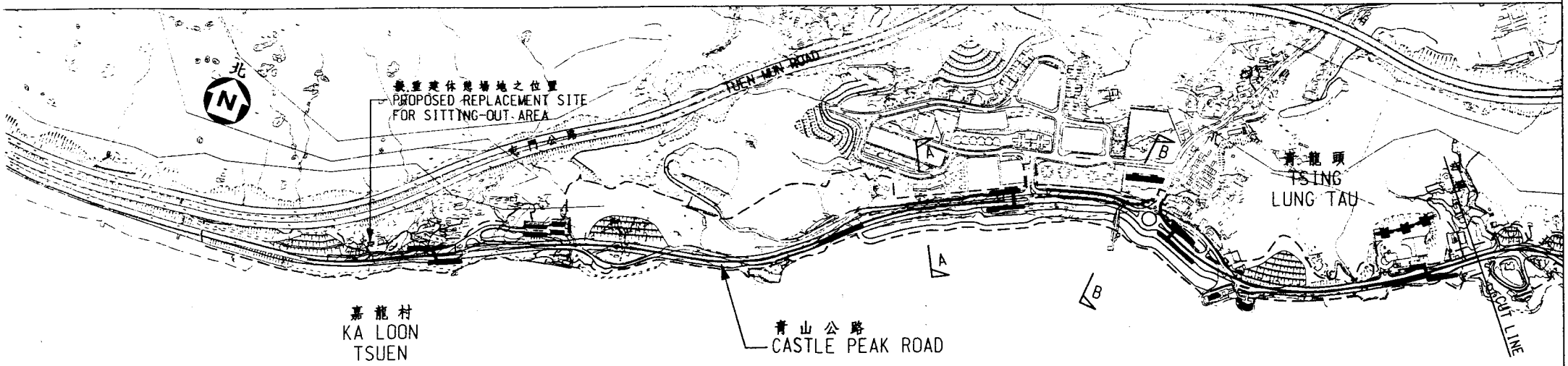
圖例 LEGEND:

- 施工區界限 LIMIT OF WORKS AREA
- 擬建行車道 PROPOSED CARRIAGEWAY
- 擬建架空結構 PROPOSED ELEVATED STRUCTURE
- 擬建填海區 PROPOSED RECLAMATION
- 擬建海堤 PROPOSED SEAWALL
- 受工程影響的泳灘 BEACH AFFECTED BY THE PROJECT
- 擬建斜坡工程 PROPOSED SLOPEWORK
- 擬建行人天橋 PROPOSED FOOTBRIDGE
- 擬建3.5米高隔音屏障 PROPOSED 3.5m HIGH NOISE BARRIER
- 擬建5米高隔音屏障 PROPOSED 5m HIGH NOISE BARRIER
- 擬建半封閉式隔音罩 PROPOSED PARTIAL NOISE ENCLOSURE
- 隔音改善工程包括安裝冷氣機及改善窗户的隔音效能 INDIRECT TECHNICAL REMEDIES INCLUDING AIR CONDITIONING AND WINDOW INSULATION



註釋 NOTES:

1. 此圖需與圖則PMH6553/1PS/108一同參閱。
   THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH DRAWING NO. PMH6553/1PS/108.



itle 圖則名稱

工務計劃項目第553TH號

荃灣深井與嘉龍村之間的青山公路改善工程－位置圖

'WP ITEM NO. 553TH

ASTLE PEAK ROAD IMPROVEMENT BETWEEN SHAM TSENG AND KA LOON TSUEN, TSUEN WAN - LOCATION PLAN

designed	S.W.CHUNG 10/00	drawn	S.H.CHENG 10/00	drawing no. 圖號	scale 比例
checked	S.W.CHUNG 10/00	approved	JOHN.K.H.YI 10/00	PMH6553/1PS/107	1:7500@A3 或如圖示 OR AS SHOWN
office	MAJOR WORKS PROJECT MANAGEMENT OFFICE 主要工程管理處			HIGHWAYS DEPARTMENT HONG KONG 香港政府路署	

ath- D:\TEAM2\6553TH\65531ps107.dgn Plot Date : 30-OCT-2000

A3 420 x 297

註：
NOTES:

此圖需與圖則PWH6553/1PS/107一同參閱。
THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH DRAWING NO. PMH6553/1PS/107.

圖例
LEGEND:

擬建5米高隔音屏障
PROPOSED 5m HIGH NOISE BARRIER

擬建半封閉式隔音罩(有吸板)
PROPOSED PARTIAL NOISE ENCLOSURE (WITH NOISE BARRIER PANEL)

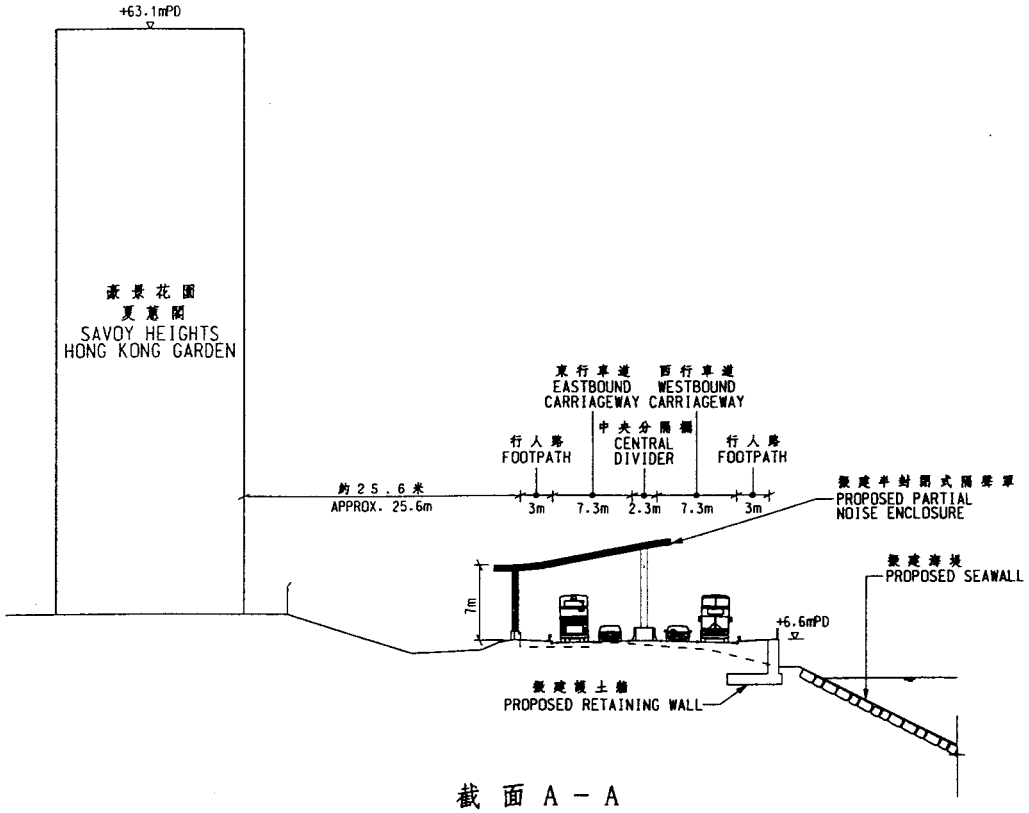
擬建半封閉式隔音罩支柱，每支相隔3米
PROPOSED SUPPORT TO PARTIAL NOISE ENCLOSURE AT 3m CENTRES

擬栽種的樹木
PROPOSED TREES

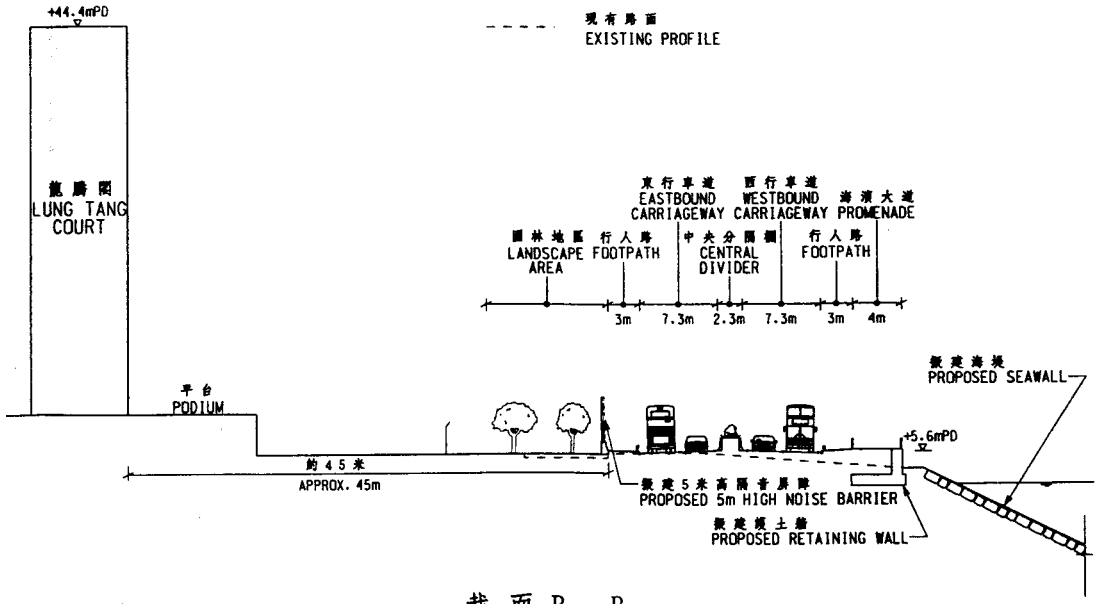
擬栽種的灌木
PROPOSED SHRUBS

擬種草範圍
PROPOSED HYDROSEEDED AREA

現有路面
EXISTING PROFILE



截面 A－A
SECTION A－A



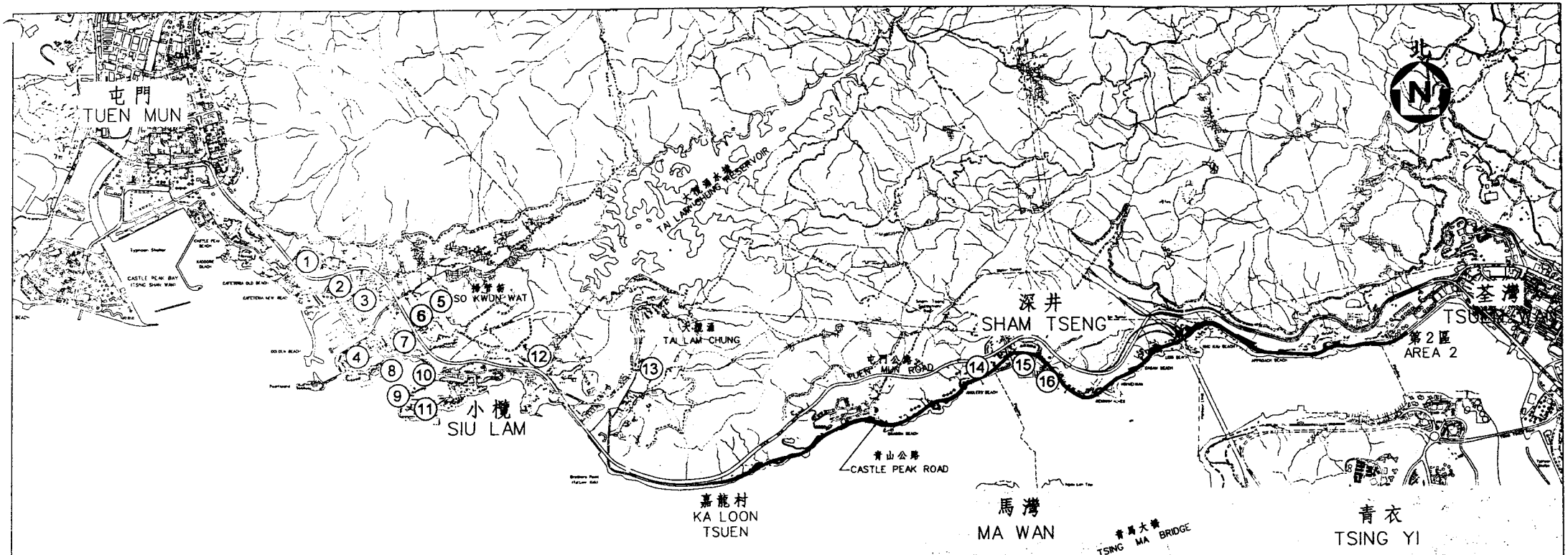
截面 B－B
SECTION B－B

title 圖則名稱
工務計劃項目第553TH號
荃灣深井與嘉龍村之間的青山公路改善工程－截面圖
PWP ITEM NO. 553TH
CASTLE PEAK ROAD IMPROVEMENT BETWEEN SHAM TSENG AND KA LOON TSUEN, TSUEN WAN - SECTIONS

designed S.W.CHUNG	10/00	drawn S.H.CHENG	10/00	drawing no. 圖號 PMH6553/1PS/108	scale 比例 1:500 @A3
checked S.W.CHUNG	10/00	approved JOHN.K.H.LI	10/00		
office MAJOR WORKS PROJECT MANAGEMENT OFFICE 主要工程管理處				HIGHWAYS DEPARTMENT HONG KONG 路政署 香港	

Path- d:\team2\6553th\65531ps108.dgn Plot Date : 30-OCT-2000

A3 420 x 297



	PLANNED RESIDENTIAL DEVELOPMENT	計劃中的住宅發展項目	No. OF FLATS 單位數目	FORECAST COMPLETION DATE 預計完工日期
1	TUEN MUN TOWN LOT 423	屯門市地段第423號	2,100	A
2	TUEN MUN TOWN LOT 429	屯門市地段第429號	2,040	B
3	TUEN MUN TOWN LOT 374	屯門市地段第374號	1,620	B
4	TUEN MUN TOWN LOT 238-B2 & B4	屯門市地段第238號-B2及B4號	290	A
5	TUEN MUN AREA 56 PHASE I	屯門第56區第一期	2,860	A
6	TUEN MUN AREA 56 PHASE II	屯門第56區第二期	2,040	B
7	TUEN MUN TOWN LOT 37	屯門市地段第37號	1,250	A
8	EX-PEARL ISLAND QUARTERS	前龍珠島宿舍	190	A
9	TUEN MUN TOWN LOT 419	屯門市地段第419號	320	A
10	TUEN MUN TOWN LOT 371	屯門市地段第371號	440	A
11	EX-DESALTING PLANT SITE, LOK ON PAI	前樂安排海水化淡廠	1,500	B
12	TUEN MUN TOWN LOT 400	屯門市地段第400號	860	A
13	TUEN MUN TOWN LOT 417	屯門市地段第417號	940	A
14	LOT 214 IN DD387	丈量約份第387號第214地段	220	A
15	SAN MIGUEL SITE REDEVELOPMENT	生力啤地盤重新發展區	3,350	A
16	EX-UNION CARBIDE	經皇居	560	A
	TOTAL	總數	20,580	

圖例
LEGEND :

- 365TH號-荃灣第2區與深井之間的青山公路改善工程
  365TH - CASTLE PEAK ROAD IMPROVEMENT BETWEEN AREA 2 AND SHAM TSENG, TSUEN WAN
- 553TH-荃灣深井與嘉龍村之間的青山公路改善工程
  553TH - CASTLE PEAK ROAD IMPROVEMENT BETWEEN SHAM TSENG AND KA LOON TSUEN, TSUEN WAN
- 政府發展項目 GOVERNMENT DEVELOPMENT
- 私人發展項目 PRIVATE DEVELOPMENT
- A 預計於2001至2005年完工 FORECAST COMPLETION DATE 2001 TO 2005
- B 預計於2006至2011年完工 FORECAST COMPLETION DATE 2006 TO 2011

drawing title 圖則名稱

屯門，小欖和深井計劃中的住宅發展項目
PLANNED RESIDENTIAL DEVELOPMENTS IN TUEN MUN, SIU LAM AND SHAM TSENG

designed S.W.CHUNG 12/00	drawn L.Y.LEUNG 12/00	drawing no. 圖號 PMH6553/1PS/109	scale 比例 1:40000
checked S.W.CHUNG 12/00	approved JOHN.K.H.LI 12/00		
office MAJOR WORKS PROJECT MANAGEMENT OFFICE 主要工程管理處		HIGHWAYS DEPARTMENT HONG KONG 路政署 香港	

Path- d:\team2\6553th\6553lps109.dgn Plot Date : 20-DEC-2000
Plot Scale : 40000.000000:1.000000

A3 420 x 297