

Traffic Improvements to Tuen Mun Road Town Centre Section

Environmental Project Profile

December 2006

Highways Department

Traffic Improvements to Tuen Mun Road Town Centre Section
Environmental Project Profile

Content

	<u>Page</u>
1. BASIC INFORMATION.....	1
1.1 Project Title.....	1
1.2 Purpose and Nature of Project	1
1.3 Name of Project Proponent.....	2
1.4 Location and Scale of Project and History of Site.....	2
1.5 Number and Types of Designated Project to be covered by the Project Profile...	3
1.6 Name and Telephone numbers of Contact Persons	3
2. OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME.....	4
2.1 Project Planning and Implementation.....	4
2.2 Project Timetable	4
2.3 Interaction with Other Projects	4
3. POSSIBLE IMPACT ON THE ENVIRONMENT	5
3.1 Air Quality	5
3.2 Noise	5
3.3 Ecology	5
3.4 Water Quality.....	6
3.5 Construction Waste Management.....	6
3.6 Landscape & Visual.....	6
3.7 Hazard to Life	6
4. MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT.....	7
4.1 Sensitive Receivers	7
4.2 Major Elements of the Surrounding Environment.....	8
5. ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED.	9
5.1 Air Quality	9
5.2 Noise	9
5.3 Ecology	9
5.4 Water Quality.....	10
5.5 Construction Wastes	10
5.6 Cultural Heritage.....	10
5.7 Landscape and Visual	11
6. USE OF PREVIOUSLY APPROVED EIA REPORTS.....	11

DRAWINGS

- 9C705/001 Tuen Mun Road Town Centre Section Layout Plan
- 9C705/101 Layout Plan – Dual 3-Lane Widening Option (Sheet 1 of 4)
- 9C705/102 Layout Plan – Dual 3-Lane Widening Option (Sheet 2 of 4)
- 9C705/103 Layout Plan – Dual 3-Lane Widening Option (Sheet 3 of 4)
- 9C705/104 Layout Plan – Dual 3-Lane Widening Option (Sheet 4 of 4)
- 9C705/105 Location of Representative Air and Noise Sensitive Receivers

1. BASIC INFORMATION

1.1 Project Title

1.1.1 Traffic Improvements to Tuen Mun Road Town Centre Section.

1.2 Purpose and Nature of Project

1.2.1 Highways Department of the Hong Kong SAR Government commissioned Maunsell Consultants Asia Ltd. to undertake Agreement No. CE 38/2005 (HY) “Traffic Improvement to Tuen Mun Road Town Centre Section – Feasibility Study” (hereafter referred to as “the Assignment”).

1.2.2 This Assignment comprises traffic improvement works to Tuen Mun Road – Town Centre Section (TMRTCS) between Lam Tei Interchange in the north and Wong Chu Road in the south. This road section is about 3.2km long and is basically a dual two-lane highway except at the following two sections, where the carriageways are locally widened to dual-three lanes:-

- The section between Lam Tei Interchange and Tsing Tin Interchange (0.85km long); and
- The section between Tsing Tin Interchange and Pui To Road (0.81km long).

1.2.3 In the morning peak period (7a.m. – 9a.m.), the volume/capacity (v/c) ratios of the southbound two-lane carriageways are in the range of 0.89- 0.99, the most critical being the Wong Chu Road section. In other words, TMRTCS at these two-lane sections is operating close to its design capacity and there is little spare capacity to cater for any substantial increase in traffic.

1.2.4 TMRTCS is currently operating close to its capacity and there is virtually no spare capacity to cater for any substantial increase in traffic. In particular, there would be potential congestion of TMRTCS after opening of the Hong Kong – Shenzhen Western Corridor (HK-SWC) and the Deep Bay Link (DBL) in late 2006/ early 2007. It is anticipated that HK-SWC will bring additional traffic through TMRTCS. To alleviate the problem, a medium term measure to improve the traffic condition of TMRTCS should be investigated to meet the medium term traffic demand till 2016.

1.2.5 The objective of the Assignment is to propose improvement measures to resolve the traffic congestion problem of TMRTCS. The works is planned to be completed by March 2010 to meet the medium term traffic demand.

1.2.6 The recommended traffic improvement measures is named as “Dual 3-Lane Widening Option”. The proposed dual 3-lane widening cover the sections of TMRTCS bounded between Yan Oi Town Square in the north and Wong Chu Road in the south measuring about 1.5km in length (see *Drawing No. 9C705/001*).

1.3 Name of Project Proponent

1.3.1 The Project Proponent is the Major Works Project Management Office, Highways Department, HKSAR.

1.4 Location and Scale of Project and History of Site

1.4.1 The proposed traffic improvement measures involves widening the following sections of TMR from dual-two carriageway to dual-three carriageway:-

- Wong Chu Road Section, (from Wong Chu Road Interchange to Tuen Hing Road); and
- Tuen Mun Town Plaza Section, (from Yan Oi Town Square to Tuen Hing Road).

Wong Chu Road Section

1.4.2 A new Kowloon bound carriageway extending from Tuen Hing Road is proposed to streamline the traffic by eliminating the weaving movement from Tuen Hing Road towards TMR mainline (see *Drawing No. 9C705/102*), thus improving the road safety. This new carriageway composes of an at-grade road section and a flyover, namely S1 as shown in *Drawing Nos. 9C705/101 & 102*.

1.4.3 The Yuen Long bound carriageway will be widened towards the planter area for one additional traffic lane. .

Tuen Mun Town Plaza Section

1.4.4 At Tuen Mun Town Plaza, the Kowloon bound and Yuen Long bound carriageways will be widened by reducing the island width and removal of the column cladding (see *Drawing No. 9C705/103*).

1.4.5 Local widening of the Kowloon and Yuen Long bound will be carried out for provision of an additional standard lane width and marginal strip (see *Drawing Nos. 9C705/103 & 104*). If necessary, provision of extensive noise enclosure or noise barrier will be required.

1.5 Number and Types of Designated Project to be covered by the Project Profile

- 1.5.1 The Project involves (i) Widening of Tuen Mun Road from dual 2-lanes to dual 3-lanes at Wong Chu Road Section (from Wong Chu Road Interchange to Tuen Hing Road) and Tuen Mun Town Plaza Section (from Yan Oi Town Square to Tuen Hing Road); and (ii) construction of a new flyover S1 from Tsing Hoi Circuit to Tuen Mun Road Kowloon bound which is classified as District Distributor Road. These tasks are classified as designated projects under Part I Category A.1 of Schedule 2 of the Environmental Impact Assessment Ordinance. Environmental permit is required for the construction and operation of these works.
- 1.5.2 This Project Profile is used for application for an EIA Study Brief for the Project.

1.6 Name and Telephone numbers of Contact Persons

- 1.6.1 All queries regarding the project can be addressed to: -

Mr. Peter Morgan
(CE/MW2-2, MWPMO)

6th Floor, Ho Man Tin Government Offices,
88 Chung Hau Street, Ho Man Tin, Kowloon

Office No. 2762 3622

2. OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

2.1 Project Planning and Implementation

2.1.1 The construction works is planned to be commenced in the end of 2008 for completion by March 2010.

2.2 Project Timetable

2.2.1 A tentative implementation programme is shown as below:-

	2006				2007				2008				2009				2010		
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3
I, D & C Stage																			
EIA Study and EIAO Design																			
Statutory Procedures																			
Tender Stage																			
Construction Stage																			

2.2.2 The above programme is tentative and subject to change by the Project Proponent as the project proceeds.

2.3 Interaction with Other Projects

2.3.1 The Project may have interaction with the following projects during the construction of the TMRTCS.

- (a) Deep Bay Link PWP item No. 736TH;
- (b) Flushing water supply to Northwest New Territories (NWNT) PWP item No. 9045WS;
- (c) Reconstruction and Improvement of TMR PWP item No. 6476TH; and
- (d) Tuen Mun Eastern and Western Bypass Feasibility Studies.

3. POSSIBLE IMPACT ON THE ENVIRONMENT

The likely environmental impacts of the proposed works that may arise during both construction and operational phases are described below:

3.1 Air Quality

3.1.1 Construction dust would be generated during construction of the new slip road, demolition of existing footbridges and construction of noise enclosure. Potential dust impact would be anticipated on the ASRs located in the vicinity of the works sites area.

3.1.2 The potential emission sources during operational phase would be the vehicle exhaust emission along the TMR.

3.2 Noise

3.2.1 Noise impacts arising from construction of TMRTCS would be expected at the sensitive receivers in the vicinity of the work sites. Major noise sources include earthworks, bridge construction and road surfacing.

3.2.2 The operational traffic noise impact would be a major concern to the NSRs in the vicinity of the TMRTCS. It is noted that some receivers are located close to the route and would expose to noise levels exceeding the traffic noise criteria of 70 dB(A) for residential developments and 65 dB(A) for educational institutes.

3.3 Ecology

3.3.1 The option will involve set back of the existing central median and footpaths at both sides of TMRTCS, the major ecology impact would be the direct loss of habitats associated with planted tree species and significant amount of tree felling / transplanting.

3.3.2 The construction activities may incur indirect impacts to the works areas and adjacent habitats / wildlife. The wildlife included an active egret site along the Tuen Mun Nullah. The location of the egret site is shown in ***Drawing No. 9C705/104***. Indirect impacts would include:

- Noise disturbance from construction work
- Air (dust) pollution
- Trampling of habitats / vegetation
- Littering
- Refuse generated by the workers
- Generation of construction waste

3.3.3 The habitat of the Study Area is mostly developed and plantation with common species. The operation of the Project would not cause significant ecological impact.

3.4 Water Quality

3.4.1 Potential sources of water quality impact associated with construction phase would include site runoff and drainage, runoff from general construction activities and sewage effluent produced by on-site workforce.

3.4.2 The potential water quality impacts during operation phase would be the discharges of surface runoff to Tuen Mun Nullah. The surface runoff may contain minimal amounts of oil, grease and grit that may cause water quality impacts to the stream if uncontrolled.

3.4.3 The new road drainage system would design with gullies to trap the suspended silt within the surface runoff. In this connection, it is unlikely to produce any quantifiable adverse effects on Water Control Zones (WCZs).

3.5 Construction Waste Management

3.5.1 Wastes generated by the construction activities include C&D materials, milled road surfacing, general refuse from the workforce and chemical waste from any maintenance of construction plant and equipment. Waste management would be the contractor's responsibility to ensure that all wastes produced during the construction of the Project are handled, stored and disposed of in accordance with good waste management practices and EPD's regulations and requirements.

3.6 Landscape & Visual

3.6.1 The adjacent high-rise housing estates and open space along Tuen Mun Road widening would be susceptible to significant landscape and visual impacts.

3.6.2 In order to satisfy the EIAO requirement with respect to traffic noise limit, noise enclosure/ barrier might be constructed along the TMRTCS and the proposed slip road. These noise mitigation measures would become an eye-sore to residents along TMRTCS and substantial impact to visual sensitive receivers would be anticipated.

3.7 Hazard to Life

3.7.1 The consultation zone of Tuen Mun Water Treatment Works PHI is 400 m. The separation distance between the boundary of Tuen Mun Water Treatment Works and the Project boundary is more than 1km, therefore, hazard impact from the Tuen Mun Water Treatment Works PHI would not be expected on the Project.

4. MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

4.1 Sensitive Receivers

4.1.1 Existing air and noise sensitive receivers during both construction and operation stages were identified as follows (see *Drawing No. 9C705/105*):

Receiver No.	Location	Land Use
DIC	Dragon Inn Court	Residential
SSE	Sam Shing Estate	Residential
HFG	Hanford Garden	Residential
KFG	Kam Fai Garden	Residential
HG	Harvest Garden	Residential
SST	Sam Shing Temple	OU
ABH	Chung Sing Benevolent Society Mrs Aw Boon Haw Secondary School	Education Institution
SMS	Semple Memorial Secondary School	Education Institution
SLS	Siu Lun Sports Ground	OU
TSP	Tsing Sin Playground	OU
TTP	Tung Wah Group of Hospitals Tai Tung Pui Social Service Building	GIC
HKG	Hong King Garden	Residential
JCP	JC Place	Residential
HTG	Hoi Tak Garden	Residential
RG	Rainbow Garden	Residential
TA	Hong Kong Taoist Association Yuen Yuen Primary School	Education Institution
TWSP	Tsing Wah Soccer Pitch	OU
CLFY	Chi Lok Fa Yuen	Residential
TFH	On Ting Estate (Ting Fuk House)	Residential
LCKP	Lui Cheung Kwong Lutheran Primary School	Education Institution
STF	Shun Tak Fraternal Association Leung Kau Kui College	Education Institution
LCK	Lui Cheung Kwong Lutheran College	Education Institution
SOC	Siu On Court	Residential
LBB	Lai Bo Building	Residential
LPB	Lee Po Building	Residential
TKB	Tuen King Building	Residential
TMF	Tuen Mun Fa Yuen	Residential
TMT	Tuen Mun Town Hall	GIC
	Tsing Hoi Playground	OU
LWF	Yan Oi Tong Madam Lau Wong Fat Primary School	Education Institution

Receiver No.	Location	Land Use
NTM	New Town Mansion	Residential
YOP	Yan Oi Polyclinic	GIC
WG	Waldorf Garden	Residential
TMTP	Tuen Mun Town Plaza	Residential
MON	Monastery	OU
MSB	Man Shing Building	Residential
PC	Park Court	Residential
FHB	Fu Hang Building	Residential
FM	Forward Mansion	Residential
SC	Sun Court	Residential
HTB	Hing Tai Building	Residential
YOT	Yan Oi Tong Community and Indoor Sports Centre	GIC
SHM	Tuen Mun San Hui Market Roof Top Playground	OU
OC	Orchid Court	Residential
GC	Golden Court	Residential
FEC	Far East Consortium Tuen Mun Central Building	Residential
RDG	Rose Dale Garden	Residential
KHB	Kam Hing Building	Residential
PEN	PEN Church of Hong Kong Sheltered Workshops and Hostel	GIC
YLB	Yik Lee Building	Residential
EC	Eldo Court	Residential
TMC	Tuen Mun Church	GIC
DST	ELCHK Tuen Mun Lutheran Church Dzwen Sheng Tang Kindergarden	Education Institution
PAC	Parkview Court	Residential

4.1.2 No key issues of water quality concern have been identified since no water sensitive receivers have been identified in the vicinity of the proposed works areas.

4.1.3 Tuen Mun Road and its traffic is the dominant visual element for various residents and public open space users along the Road.

4.2 Major Elements of the Surrounding Environment

4.2.1 The Study Area for traffic improvement of TMRTCS is considered as an urban area. The area comprises residential buildings, educational institution, shopping complex and open space. Sensitive receivers such as residential and educational uses are identified at both sides of the alignment.

5. ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED

5.1 Air Quality

5.1.1 With the implementation of proper dust control and suppression measures as stipulated in the Air Pollution Control (Construction Dust) Regulation, the dust impact to ASRs should be within an acceptable level.

5.1.2 No significant increase in traffic emission would be expected during the operational phase. The impacts would be expected to be acceptable.

5.2 Noise

5.2.1 The following mitigation measures should be considered to alleviate the noise impacts during construction of TMRTCS.

- Use of quiet powered mechanical equipments.
- Erection of noise barrier for noisy equipment/activities.
- Intermittent noisy activities should be carefully planned in order to minimize exposure of nearby NSRs to high levels of construction noise.
- Idle equipment should be turned off or throttled down.
- Noisy equipment should be properly maintained and used no more often than is necessary.
- Construction activities should be carefully planned so that parallel operation of several sets of equipment in the vicinity of NSRs be avoided.

5.2.2 To mitigate the traffic noise impact during operational stage, cantilevered noise barriers or enclosure should be constructed under this project.

5.3 Ecology

5.3.1 Construction noise, effluent discharge and waste deposition would pose impact to the nearby habitats/wildlife. With the implementation of proper site tidiness and housekeeping, adverse ecological impacts could be avoided. Sewage and general refuse generated from work force should be collected and treated within the construction site. Works area should be clearly demarcated by site hoarding for confining the construction dust and noise. Effective mitigation measures such as implementation of temporary/ movable noise barrier discussed in Section 5.2 would minimize the noise impacts on the egret site.

5.3.2 The following measures are also recommended to be implemented to avoid, minimise and compensate for potential ecological impacts.

- Stockpiling within Works Area and its associated access routes should be selected on existing disturbed land and to minimise disturbance to vegetation.
- Construction activities should be restricted within the clearly demarcated site areas.
- The site areas should be reinstated immediately after completion of construction work.

5.4 Water Quality

5.4.1 Water quality impact would be readily mitigated with the adoption of good site management practices following the guidelines of Professional Persons Environment Consultative Committee Practice Note (ProPECC PN) 1/94 “Construction Site Drainage”, published by EPD.

5.4.2 For the operation phase, a surface water drainage system would be provided to collect runoff during rainfall.

5.5 Construction Wastes

5.5.1 Standard waste management measures and good site practices in waste handling, collection, transportation and disposal should be implemented. Both on site and off site reuse of excavated inert materials would be encouraged. Useful C&D materials would be recycled where practicable and disposal at landfill sites would be considered as a last resort. Chemical wastes would be handled in accordance with the “Code of Practice on the Packaging, Handling and Storage of Chemical Wastes”, published by EPD.

5.6 Cultural Heritage

5.6.1 There is no any structure of the cultural heritage value located in the vicinity of construction site, no cultural heritage impact would be expected.

5.7 Landscape and Visual

5.7.1 During construction phase, the potential landscape and visual impact mitigation measures includes:-

- Avoidance of impacts on adjacent landscape by minimizing temporary works areas;
- Avoidance of impacts on existing matures trees; and
- Temporary reprovision of open space should the existing public open area be affected by construction works.
- Hydroseeding and tree planting of disturbed areas if the trees were cut down that proved unavoidable.
- A compensatory planting scheme should be provided where tree felling required.

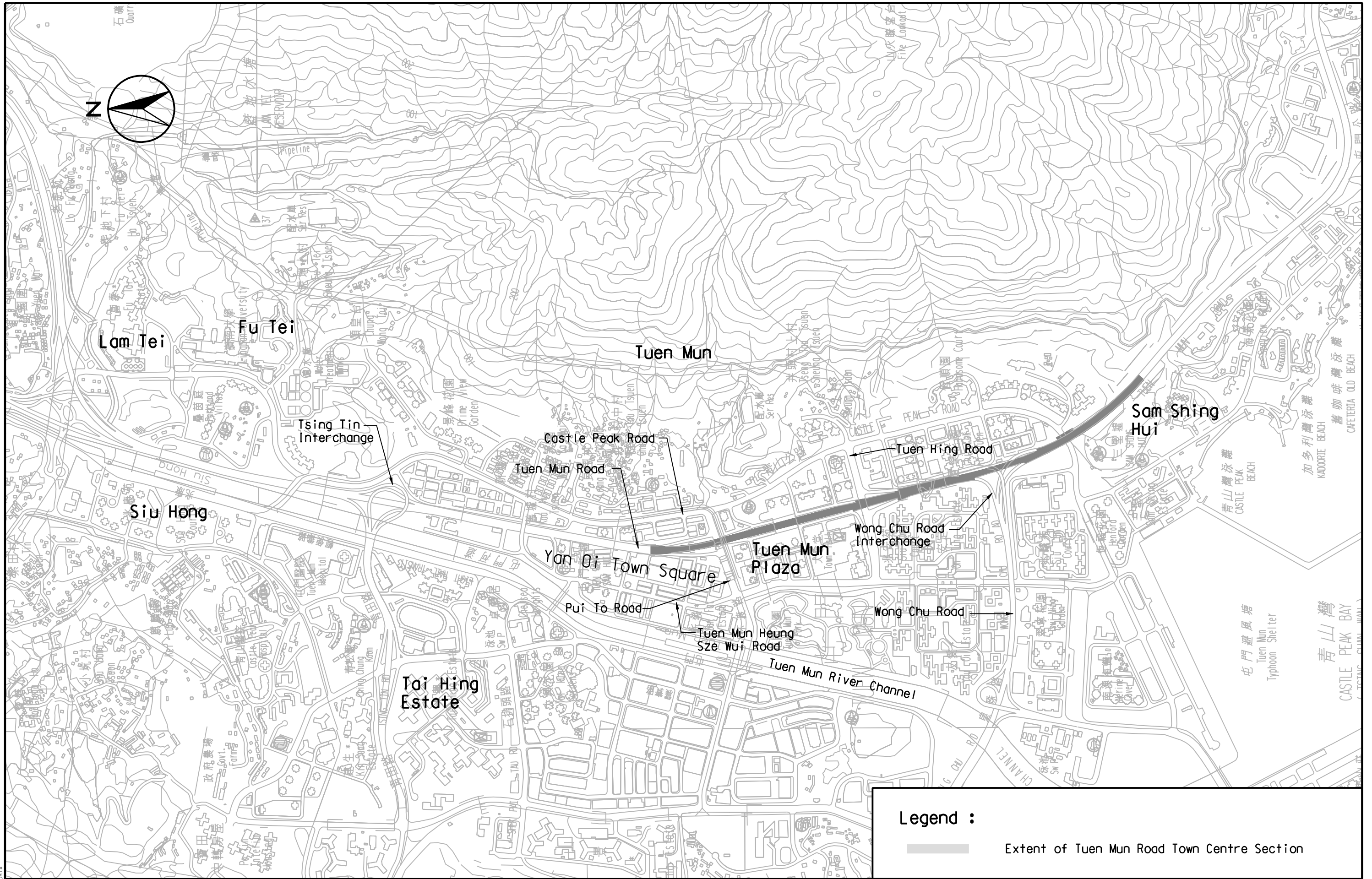
5.7.2 During operation phase, the following mitigation measures are recommenced to be implemented:-

- Provide landscape behind the noise enclosure; and

6. USE OF PREVIOUSLY APPROVED EIA REPORTS

No previously approved EIA report is referred for proposed Project.

Drawings



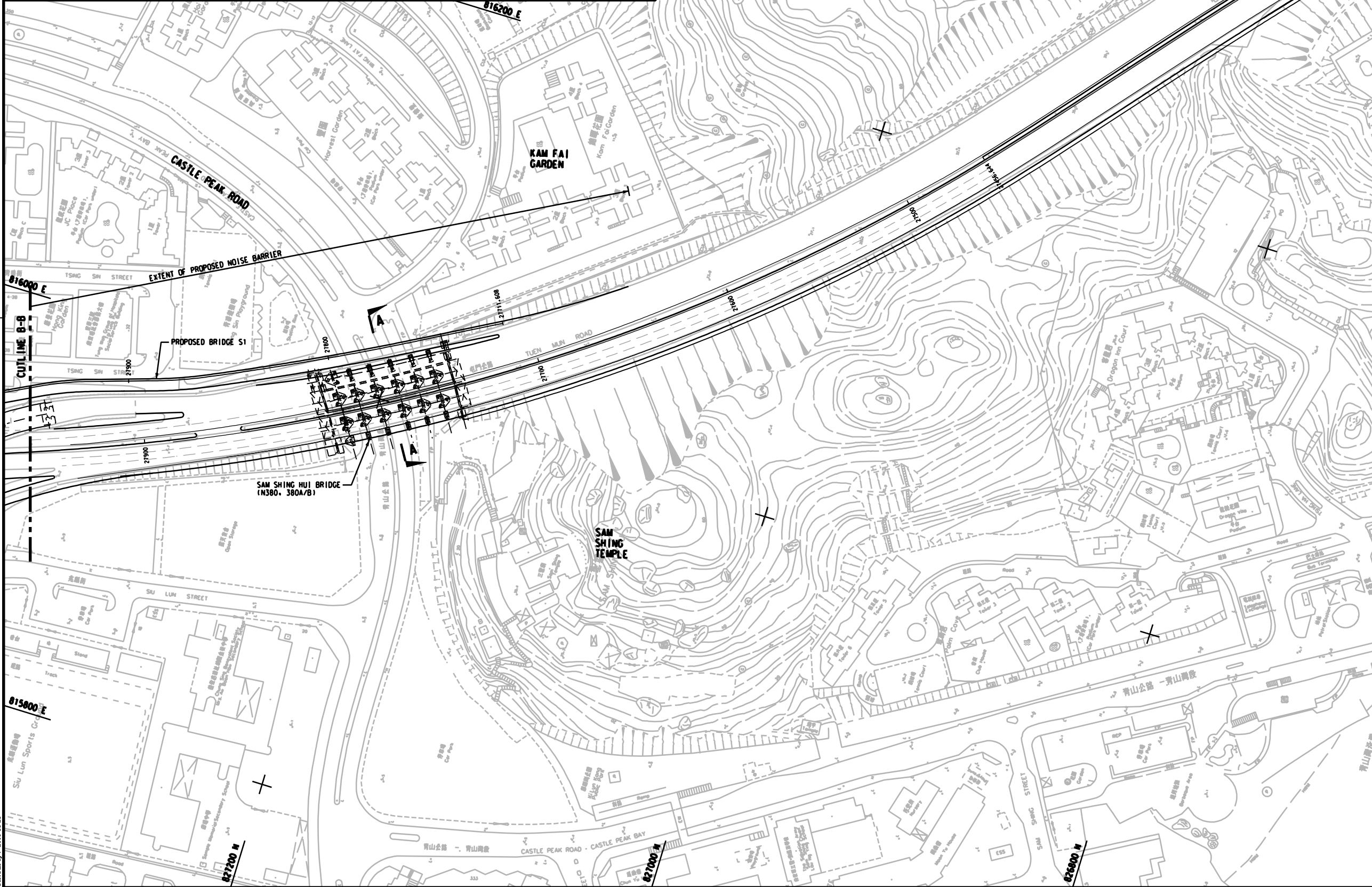
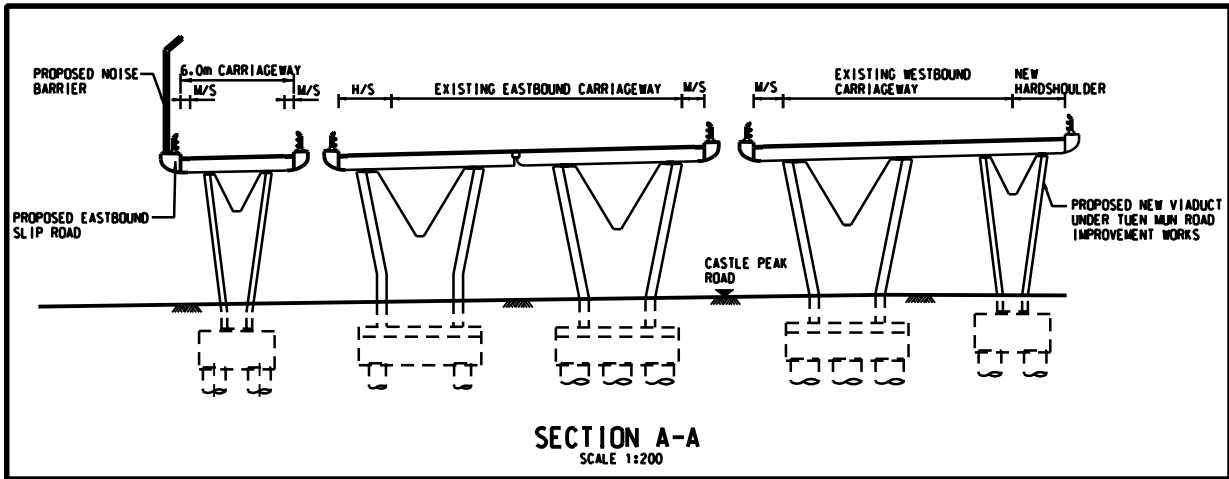
Legend :

— Extent of Tuen Mun Road Town Centre Section

AGREEMENT NO. CE38/2005 (HY)
TRAFFIC IMPROVEMENTS TO TUEN MUN ROAD TOWN CENTRE SECTION - FEASIBILITY STUDY

TUEN MUN ROAD TOWN CENTRE SECTION LAYOUT PLAN

SCALE	1:12000	DATE	DEC. 2005
CHECK	J.L.	DRAWN	T.H.
JOB NO.	9C705	FIGURE NO.	9C705/001
		REV	-

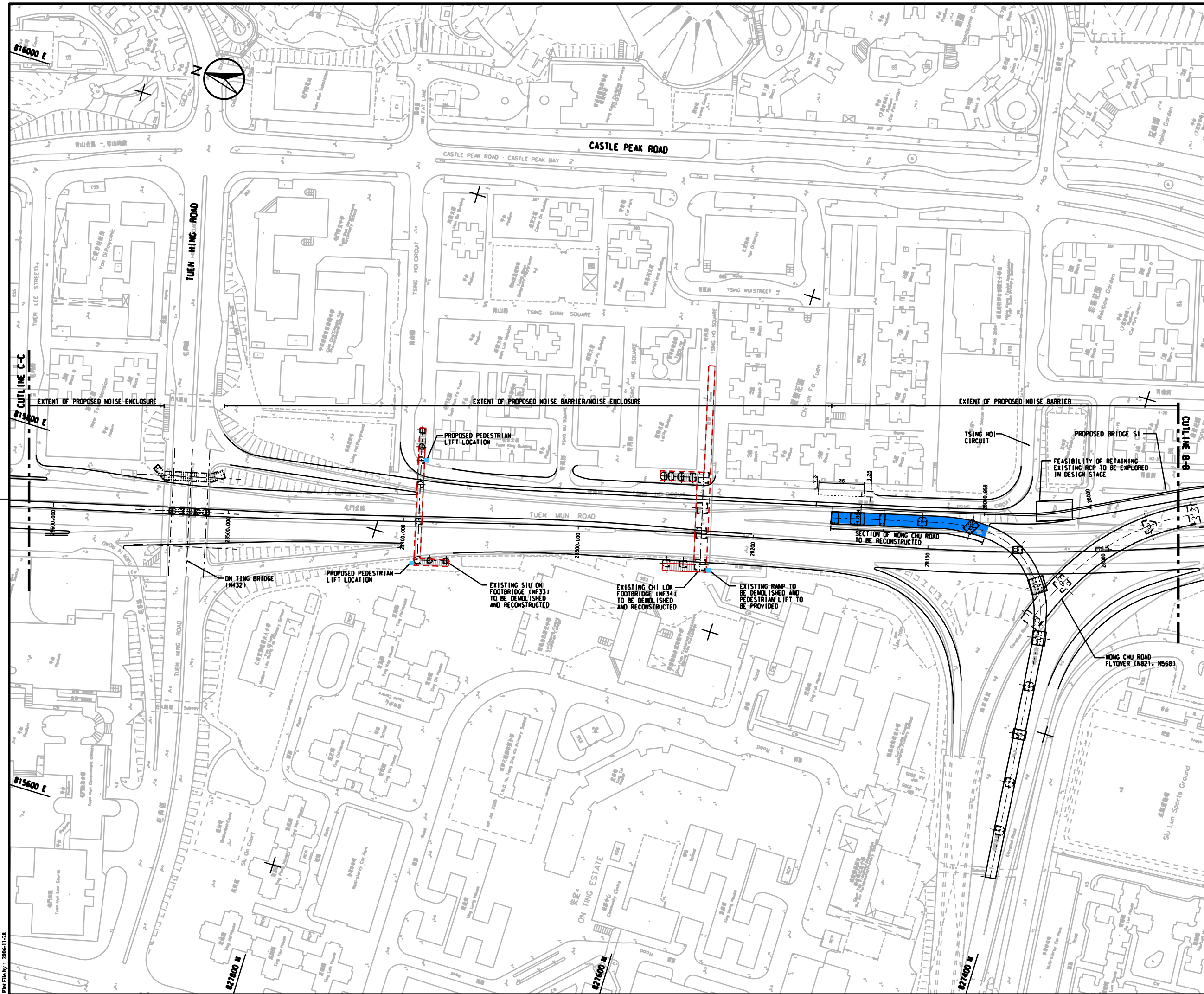


LEGEND:

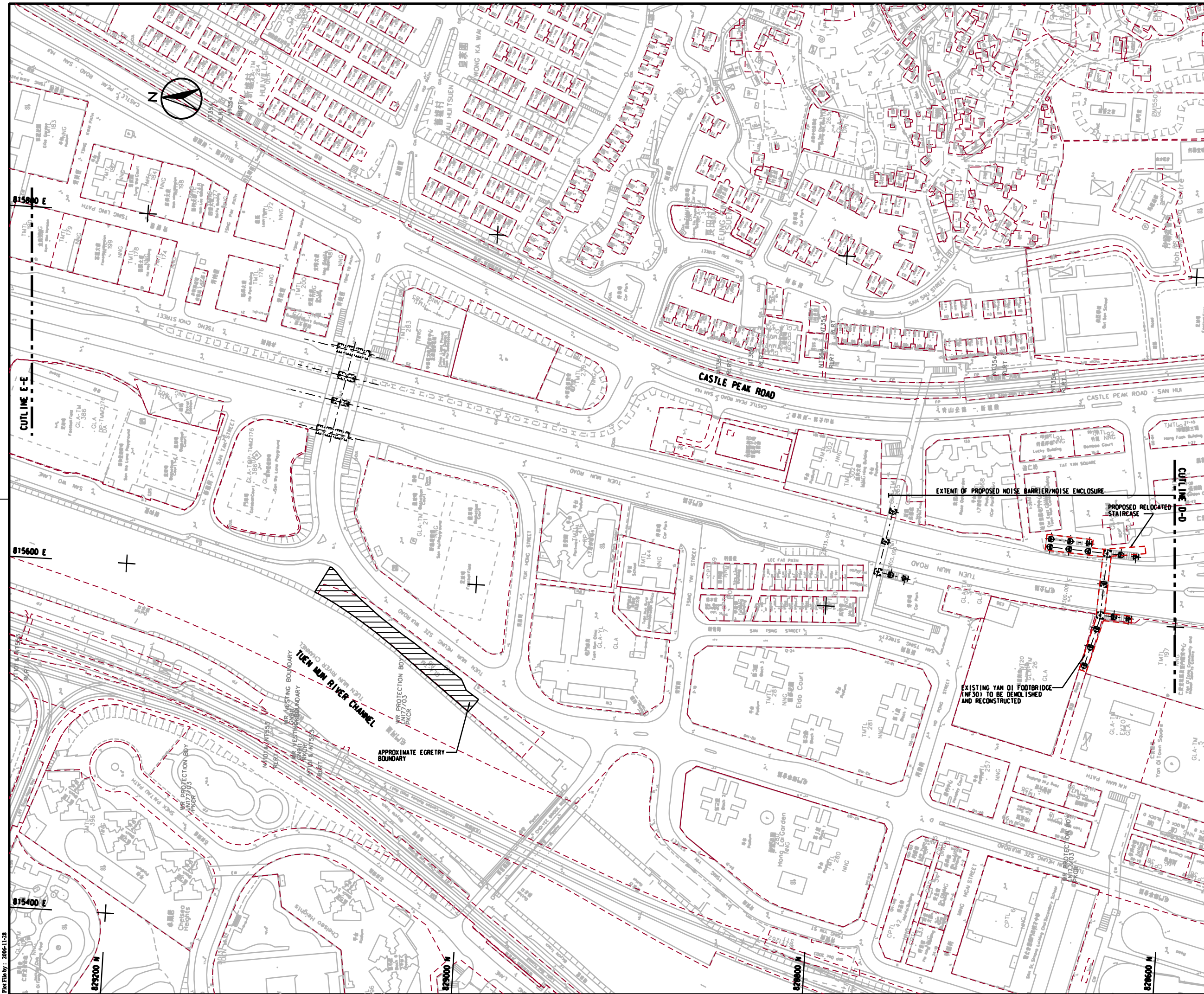
- PROPOSED FOOTBRIDGE RELOCATION LAYOUT
- PROPOSED PEDESTRIAN LIFT

FIRST ISSUE			
REV.	DESCRIPTION	DATE	BY
TRAFFIC IMPROVEMENTS TO TUEN MUN ROAD TOWN CENTRE SECTION FEASIBILITY STUDY			
LAYOUT PLAN (DUAL 3-LANE WIDENING OPTION)			
SHEET 1 OF 4			
MAUNSELL AECOM Maunsell Consultants Asia Ltd. 茂盛(亞洲)工程顧問有限公司			
DRG.NO. 圖紙編號		9C705/101	
DESIGNED BY 設計人	J.L.	CONTRACT NO. 合約編號	P. 07 - APPROVED 審核人
DRAWN BY 繪圖人		CE38/2005 (HY)	
SCALE 比例		STATUS 狀態	
A1 1:1000		PRELIMINARY	
DIMENSIONS ARE IN METRES 尺寸單位		© COPYRIGHT RESERVED 版權所有	

Plot File by: 2006-11-28

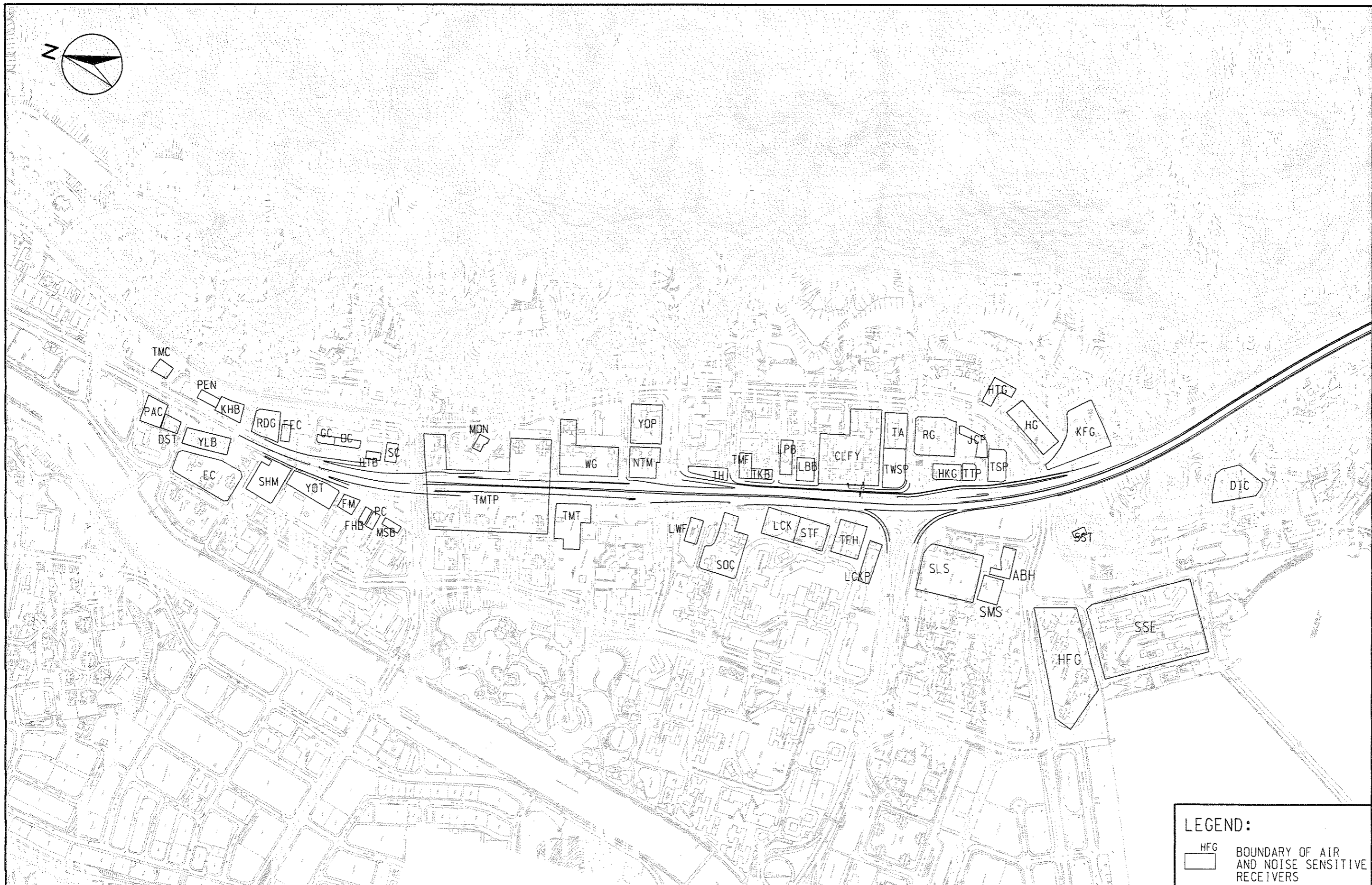
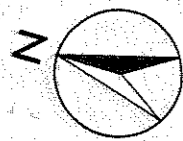


FIRST ISSUE			
REV.	DESCRIPTION	DATE	BY
HIGHWAYS DEPARTMENT 主要工程處 Major Works Project Management Office			
TRAFFIC IMPROVEMENTS TO TUEN MUN ROAD TOWN CENTRE SECTION FEASIBILITY STUDY			
LAYOUT PLAN (DUAL 3-LANE WIDENING OPTION)			
SHEET 2 OF 4			
MAUNSELL AECOM Maunsell Consultants Asia Ltd. 茂盛(亞洲)工程顧問有限公司			
DRG.NO.	9C705/102		
DESIGNED BY	J.L.	CONTRACT NO.	CE38/2005 (HY)
SCALE	A1 1:1000	STATUS	PRELIMINARY
DIMENSIONS ARE IN METRES		COPYRIGHT RESERVED	



FIRST ISSUE			
REV.	DESCRIPTION	DATE	BY
HIGHWAYS DEPARTMENT 主要工程署 Major Works Project Management Office			
TRAFFIC IMPROVEMENTS TO TUEN MUN ROAD TOWN CENTRE SECTION FEASIBILITY STUDY			
LAYOUT PLAN (DUAL 3-LANE WIDENING OPTION)			
SHEET 4 OF 4			
MAUNSELL AECOM Maunsel Consultants Asia Ltd. 茂盛(亞洲)工程顧問有限公司			
DRG.NO.	9C705/104		
DESIGNED BY	J.L.	CONTRACT NO.	CE38/2005 (HY)
SCALE	A1 1:1000	STATUS	PRELIMINARY
DIMENSIONS ARE IN METRES		COPYRIGHT RESERVED	

Plot File by: 2006-11-28



LEGEND:

HFG □	BOUNDARY OF AIR AND NOISE SENSITIVE RECEIVERS
----------	---

MAUNSELL AECOM
Maunsell Consultants Asia Ltd

AGREEMENT NO. CE38/2005 (HY)
TRAFFIC IMPROVEMENTS TO TUEN MUN ROAD TOWN CENTRE SECTION - FEASIBILITY STUDY

LOCATION OF REPRESENTATIVE AIR AND NOISE SENSITIVE RECEIVERS

SCALE	A3 1:7000	DATE	NOV 06
CHECK	AYMC	DRAWN	SPM
JOB NO.	A12405	DRAWING No.	9C705/105
		REV	-