Development of Anderson Road Quarry site
Road Improvement Works

Project Profile

Civil Engineering and Development Department

January 2014

Project Profile

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FIGURES

1. BASIC INFORMATION

1.1 Project Title

1.1.1 Development of Anderson Road Quarry site – Road Improvement Works

1.2 Purpose and Nature of Project

1.2.1 Road improvement schemes were recommended in the Planning Study on Future Land Use at Anderson Road Quarry (the Planning Study) under the Consultancy agreement No. CE4/2010(TP) to improve the future traffic operation and to cater for the additional traffic demand from the 25,000 population at the Development of Anderson Road Quarry site (ARQ Development). The location of ARQ Development is shown in **Figures No. 227724/E/0030**.

1.2.2 The proposed road improvement schemes involve upgrade of several junctions including:

- Junction of (J/O) Lin Tak Road and Sau Mau Ping Road;
- J/O Clear Water Bay Road and Road L1 of the Development at Anderson Road (DAR); and
- A new merging lane at New Clear Water Bay Road near Shun Lee Tsuen Road.

1.3 Name of Project Proponent

1.3.1 New Territories East Development Office of Civil Engineering and Development Department, the Government of the Hong Kong Special Administrative Region.

1.4 Location and Scale of Project

1.4.1 The location plan of the road improvement schemes is shown in **Figures No. 227724/E/0031-0033**.

1.4.2 The following is a summary of the proposed improvement schemes:

- Lin Tak Road will be widened to single-2 lane with 2 nos. of long lay-by at each bound of the road to allow for kerbside activities.
- A new flyover providing a new traffic lane for the traffic from Lin Tak Road to Sau Mau Ping Road. It overpasses the J/O Sau Mau Ping Road, Lin Tak Road and Tseung Kwan O Road and its associated slip roads.
- J/O Clear Water Bay Road and Road L1 will be enhanced. The right-turn movement from eastbound carriageway of Clear Water Bay Road will be banned but a new U-turn facility will be implemented at the downstream location.

- The merging arrangement at New Clear Water Bay Road near Shun Lee Tsuen Road will be revised. A short section of New Clear Water Bay Road will be widened from one lane to two lanes, and a new slip road and merging lane extended from the existing Shun Lee Tsuen Road will be constructed and merging to the westbound carriageway of New Clear Water Bay Road.

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

*J/O Lin Tak Road and Sau Mau Ping Road (**Figures No. 227724/E/0031 & 0033**)*

1.5.1 The scope of the proposed road improvement works at J/O Lin Tak Road and Sau Mau Ping Road include:

(1) Widening of Lin Tak Road to single-2 lane with 2 nos. of long lay-by at each bound of the road to allow for kerb side activities (rock slope excavation is required for the road widening works).

(2) Construction of a new flyover overpassing the junction of Sau Mau Ping Road, Lin Tak Road and Tseung Kwan O Road for the traffic from Lin Tak Road to Sau Mau Ping Road.

1.5.2 One of the key elements of this proposed works is to construct a new vehicular bridge connecting Lin Tak Road and Sau Mau Ping Road and across Tseung Kwan O Road. Since both Lin Tak Road and Sau Mau Ping Road are classified as District Distributor (DD), this proposed new vehicular bridge is also a District Distributor and its construction is therefore a Designated Project (DP) under Item A.1 of Schedule 2 of the EIAO:

> *"Item A.1 – A road which is an expressway, trunk road, primary distributor road or district distributor road including new roads, and major extensions or improvements to existing road."*

*J/O Clear Water Bay Road and Road L1 of DAR (**Figures No. 227724/E/0031 & 0032**)*

1.5.3 The scope of the proposed works include a new westbound carriageway of the Clear Water Bay Road and a new U-turn facility with associated cutting of existing slopes with heavy vegetation.

1.5.4 One of the key elements of the proposed works is to construct a new road section (approximately 200m long) on the westbound carriageway of Clear Water Bay Road to replace the existing road section. Since Clear Water Bay Road is a Primary

Distributor, this proposed new road section is also a Primary Distributor and its construction is therefore a DP under Item A.1 of Schedule 2 of the EIAO.

A new merging lane at New Clear Water Bay Road near Shun Lee Tsuen Road ***(Figures No. 227724/E/0031 & 0032)***

1.5.5 The scope of the proposed works is to widen a section of 130m length of the existing New Clear Water Bay Road westbound carriageway opposite to Shun Lee Estate from one lane to two lanes, and to construct a new Shun Lee Tsuen Road slip road within the area of an existing slope to increase the merging length and to improve the sight line for traffic from Shun Lee Tsuen Road. Slope works and retaining walls are required for the new slip road.

1.5.6 One of the key elements of the proposed works is to construct a new slip road (approximately 350m long) and merging lane (approximately 170m long) extending from the existing Shun Lee Tsuen Road and merging to the westbound carriageway of New Clear Water Bay Road. Since both Shun Lee Tsuen Road and New Clear Water Bay Road are Primary Distributors, the proposed new merging lane is also a Primary Distributor and its construction is therefore a DP under Item A.1 of Schedule 2 of the EIAO.

1.6 Name and Telephone Number of Contact Person

1.6.1 Contact Person is: -

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Fax No.: 2721 8630

2. OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

2.1 Project Planning and Implementation

2.1.1 The Project Proponent (PP) will engage consultants to ascertain the feasibility of implementing the proposed road improvement works recommended under the Planning Study.

2.1.2 Specialist Environmental Consultants will be employed for undertaking the Environmental Impact Assessment (EIA) study according to the EIA Study Brief to be issued by the Director of Environmental Protection and to respond on behalf of the PP on issues related to the EIA.

2.2 Project Timetable

2.2.1 The proposed construction periods for the road improvement works are given below:

- J/O Lin Tak Road and Sau Mau Ping Road: **mid-2017 to mid-2022**;
- J/O Clear Water Bay Road and Road L1 of DAR: **mid-2017 to mid-2021**; and
- New merging lane at New Clear Water Bay Road near Shun Lee Tsuen Road: **mid-2017 to end-2019**.

2.3 Interaction with Other Projects

2.1.3 ARQ Development with a proposed construction period from 2016 to 2026 is identified as one potential concurrent project (as given in Table 2.1 below). Any cumulative impacts due to the concurrent project during both construction and operational phases of the Project would be identified and assessed accordingly. The list of potential concurrent project will be reviewed and updated during the EIA study.

Table 2.1: List of concurrent project

Concurrent Project	Construction Period
Development of Anderson Road Quarry site	2016 – 2026

3. POSSIBLE IMPACT ON THE ENVIRONMENT

3.1 Air Quality

Construction Impacts

3.1.1 Dust generation is the major potential air quality impact during the construction phase. It would arise from construction activities such as material handling, excavation, vehicle movement and erosion of unpaved area and stockpiles. These activities would potentially pose adverse air quality impacts to the nearby air sensitive receivers (ASRs).

Operational Impacts

3.1.2 Vehicular emissions would be a potential air quality impact during the operational phase of the Project. The key air pollutants of concern include Nitrogen Dioxide (NO_2) and suspended particulates.

3.2 Noise

Construction Impacts

3.2.1 The source of potential noise nuisance during construction is primarily from the use of powered mechanical equipment on site. The construction activities would involve the use of plant for excavation, road widening and associated works, etc. which have the potential to pose adverse noise impacts to the surrounding noise sensitive receivers (NSRs).

Operational Impacts

3.2.2 Road traffic noise would be the major noise source during the operational phase.

3.3 Water Quality

3.3.1 Potential water pollution sources during the construction phase include site runoff, sewage from on-site sanitary facilities and accidental spillage of chemicals.

3.4 Waste

3.4.1 The major waste sources that would arise from the proposed road improvement works include construction and demolition (C&D) materials and waste, chemical waste and general refuse during the construction phase. The timing and quantities of waste to be generated will depend on the construction programme of the works.

3.5 Landfill Gas

3.5.1 There are three closed landfill sites in the vicinity of the Project including Ma Yau Tong West Landfill, Ma Yau Tong Central Landfill and Jordan Valley Landfill (as shown in **Figures No. 227724/E/0032-0033**). Since the proposed works at J/O Lin Tak Road and Sau Mau Ping Road falls within the consultation zones of both the Ma Yau Tong West and Ma Yau Tong Central Landfills, and the proposed works at New Clear Water Bay Road near Shun Lee Tsuen Road falls within the consultation zone of the Jordan Valley Landfill, a Qualitative Landfill Gas Hazard Assessment (QLFGHA) will be required in the EIA study.

3.6 Ecology

3.6.1 The Project mainly covers existing roads, rock slopes, vegetated slopes and other developed areas. The civil works of the three proposed road improvement schemes, together with some slope upgrading works, will be principally concentrated on the existing roads, urban structures, rock slopes and exotic plantations on man-made slopes. Natural habitats including secondary woodlands on natural slopes and man-made slopes are situated along the hillside to the south of the Clear Water Bay Road under the road improvement scheme at J/O Clear Water Bay Road and Road L1 of DAR. These secondary woodlands are located at the fringe of the mature hillside secondary woodland to the northwest of Tai Sheung Tok Hill, and may share similar floristic characteristic but simpler floristic structure than the nearby mature woodland. Another natural habitat includes natural watercourses situated close to the northeast side of the proposed works area under the improvement scheme at J/O Lin Tak Road and Sau Mau Ping Road.

3.6.2 The potential ecological impact to the existing urban habitats would be considered negligible, while the potential impacts and disturbance to the secondary woodlands and the natural watercourses arising from the three road improvement schemes will be associated with:

Construction Phase:

- Direct habitat loss and habitat fragmentation due to slope upgrading works;
- Disturbance to wildlife and vegetation due to possible air pollution, water pollution, noise and human activities;
- Vegetation clearance;
- Toxic pollutants during construction;

- Soil compaction; and
- Impact to natural watercourse in terms of sedimentation from soil excavation, release of contaminants during excavation and surface run-off from construction sites during construction.

Operation Phase:

- Habitat loss/ disturbance in the natural habitat due to excavation and road improvement schemes; and
- Disturbance to wildlife and vegetation due to possible air pollution, water pollution, noise and human activities during operation.

3.6.3 Impact to the natural watercourses and water quality will be avoided as far as practical by good site practices.

3.7 Landscape and Visual

Construction Phase

3.7.1 During the construction phase, the potential landscape and visual impacts are likely to result from the proposed road works, removal of existing vegetation, stockpiling of construction and demolition materials, including existing topsoil for reinstatement works, and storage of construction equipment and plants.

Operational Phase

3.7.2 The Project itself may lead to potential landscape and visual impact through visual intrusion and/ or obstruction and also changes to the existing natural landscape.

4. MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

4.1 Existing Environment

4.1.1 The proposed road improvement works are located at:

- J/O Lin Tak Road and Sau Mau Ping Road;
- J/O Clear Water Bay Road and Road L1 of DAR; and
- Merging lane at New Clear Water Bay Road near Shun Lee Tsuen Road.

4.1.2 These junctions/ roads are located within developed area and surrounded by a number of housing estates including Shun Chi Court, Shun Lee Estate, Shun On Estate, Po Tat Estate and Hing Tin Estate. The existing and planned sensitive receivers are listed in **Table 4.1** and shown in **Figures 227724/E/0032-0033**. Any other sensitive receivers to be identified during the EIA study will also be considered.

Table 4.1: Representative sensitive receivers in the vicinity of the Project

Description	**Nature of Sensitive Receiver[1]**	**Type of Sensitive Receiver**
Good Hope School	E	ASR, NSR
Shun Lee Estate	R	ASR, NSR
Shun Lee Disciplined Services Quarters	R	ASR, NSR
Shun Lee Tsuen Playground	P	ASR
Shun Lee Tsuen Park	P	ASR
Shun Chi Court	R	ASR, NSR
Kwun Tong Government Secondary School	E	ASR, NSR
Sienna Garden	R	ASR, NSR
Anderson Road No. 11 – Leighton Pavillion	R	ASR, NSR
Shun On Estate	R	ASR, NSR
Sau Mau Ping South Estate	R	ASR, NSR
Po Tat Estate	R	ASR, NSR
Hong Wah Court	R	ASR, NSR
Hing Tin Estate	R	ASR, NSR
St. Edward's Catholic Primary School	E	ASR, NSR
Lam Tin Estate	R	ASR, NSR
Lam Tin Park	P	ASR

Note:

[1] R – Residential; E – Education; P – Recreational/ Park

5. ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED IN THE DESIGN AND ANY FURTHER ENVIRONMENTAL IMPLICATIONS

5.1 General

5.1.1 The EIA study will investigate those environmental impacts and propose the appropriate mitigation measures with the intention that all works recommended by the Project would be environmentally acceptable and cost effective. The residual impacts, if any, would be confined with the allowable limits. Environmental monitoring and auditing of the potential impacts that may arise from implementation of the works proposed by the Project would be provided for the construction and operational phases. Subject to the findings of the EIA study, the following mitigation measures will be incorporated in the design and construction of the Project.

5.2 Air quality

Construction Phase

5.2.1 In order to prevent adverse impacts on air quality, the control measures stipulated in the Air Pollution Control (Construction Dust) Regulations would be implemented wherever applicable to limit the dust emissions from the site. Subject to investigation, the following mitigation measures will be considered during the construction period to minimize impacts on air quality on nearby ASRs.

- Stockpiles of dusty material will not extend beyond site boundaries;
- In the process of material handling, any material which has the potential to create dust will be treated with water or sprayed with a wetting agent where practicable;
- Stockpiles of sand and aggregate will be enclosed on three sides and water sprays will be used to dampen stored materials and when receiving raw material;
- The site will be frequently cleaned and watered to minimise fugitive dust emissions;
- Motorised vehicles on the site will be restricted to a maximum speed of 15 km/hr and shall be confined to designated haul routes which will be paved or surfaced with hardcore; and
- Use of appropriate dust suppression measures.

Operational Phase

5.2.2 Mitigation measures for potential air quality impact during the operational phase will be subject to further assessment.

5.3 Noise

Construction Noise

5.3.1 In order to mitigate the potential adverse noise impacts arise from the construction works, the following general mitigation measures will be put in place:

- Application of properly designed silencers, mufflers, acoustically dampened panels and acoustic sheds or shields, etc.;
- Use of temporary acoustic barriers and acoustic machinery enclosures;
- Locating noise emitting plant at maximum distance from noise sensitive receivers;
- Use of appropriately powered equipment; and
- Regular maintenance of site plant/equipment.

Operational Phase

5.3.2 Subject to the findings of further assessment, the potential impacts arising from the road traffic noise could be alleviated by adopting low noise road surfacing, noise barriers/ enclosures or alternative road alignment.

5.4 Water Quality

5.4.1 In order to prevent adverse water quality impacts, the following general mitigation measures would be put in place.

- Good site practice in accordance with the ProPECC PN 1/94 "Construction Site Drainage" and "Recommended Pollution Control Clauses for Construction Contracts" issued by EPD, and the procedures in the Environment, Transport and Works Bureau (ETWB) Technical Circular (Works) CTCW) No. 5/2005 "Protection of Natural Stream/Rivers from adverse impact arising from construction works";
- Runoff from the construction site would be properly collected and treated to ensure the effluent complies with Water Pollution Control Ordinance. Silt trap and oil interceptor would be provided to remove oil, lubricants, grease, silt, grit and debris from the wastewater before being pumped to the public storm water drainage system. The silt traps and oil interceptors would be cleaned and maintained regularly;

- Open stockpiles of materials on site would be avoided, or where unavoidable covered with tarpaulin or similar fabric during rainstorms;
- Where possible, works entailing soil excavation would be minimised during the rainy season;
- Oil interceptors would be provided and properly maintained for collecting spillage or leakages from site workshops. The waste oil removed would be collected by licensed collectors; and
- Mobile toilets or other appropriate means would be provided to store sewage before disposal through licensed collection agent or discharging to main sewerage system.

5.5 Waste

5.5.1 Waste arising during the construction phase will largely consist of spoil generated during earthworks, and general construction waste/ surplus materials (such as C&D materials, chemical waste and general refuse).

5.5.2 The following measures would be considered to reduce the quantities of C&D materials for disposal off site:

- All C&D materials would be sorted and re-used wherever possible;
- Waste hauliers would be required to obtain the necessary registration and licences under the Waste Disposal Ordinance and the Waste Disposal (Chemical Waste) (General) Regulation from the Environmental Protection Department;
- Nomination of an approved person to be responsible for good site practice, arrangements for collection and effective disposal to an appropriate facility of all waste generated at the site;
- Separation of chemical wastes for special handling and appropriate treatment at a licensed facility;
- A recording system for the amount of wastes generated recycled and disposed of (including the disposal sites);
- In order to monitor the management of C&D materials and disposal of solid wastes at public filling facilities and landfills, a trip-ticket system would be implemented by the Contractor;

- A Waste Management Plan (WMP) would be prepared in accordance with ETWB TC(W) No. 19/2005 "Environmental Management on Construction Sites";
- Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse of materials and their proper disposal would be arranged where practicable;
- Any unused chemicals or those with remaining functional capacity would be recycled;
- Reusable non-timber formwork would be adopted to reduce the amount of C&D materials; and
- Proper storage and site practices to minimize the potential for damage or contamination of construction materials.

5.6 Landfill Gas

Construction Phase

5.6.1 The precautionary measures outlined in the Environmental Protection Department's Landfill Gas Hazard Assessment Guidance Note (Para 8.3 to 8.49) should be adopted by the contractors during the construction period within the landfill consultation zones which include but not limited to:

- Implementation of safety procedures to minimise the risks of fires and explosions, asphyxiation of works (especially in confined space) and toxicity effects resulting from contact with contaminated soil and groundwater;
- Appointment of safety officers, specifically trained with regard to landfill gas and leachate related hazards;
- A no smoking policy;
- Control of welding, flame cutting or other hot works by a 'permit to work' procedure; and
- Adequate provision of fire extinguishing equipment, fire-resistant clothing and breathing apparatus sets on site.

Operational Phase

5.6.2 Mitigation measures to be adopted during the operational phase of the Project should be reviewed as part of the QLFGHA during the EIA study.

5.7 Ecology

5.7.1 The mitigation measures that would be implemented to minimize air quality, noise and water quality impact could also help reduce potential impact to ecological resources.

5.7.2 As regards ecological impact, the principal of avoidance would be used wherever possible, including avoidance of any identified sensitive site or important foraging sites for fauna. For impact which is considered unavoidable, further mitigation measures would be considered, including translocation of important fauna species, transplantation of rare/protected floristic resources, confining construction works to a specific area/season, alternative design/construction methods, good site practices etc.. Compensation would be considered for the loss of important species or habitats, if any, on like-for-like basis whenever possible.

5.8 Landscape and Visual

5.8.1 During construction phase, effective mitigation measures to reduce the potential landscape and visual impacts of the works include erosion control measures, minimization of works site areas, trees preservation, screening of works located near particularly sensitive uses.

5.8.2 Subject to further investigation during the EIA study, measures to mitigate the potential permanent landscape and visual impact include, but not limited to, appropriate aesthetic design and treatment on aboveground structures, landscaping works, tree transplanting/ compensatory planting for any loss of tree, if any, due to the works etc.

5.9 Severity, Distribution and Duration of Environmental Effects and Further Implications

5.9.1 Subject to the findings of the assessments, effective control and mitigation measures would be identified to ensure potential impacts are reduced to an acceptable level. The potential severity, distribution and duration of environmental effects such as beneficial and adverse effects, short and long term effects, secondary and induced effects, as well as cumulative effects would be considered and addressed in the EIA, where applicable. Feedback from public consultation conducted by the PP would also be documented in the EIA.

6. USE OF PREVIOUSLY APPROVED EIA REPORTS

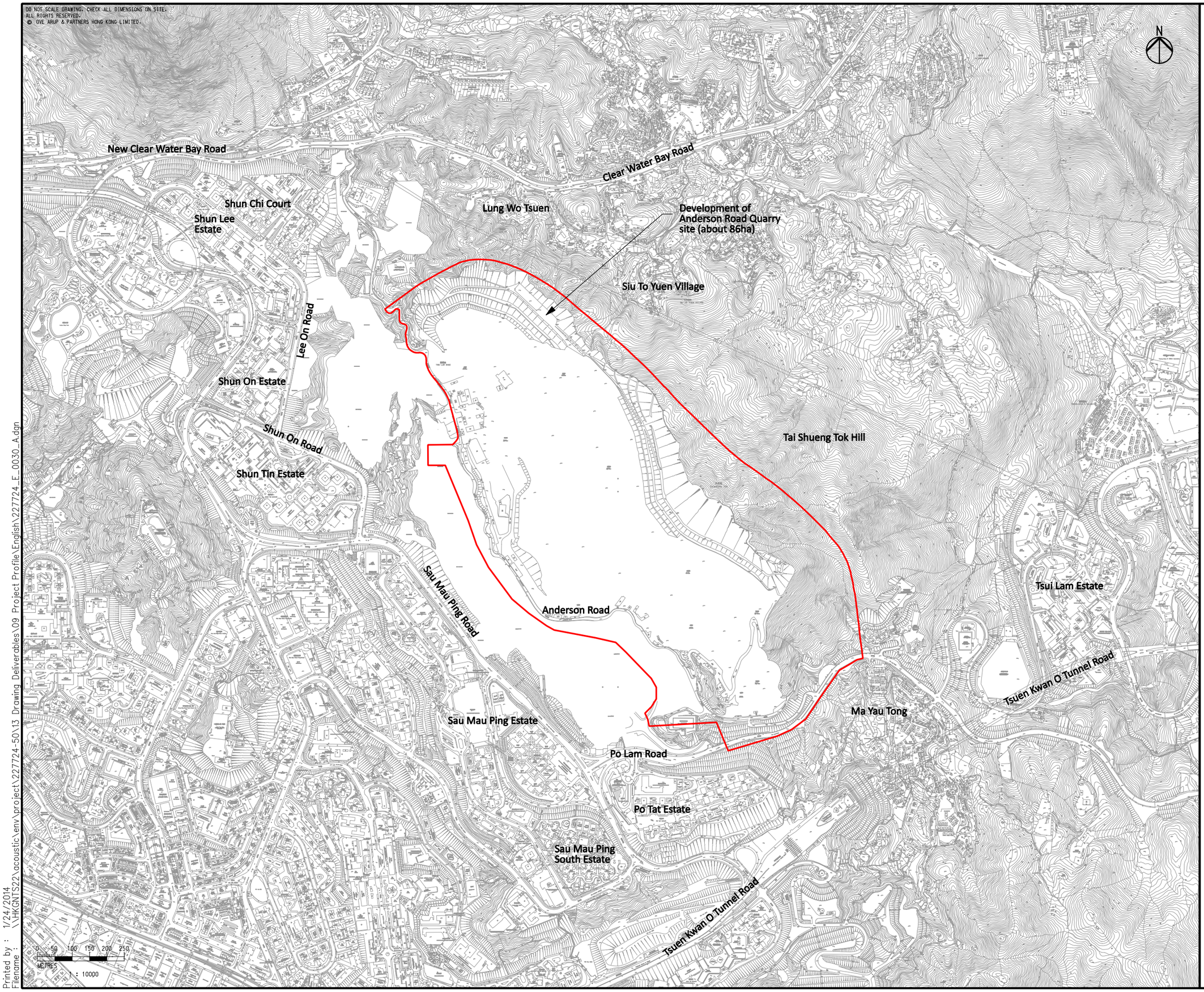
6.1.1 No previously approved EIA report exists for the proposed road improvement works. However, reference may be made to the following previously approved EIA report of a project that is in the vicinity of the proposed works:

Application No.	**Title**
EIA-005/1998	Planning and Engineering Feasibility Study for Development at Anderson Road

6.1.2 Reference would also be made to the EIA report of the ARQ Development which is expected to be approved by mid 2014.

EIA Study Brief Application No.	**Title**
ESB-247/2012	Development of Anderson Road Quarry

Figures



Legend

Study Area of Development of Anderson Road Quarry (ARQ) site

Drawing title

Location of Development of Anderson Road Quarry site

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Figure 227724/E/0032

Figure 227724/E/0033

New Clear Water Bay Road

Clear Water Bay Road

Tai Sheung Tok Hill

Anderson Road

Sau Mau Ping Road

Ngau Tau Kok

Tsuen Kwan O Tunnel Road

Lin Tak Road

Lam Tin

Kwun Tong

Legend

- Road Improvement Works (Clear Water Bay Road)
- Road Improvement Works (Lin Tak Road Widening/ Lin Tak Road Flyover)
- Road Improvement Works (Shun Lee Tsuen Road)

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Drawing title

Project Location Plan
(Road Improvement Works)
(Sheet 1 of 3)

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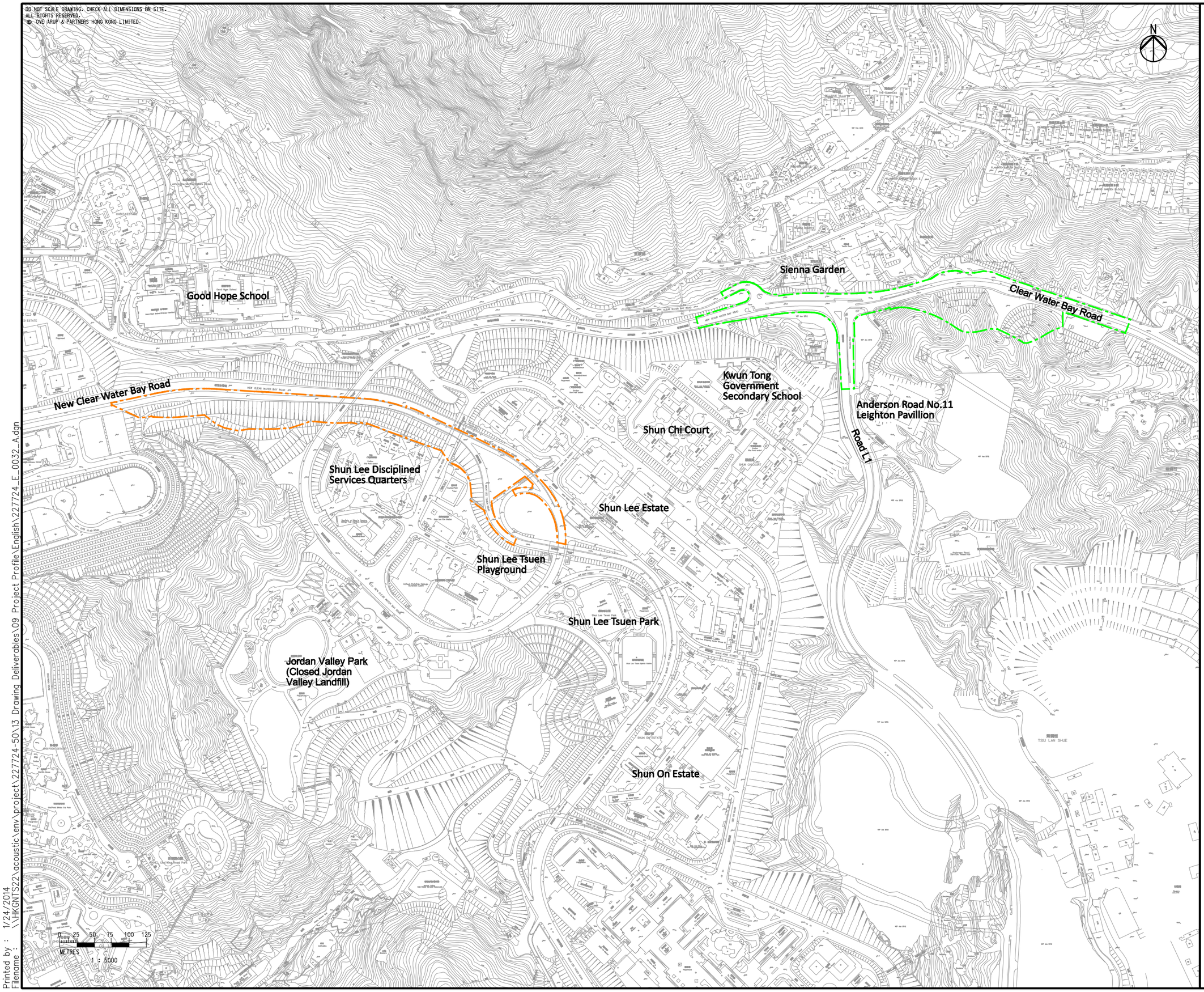

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- Road Improvement Works (Clear Water Bay Road)
- Road Improvement Works (Shun Lee Tsuen Road)

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Project Location Plan
(Road Improvement Works)
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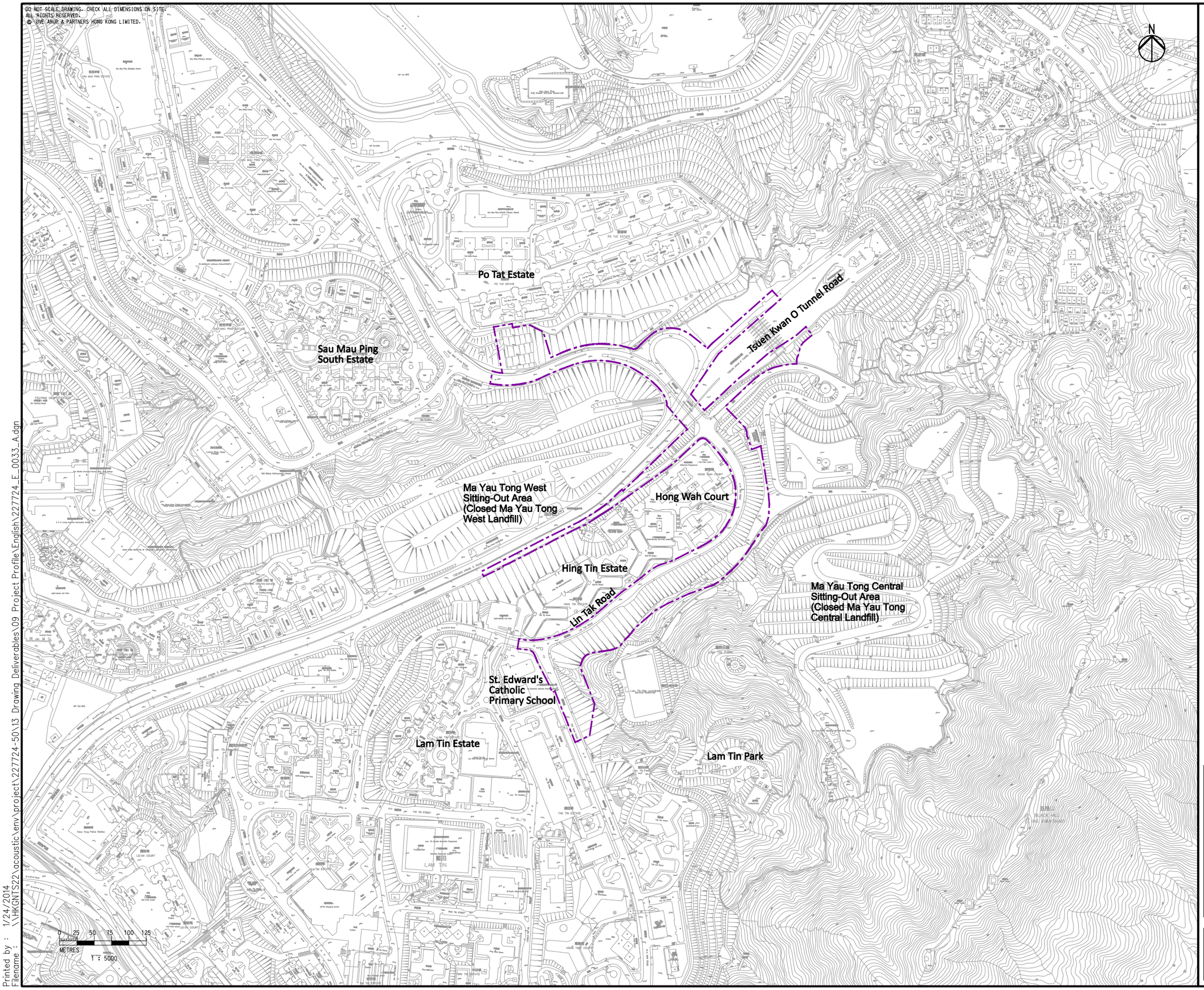

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Road Improvement Works (Lin Tak Road Widening/ Lin Tak Road Flyover)

Drawing title

Project Location Plan (Road Improvement Works) (Sheet 3 of 3)

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