

Drainage Services Department

DRAINAGE IMPROVEMENT IN SHA TIN & TAI PO

PROJECT PROFILE

June 2001

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Annex

Annex A
Location Plan for the Project

Annex B
Location Plan for Designated Projects
under the Environmental Impact Assessment Ordinance

1 BASIC INFORMATION

1.1 Project Title

Drainage Improvement in Sha Tin and Tai Po, hereinafter referred to as the “Project”.

1.2 Purpose and Nature of the Project

The Project aims to upgrade the flood protection level in Sha Tin and Tai Po local areas to reduce the risk of flooding during heavy rainstorms by improving river channels, upgrading stormwater drains and constructing floodwater pumping stations in low-lying areas.

1.3 Name of the Project Proponent

Consultants Management Division, Drainage Services Department.

1.4 Location and Scale of Project

Location plans for the proposed drainage works of the Project are at **Annex A**.

The Project includes –

- (a) construction of about 5 kilometres of drainage channels for Lam Tsuen River, She Shan River, Tai Po River and Kwun Hang River;
- (b) upgrading of about 8 kilometres of stormwater drains in town areas of Sha Tin and Tai Po; and
- (c) construction of two floodwater pumping stations and other minor drainage facilities.

The Project site covers an area of 140 sq. km accommodating a population of about 800,000 with some industrial provisions in Sha Tin and Tai Po. It also comprises Tai Mo Shan, Shing Mun, Lion Rock and Ma On Shan Country Parks, Tai Po Kau Nature Reserve and Shing Mun Reservoir.

1.5 Type of Designated Projects Covered by the Project Profile

The following proposed works are Designated Projects of type I.1 under Part I of Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) -

Drainage Channels

- Improvement to She Shan River
- Improvement to Tai Po River
- Improvement to Kwun Hang River

Stormwater Drainage Improvement in Tai Po

- Tai Po Road - Yuen Chau Tsai drainage works
- Tai Po Market - drainage works
- Tai Po Market - floodwater pumping station
- Lam Tsuen River - parapet wall
- Lam Tsuen River - flap valves at outfalls
- CARE village, Tai Po - cross road drain

Stormwater Drainage Improvement in Shuen Wan

- Floodwall along Tung Tsz Road
- Floodwater pumping station
- Cross road drain at Po Sam Pai
- Cross road drain at Shuen Wan

A location plan for these Designated Projects is at **Annex B**.

1.6 Name and Telephone Number of Contact Person

2 OUTLINE OF PLANNING & IMPLEMENTATION PROGRAMME

2.1 Project Offices/Divisions

The Consultants Management Division of the Drainage Services Department will be responsible for the overall planning and implementation of the Project. Consultants will be engaged to undertake site investigations, impact assessments, design and construction supervision of the Project. Construction will be contracted out.

Operation and maintenance of the completed works will be taken up by the following Divisions of the Drainage Services Department -

Mainland South Division;
Mainland North Division;
Hong Kong & Islands Division; and
Sewage Treatment 1 Division.

2.2 Project Time Table

Consultants for the design and construction supervision will be appointed in November 2001.

By December 2003, design will be completed for the improvement works which are not classified as Designated Projects under the Environmental Impact Assessment Ordinance and in those areas which do not require land resumption. By May 2005, the rest of the design will be completed.

Construction of the Project will commence in October 2004 for completion by end 2008. The proposed works classified as Designated Projects will start in April 2005 for completion by end 2008.

2.3 Interactions with Other Projects

The Project will have interactions with the following projects-

<u>Projects</u>	<u>Project office</u>	<u>Area of interaction</u>
90WC – Replacement and Rehabilitation of Water Mains Stage 1, Phase 1A	WSD	Tai Po Market
9245WF – Water Supply to Tai Po South High Level Areas & Salt Water Supply to Tai Po East.	WSD	Tai Po River & Tung Tsz Road.
B121WC – Extension of Water Supply to Ma On Shan	WSD	Kwun Hang River.
A planned school adjacent to the proposed floodwater pumping station in Tai Po Market.	LCSD Plan D ED	Pumping station in Tai Po Market.

3. POSSIBLE IMPACT ON THE ENVIRONMENT

3.1 Outline of Process Involved

The Project comprises construction of drainage channels, upgrading of stormwater drains, and construction of floodwater pumping stations and other drainage facilities. Its potential environmental impacts are associated with construction and operation.

The construction phase works will mainly involve site clearance, site preparation, earthworks and other general construction activities. The operation phase works will primarily be the routine maintenance and operation of the drainage channels, stormwater drains and pumping stations.

In the Preliminary Project Feasibility Study of the Project, a Preliminary Environmental Review (PER) was conducted to identify the possible impacts on the environment. The PER concluded that no insurmountable environmental impacts are identified for either construction or operation of the proposed works, but mitigation measures should be formulated to reduce environmental impacts to acceptable levels.

The following sections consider the likely construction and operation activities and the associated potential environmental impacts that may arise.

3.2 Possible Environmental Impacts

3.2.1 Construction Phase

Dust Emission

The works of the Project at construction stage have the potential to generate dust, and may impose short term unfavourable effect on the local air quality. The related construction activities in this respect mainly include spoil transport, construction traffic and excavation works.

Noise

The powered mechanical equipment and plant have the potential to generate temporary noise upon noise sensitive receivers (NSRs). The equipment and plant likely to be used include air compressors, generators, hydraulic or pneumatic breakers, excavation plant, bulldozer and dump trucks.

Generation of Site Runoff

Runoff from the site during construction may contain sediments and silts arising from earthworks, and oil and lubricants from construction vehicles and plant.

Generation of Solid Waste

Sources of solid wastes arising likely include-

- i. uncontaminated spoil in excess of the requirements for site formation and landscaping;
- ii. damaged, used and surplus construction materials;
- iii. vegetation stripped from the site;
- iv. 'municipal' type waste, e.g. cardboard and plastic packaging; and
- v. chemical waste, e.g. oils and greases, solvents, paints, used batteries.

Ecology

The Project has the potential to impose the following ecological impacts-

- (i) the direct loss of or disturbance to on-site habitats (including riparian, agricultural, hillslope, wetland and aquatic, and their associated flora and fauna);
- (ii) disturbance to adjacent habitats; and
- (iii) disturbance to the river banks and beds.

Further assessment will be carried out to determine the requirement for mitigation measures during construction.

Cultural Heritage

Some works of the Project are considered to be close to some declared monuments, for example, a pottery kiln at Wun Yiu village, Man Mo Temple in Tai Po Market and Tsai Sing Temple in Kwun Hang. Construction works may generate potential impacts to them. Comments from the Antiquities and Monuments Office of Leisure and Cultural Services Department will be sought to minimise any effect on these monuments during construction.

3.2.2 Operation Phase

It is anticipated that the Project will not generate any significant environmental impact in operation phase.

Ecological study will be carried out to assess the disturbance to on-site and adjacent habitats, and environmental monitoring and audit will be made.

4. MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

4.1 Farm Areas along She Shan River

Some sections of the riversides of She Shan River are actively farmed. Site access and site limits will need to be controlled so as not to disturb these local agricultural areas.

4.2 Remains of a Pottery Kiln at Wun Yiu Village

The declared monument is about 300 m from Tai Po River. Impact on the monument is not likely.

4.3 Tai Sing Temple

It is in close proximity to the upstream limit of the proposed works for Kwun Hang River. Some of the riparian trees next to the temple may have fung shui significance. In addition, a shrine is situated at about 30m to the south of the temple.

Noise and dust from the construction activities, vehicles, plant and equipment will need to be mitigated in the vicinity of the temple, picnic areas and shrines, in particular on festivals and public holidays.

4.4. Man Mo Temple, Tai Po

Man Mo Temple in Tai Po Market is located immediately adjacent to the proposed works in Fu Shin Street and Yan Hing Street. The use of mechanical equipment to perform the proposed works may impose temporary disturbance of construction noise or dust nuisance to the tourists or worshippers. Excavation along the proposed works areas may impose stress on the soil structure and the hydro-geology near the Temple. An assessment of the construction impact will be carried out prior to the commencement of the works. Comment from the Archaeological and Monuments Office (AMO) of Leisure and Cultural Services Department will be sought.

4.5 Old KCRC Tai Po Station

The proposed works in Fu Shin Street and Yan Hing Street lie within 300m of the old KCRC station. However, in view of the distance in-between, impact on the station is not likely.

4.6 Island House at Yuen Chau Tsai

The proposed cross road drain at CARE village and drainage works at Yuen Chau Tsai lie within 300m of this declared monument. However, in view of the type of the drainage works and the distance in-between, impact on the monument is not likely.

4.7 Natural Environment

Sites of particular concern due to their documented ecological value or statutory recognition, such as Site of Special Scientific Interest (SSSI), Conservation Area (CA), Coastal Protection Area (CPA), are as follows-

- (i) She Shan fung shui wood SSSI and CA at She Shan River mid-reaches – The area is noted for the richness of flora, and its value to birds. The river also supports a number of rare dragonfly species;
- (ii) Tai Po River – It is noted for a locally rare dragonfly species;
- (iii) Shuen Wan egret SSSI, Ting Kok mangrove SSSI, CAs on tidal fishponds and freshwater marsh, and CPAs at Shuen Wan and Ting Kok – They are recognised as high usage by foraging wildlife; and
- (iv) CPA at Kwun Hang.

Ecological, landscape and water impacts will be assessed to address the respective environmental concerns.

4.8 Elements of the Environment which may Affect the Project Area

The sprawling housing developments in the rural areas of the New Territories may directly or indirectly bring about a reduction in air quality, water quality, ecological, landscape and visual values.

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

5.1 Dust Mitigation Measures

Provision will be made in the construction contract documents to require the contractors to follow the Air Pollution Control (Construction Dust) Regulation, other relevant regulations and guidelines to minimise potential dust emission. The following measures, if necessary, will be carried out to reduce potential dust impact-

- . erection of screens around tipping areas;
- . shielding of stockpiles;
- . restriction of the speed of vehicles running over any unpaved areas;
- . covering the loads of all vehicles entering and leaving the site;
- . provision of wheel washing facilities at site exits; and
- . regular inspection and maintenance of plant and vehicles to control exhaust air emissions.

5.2 Noise Mitigation Measures

The contractors for the works will have to comply with the provisions of the Noise Control Ordinance, relevant regulations and guidelines. The following mitigation measures, if necessary, will be carried out to reduce the noise impacts-

- . reducing the number of equipment / construction works at any one time in areas close to sensitive receivers;
- . use of noise control components on equipment, e.g. silencers, mufflers, shields, etc.;
- . use of quiet plant;
- . use of temporary barriers or enclosures;
- . siting noisy equipment as far as possible away from the sensitive receivers;
- . scheduling noisy activities to minimize exposure of sensitive receivers to high levels of construction noise; and
- . proper maintenance of plant and equipment.

5.3 Control of Site Runoff

The following measures, if necessary, will be carried out during construction-

- boundaries of earthworks will be surrounded by temporary flood protection works;
- sand and debris will be removed from site run-off before being discharged outside the Project site. This can be achieved by locally grading the ground surface to direct site runoff to silt traps and oil/grease separators; and
- watertight closed grab excavators will be deployed to handle wet material.

5.4 Solid Waste Management Measures

Provisions in line with the prevailing policy will be made in the construction contract for the contractors to reuse and recycle construction waste material and to minimize the generation of such material.

Fossil fuel and used lubricants for trucks and machinery, scrap batteries, paints and used solvents / solutions for equipment cleansing are classified as chemical wastes. When necessary, the contractors should register with EPD as a chemical waste producer and observe all the requirements for the storage, labelling, transportation and disposal of chemical waste.

5.5 Ecology Mitigation

Measures identified in the above sections in respect of air, noise, site run-off and solid waste will also reduce some of the environmental impacts.

Ecological studies will be included in the Environmental Impact Assessment (EIA) Study. Recommendations from this EIA study to minimise environmental impacts in construction and operation phases will be strictly followed.

5.6 Beneficial Effects

Implementation of the proposed drainage channel improvement works is considered to give rise to the following potential beneficial operational impacts-

- reduction in loss of crops or other agricultural products and villagers' properties caused by floods as the risk of flooding during heavy rainstorms will be substantially reduced; and
- improvement to water supply to agricultural areas because irrigation devices with proper future maintenance, e.g. weirs, will be re-provided.

5.7 Further Studies

Further studies are recommended by the Preliminary Environmental Review of the Project Preliminary Feasibility Study and are summarised as follows :-

<u>Proposed Works</u>	<u>Further Studies/Assessments</u>
(a) Improvement to She Shan River	Further ecological study during the detailed design on the impacts to the stream and “CA” zone due to the possible habitat loss during and after the works is required.
(b) Improvement to Upper Tai Po River	Further ecological study during the detailed design on the impacts to the stream due to the possible habitat loss during and after the works is required.
(c) Improvement to Kwun Hang River	Further ecological study during the detailed design on the impacts to the stream and “CPA” zone due to the possible habitat loss during and after the works is required.
(d) Shuen Wan floodwall	Further ecological study during the detailed design on the impacts to the “CA” zone stream due to the possible habitat loss during and after the works is required.
(e) Shuen Wan floodwater pumping station	Environmental Monitoring and Assessment (EM&A) programme should be introduced during the construction and operations stages.
(f) Cross road drain at Po Sam Pei	EM&A programme should be introduced during the construction and operation stages.
(g) Cross road drain at Shuen Wan	EM&A programme should be introduced during the construction and operation stages.
(h) Cross road drain at CARE village	EM&A programme should be introduced during the construction and operation stages.

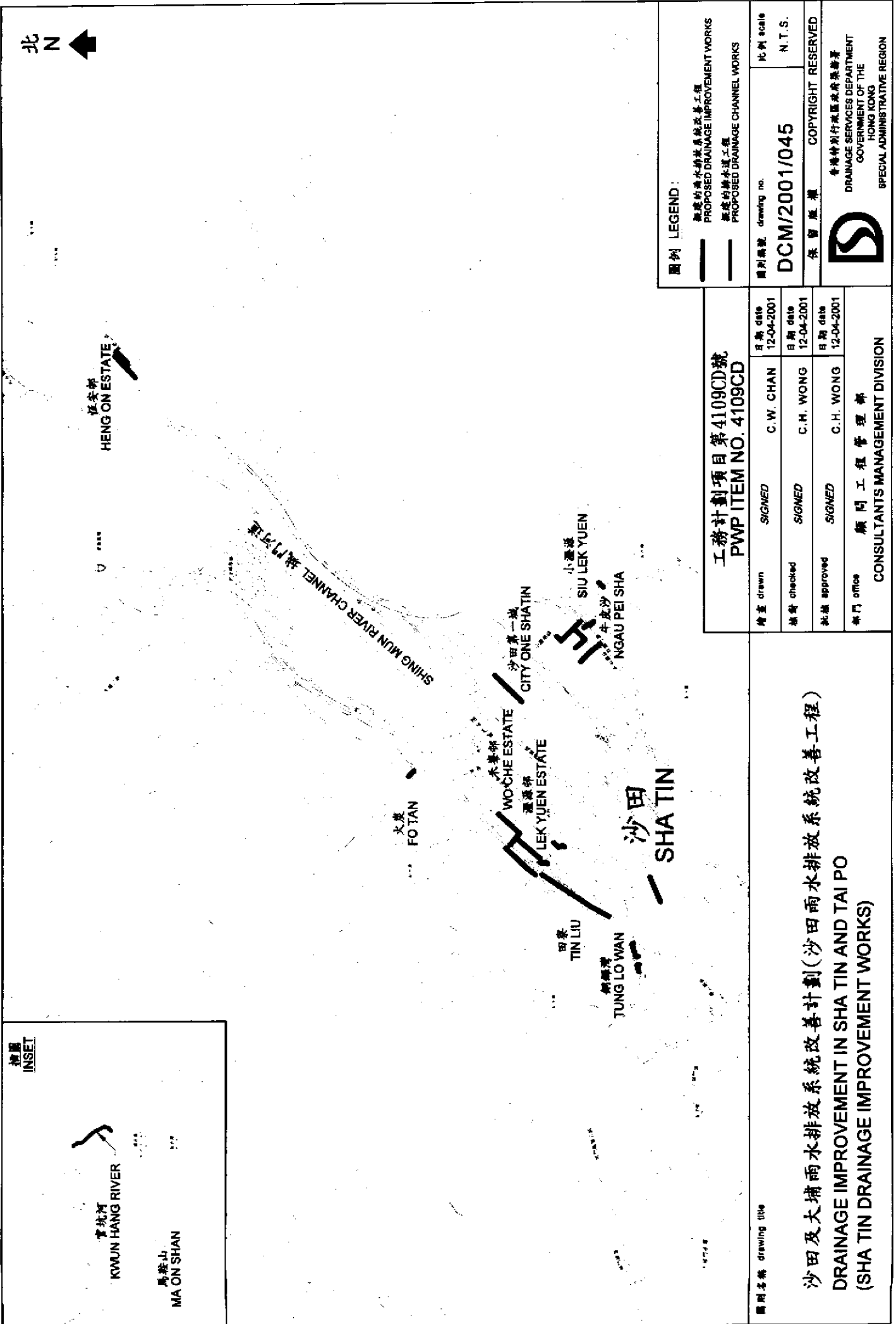
- (i) Town drainage works at
 - (i) Tai Po Road
 - Yuen Chau Tsai
 - (ii) Tai Po Market
 - (iii) Lam Tsuen River
 - parapet wall
 - (iv) Tai Po Market
 - floodwater pumping station
 - (v) Lam Tsuen River
 - flap valves at outfalls

Further assessment on the likely adverse construction impact on Man Mo Temple is recommended.

EM&A programme should be introduced during the construction and operation stages.

附件

Annex




圖例 LEGEND:

- 擬議的雨水納管系統改善工程
PROPOSED DRAINAGE IMPROVEMENT WORKS
- 擬議的輸水道工程
PROPOSED DRAINAGE CHANNEL WORKS

圖則編號 drawing no. **DCM/2001/045** 比例 scale **N.T.S.**

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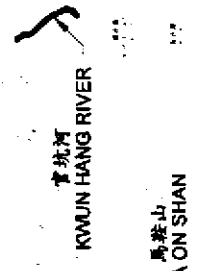
繪圖 drawn	SIGNED	C. W. CHAN	日期 date	12-04-2001
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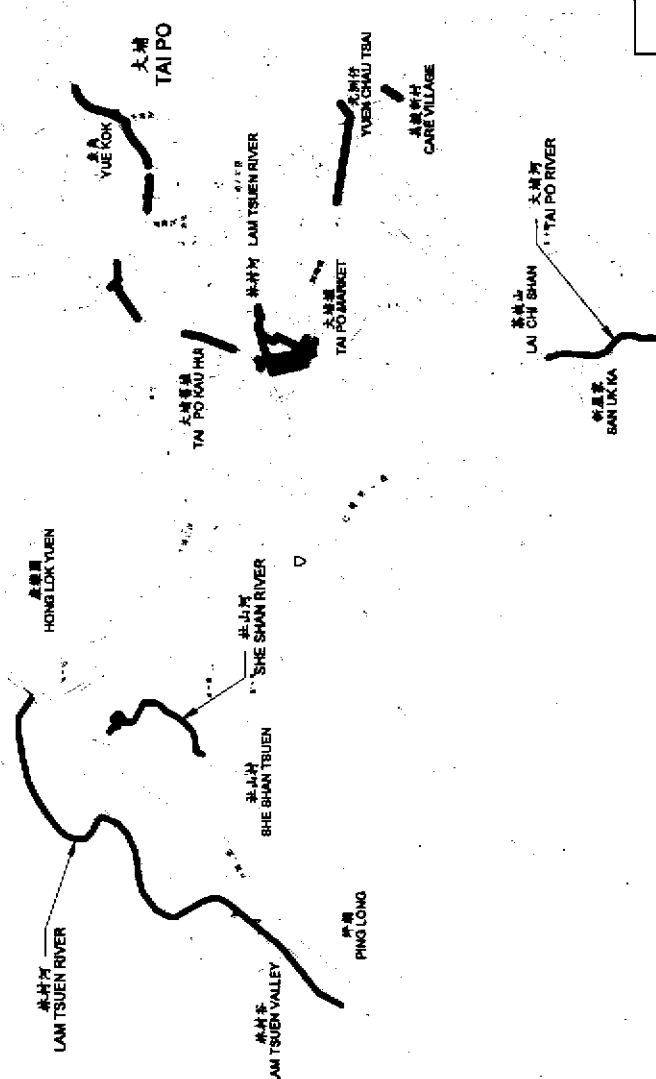
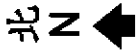
沙田及大埔雨水排放系統改善計劃(沙田雨水排放系統改善工程)
DRAINAGE IMPROVEMENT IN SHA TIN AND TAI PO
(SHA TIN DRAINAGE IMPROVEMENT WORKS)

插圖
INSET



葵涌河
KWUN HANG RIVER

馬鞍山
MA ON SHAN



圖例 LEGEND:

- 擬定的雨水排水系統改善工程
PROPOSED DRAINAGE IMPROVEMENT WORKS
- 擬定的排水道工程
PROPOSED DRAINAGE CHANNEL WORKS
- 擬定的排洪抽水站
PROPOSED FLOODWATER PUMPING STATION

圖則編號 drawing no. **DCM/2001/046** 比例 scale **N.T.S.**

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沙田及大埔雨水排放系統改善計劃(大埔雨水排放系統改善工程)
DRAINAGE IMPROVEMENT IN SHA TIN AND TAI PO
(TAI PO DRAINAGE IMPROVEMENT WORKS)

