IMPROVEMENTS TO SAN TIN INTERCHANGE

Project Profile
Prepared in accordance with
the Environmental Impact Assessment Ordinance (Cap 499)

July 2001

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Highways Department / NT Region
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IMPROVEMENTS TO SAN TIN INTERCHANGE

PROJECT PROFILE

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1.0 BASIC INFORMATION

1.1 Project Title

Improvements to San Tin Interchange

1.2 Purpose and Nature of Project

The scope is aimed at improving San Tin Interchange by providing additional traffic lanes, to enable cross-boundary goods vehicles from northbound San Tin Highway and westbound Fanling Highway to bypass the elevated San Tin roundabout for access to Lok Ma Chau Crossing so as to relieve the traffic queues in the San Tin roundabout.

Moreover, the project will provide a large enough northbound vehicle holding area (VHA) at Lok Ma Chau corridor, in addition to the existing VHA, to accommodate the excessive goods vehicle demand during traffic incidents or emergencies so as to reduce the resulting adverse traffic impact of cross-boundary traffic queues on the strategic and local road networks. The additional VHA is located in the southern side of the existing VHA. An emergency vehicle access is also proposed at the southeast corner of the additional VHA. To connect the existing and additional VHA, a link bridge is proposed. Some associated drainage, landscape, traffic aids installation, lighting works and other necessary environmental protection measures are also included in this project.

1.3 Name of Project Proponent

Highways Department, HKSAR Government.

1.4 Location and Scale of Project

(a) The location plan and general layout plan of the project is shown on drawing no. **2305/PP/001**.

(b) The scope of the project comprises the following:

- provision of two single lane elevated roads of totally about 1.7km in length from westbound Fanling Highway and northbound San Tin Highway to the additional VHA
- provision of an additional vehicle holding area (VHA) and emergency vehicle access (EVA)
- provision of a link bridge connecting the existing and additional VHA
- provision of associated landscape, drainage, street lighting, traffic aids and E&M works,
- provision of associated noise mitigation measures in the study area along the proposed elevated structures,
- provision of associated wetland compensation measures; and
- provision of associated drainage mitigation measures

(c) The capital cost for this project (including land resumption cost) is estimated at approximately $599 million.

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

This project profile covers only the project "Improvements to San Tin Interchange". This project is classified as a Designated Project under Schedule 2, Part I, A.8 of the Environmental Impact Assessment (EIA) Ordinance. An environmental permit is required for the project.

1.6 Name and Telephone Numbers of Contact Persons

2.0 OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME

2.1 Project Planning and Implementation

The Investigation (including Site Investigation, Environmental Impact Assessment, Ecological Impact Assessment, Drainage Impact Assessment, Traffic Impact Assessment, Tree Survey and Heritage Impact Assessment), Preliminary Design and Detailed Design will be carried out by consultants.

2.2 Project Timetable

A tentative implementation programme is as follows:

Selection of Consultant	Dec 2001	-	May 2002
Investigation and Preliminary Design	May 2002	-	May 2004
Detailed Design	May 2004	-	February 2005
Tendering Stage	February 2005	-	November 2005
Construction Stage	November 2005	-	October 2008

The above programme is only tentative and subject to change by the project proponent.

2.3 Interaction with Other Projects

The project may have interaction with other projects, including but not limited to the following:

- East Rail Extension – Spur Line to Lok Ma Chau by KCR
- Expansion of Kiosks and Facilities at Lok Ma Chau Boundary Crossing – Remaining Works by ASD
- Northern Rail Link of the Second Railway Development Study by KCR
- Planning and Detailed Design of Ngau Tam Mei/San Tin Trunk Sewage Disposal Phase 1 and Phase 2 under PWP Item 4215DS, namely Yuen Long and Kam Tin Sewerage and Sewage Disposal Stage 2 by DSD
- Proposed drainage channel NTM04 under the Northern NT DMP Study by DSD

- PWP Item No.73CD Main Drainage Channels and Poldered Village Protection Scheme for San Tin, NWNT Phase 3, Part I – Eastern Main Drainage Channel for San Tin by TDD

The above list of projects is not intended to be exhaustive and will be reviewed during the EIA study.

3.0 POSSIBLE IMPACTS 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 Gaseous emissions

Vehicle and plant exhaust emissions from the site are not considered to be a significant source of air pollutants in construction phase. However, vehicular traffic will be the main source of gaseous emissions during the operational phase. Mitigation measures shall be provided during the EIA study in accordance with Air Pollution Control Ordinance.

3.2 Dust

Air quality impacts have the potential to occur during construction from dust generated due to exposed site areas, stockpiling of materials, movement of vehicles along the road and excavation and handling of construction materials. In general, dust control measures of the Air Pollution Control (Construction Dust) Regulation shall be followed to suppress the dust emission during construction phase. During the operational phase, particulates will be generated from vehicle emissions. The air quality shall be assessed in the EIA study and the associated mitigation measures shall be provided, if necessary such that the air quality is compiled with the Air Pollution Control Ordinance.

3.3 Noisy operations

During construction phase, dominant powered equipment and machineries which are expected to generate noise include: breakers (both portable and excavator-mounted), power units for various types of plant, including air compressors, excavators, ready mixed concrete lorries and poker vibrators; and cranes. Moreover, major noisy activities include breaking road surface, excavation, piling, concreting, road surfacing and handling of earth materials. The construction noise impact shall be critically assessed in the EIA study and the contractor will be governed by the licensing conditions of construction noise permits issued under the Noise Control Ordinance. During operational phase, traffic noise from the new road may have impact to the sensitive receivers and should be assessed in the EIA study.

3.4 Traffic generation

Construction traffic will add to the overall traffic volume on San Tin Highway, Fanling Highway, Castle Peak Road-San Tin, Castle Peak Road-Chau Tau, San Sham Road and Kwu Tung Road. Temporary traffic management measures may be implemented to minimise disturbance to the road users as well as minimising environmental impacts such as air and noise to the environment during the construction phase.

3.5 Disruption of water movement or bottom sediment

Drainage mitigation measures may be implemented before the construction with particular concern in the Eastern Main Drainage Channel. The main concern relating to the activities which might cause the water quality of some public drains to deteriorate is the possible pollution due to silt, oil and floating debris while work is in progress.

3.6 Solid waste

Waste generated will comprise excavated materials, construction and demolition waste and general refuse during the construction phase.

3.7 Unsightly visual appearance

The project will involve the construction of vehicular bridges, additional vehicle holding area and noise mitigation measures which may affect the landscape character and create visual impacts to the adjacent villages near Tung Chan Wai, Tan Shau Wai, Chau Tau, etc. The potential landscape and visual impacts should be addressed with suitable mitigation measures recommended for the construction phase. Moreover, consideration shall be given at the design stage in order to harmonise the works with the natural environment.

3.8 Ecological impacts

The project works will partially encroach onto Wetland Conservation Area (WCA) and Wetland Buffer Area (WBA). The impacts on the ecological value of the wetland, the compensation/mitigation measures and the residual impacts shall be assessed in the Ecological Impact Assessment and maintained during the construction and operational phases of the project.

4.0 MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

4.1 Outline of Sensitive Receivers

Existing and planned sensitive receivers and sensitive parts of the natural environment which might be affected by the proposed project, include mainly the following: (A total of 25 representative ASRs were shown on drawing no. 2305/PP/002)

(1) Tung Chan Wai
(2) Yan Shau Wai
(3) On Ling Tsuen
(4) Wing Ping Tsuen
(5) Houses near San Tin
(6) Houses near Kwu Tung Road Overbridge
(7) Houses near west of Kwu Tung Road
(8) Houses near west of Ki Lun Shan
(9) Houses near south west of Ki Lun Shan
(10) Houses near east of Ki Lun Shan
(11) Houses near east Kwu Tung Road
(12) Houses near Castle Peak Road – Chau Tau
(13) Chau Tau Tsuen
(14) Houses near west of Lok Ma Chau Road
(15) Houses near north of Lok Ma Chau Road
(16) Lok Ma Chau Control Point Units

(17) Fan Tin Tsuen
(18) Houses near south San Tin Highway
(19) Houses near Pak Shek Au
(20) Houses at north east Chau Tau
(21) Pun Uk Tsuen
(22) Houses near north Lok Ma Chau Road
(23) Existing fishponds habitats
(24) Wetland created by Lok Ma Chau Crossing Project
(25) San Tin Eastern Main Drainage Channel Project

The above sensitive receivers are not intended to be exhaustive and will be reviewed with EPD during the EIA study. Moreover, any site of cultural heritage will be determined in the heritage impact assessment.

4.2 Outline of Major Element of the Surrounding Environment

Part of the existing dusty open storage area located at the west of San Sham Road will be affected by the project. Due consideration should be exercised to assess the environmental impacts arising from the reprovision of the open storage area in the EIA study, if required.

5.0 ENVIRONMENTAL PROTECTION MEASURES AND ENVIRONMENTAL IMPLICATIONS

5.1 Measures to Minimise Environmental Impacts

(a) Air

The following dust control measures to minimise the dust nuisance during the construction phase should be considered:

- vehicle wheel and body washing facilities at site exits
- reduction of vehicular speed and unpaved roads
- regular wetting of the site (using browsers, sprays or vapour mists) to reduce dust
- the earthmoving activities must be carefully and well planned. Such planning shall include the transportation routes as well as protective measures such as the employment of water-spraying and tarpaulin sheets to suppress the dust generated during and after excavation.

Dust is not expected to be an issue during the operational phase.

(b) Noise

To mitigate the construction noise impacts, the following measures should be considered:

- the use of silenced equipment
- the employment of alternative concrete breaking techniques
- the siting of equipment
- the careful scheduling of work, especially near the educational institution where examination periods shall be taken into consideration
- the use of temporary acoustic barriers
- the proper maintenance of equipment

- the utilisation of construction noise specification and clauses
- adequate site supervision to ensure that every practical mean is utilised to minimise the noise impacts
- Any other special measure to avoid disturbance in birds wintering season

To reduce traffic noise during the operational phase, the following measures should be considered:

- noise enclosure
- noise barrier
- noise reducing highway surfacing

(c) Water

Measures include the provision of temporary drainage systems in accordance with EPD's guidelines, interceptor manholes to trap oil pollutant; appropriate means to trap debris and sedimentation of silt in the temporary drainage system prior to discharging into the nullah and the Eastern Main Drainage Channel.

(d) Waste

The main source of solid waste during the construction phase will be excavated spoil. Other materials including surplus construction materials, used products and municipal type waste will also be generated. To minimise impacts, the following mitigation measures should be taken into consideration:

- solid materials and waste shall be removed from the site and taken to a designated disposal site
- construction vehicles to and from the site will be routed to avoid sensitive receivers where possible

No solid waste in excess of normal roadside litter will be expected during the operational phase.

(e) Landscape and visual

Mitigation measures to minimise the landscape and visual impacts may include but not limited to:

- compensatory planting
- aesthetic design of elevated structures, retaining walls and noise mitigation measures
- integration with Lok Ma Chau Crossing Area and Eastern Main Drainage Channel

(f) Ecological

An ecological impact assessment shall be carried out to demonstrate that the negative impacts by the WCA and WBA encroachment, if any, could be mitigated through positive measures and compensation on site/off site and residual impacts. The assessment shall be in accordance with EPD's requirements, Town Planning Board Guidelines on "Applications for Development with the Deep Bay Area" (TPB PG-No.12B) and other appropriate statutory requirements.

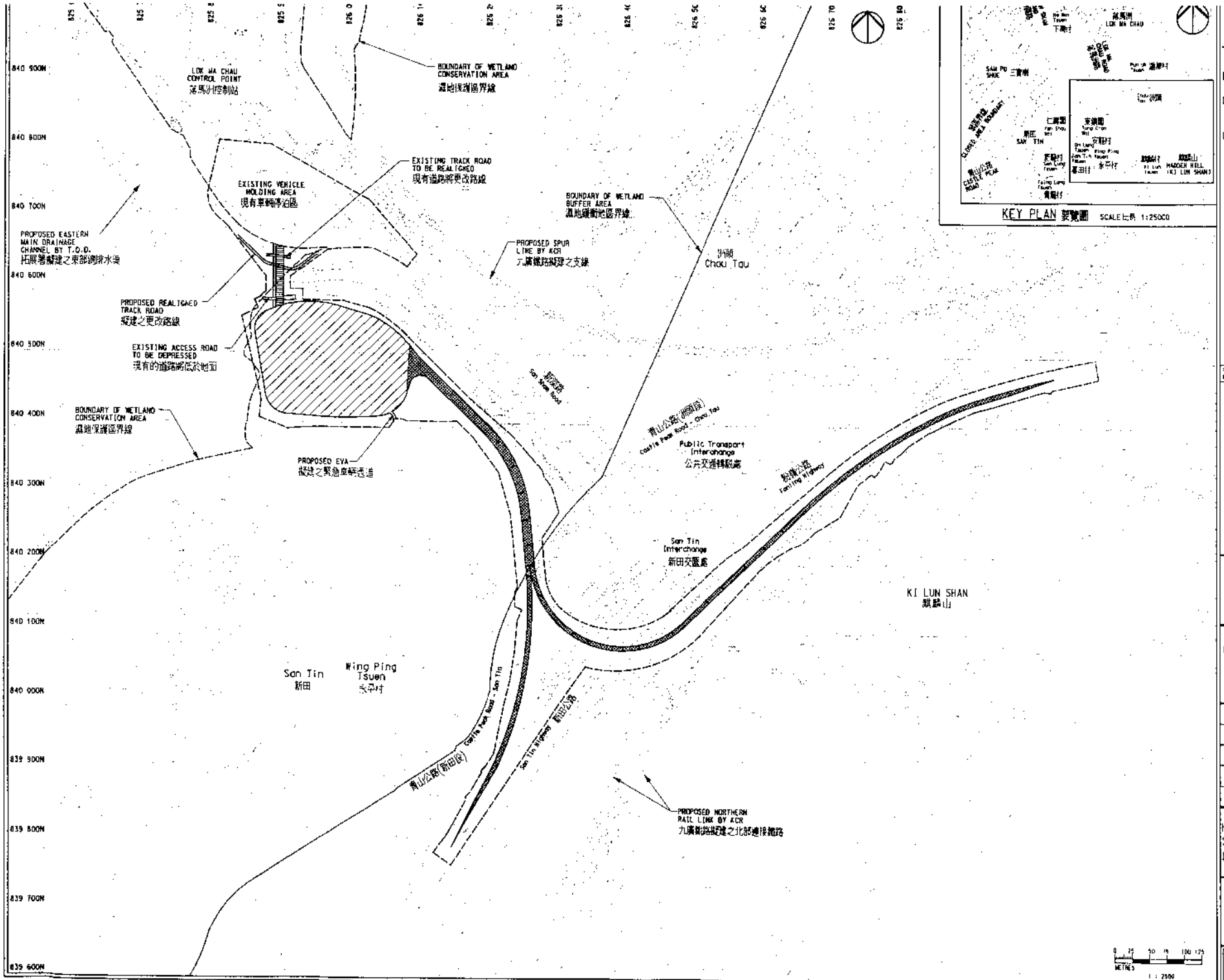
5.2 Possible Severity, Distribution and Duration of Environmental Effects

All construction impacts are short-term effects. From the findings of the preliminary environmental review, it is revealed that construction noise impacts on noise sensitive receivers should be in compliance with the established standards during daytime in weekdays. Construction dust impacts on sensitive receivers are expected to be in compliance with the established standards. There may be ecological impact due to the encroachment onto WCA and WBA, the impacts and mitigation measures during construction shall be determined in the ecological impact assessment.

Operational impacts are long-term effects. It is recommended that further assessment should be carried out to determine the traffic noise impact in details and the requirement of suitable mitigation measures. No adverse operational air quality impact is envisaged. Visual and landscape impacts will be determined in the detailed EIA study. Moreover, whether the project would affect any site of cultural interest or not, would be determined in the heritage impact assessment. For the ecological impact by the encroachment onto WCA and WBA, it shall be determined in the ecological impact assessment.

It is envisaged that with proper implementation and monitoring of the mitigation measures, adverse environmental effects shall be minimised during the construction and operational phases.

DRAWINGS



Legends: 圖例

- SITE LIMIT 地盤界線
- PROPOSED VEHICULAR BRIDGE 擬建之汽車天橋
- PROPOSED ADDITIONAL VEHICLE HOLDING AREA 擬建額外之車輛停泊區
- PROPOSED LINK BRIDGE 擬建之連接橋

Rev. 修訂	Description of Revision 修訂事項	Date 日期	Chkd. 核對人

Client

HIGHWAYS DEPARTMENT
NT REGION 新界區(西界區)

Babtie Asia
technical and management consultants

Scale 比例	Date 日期
1:2500 on A3	July 2001

Designed 設計	Drawn 繪圖	Checked 審核人
SHC	LSK	KL

Design Team Leader	Date 日期
KTC	JULY 2001

Approved	Date 日期
KTC	JULY 2001

Project 工程項目

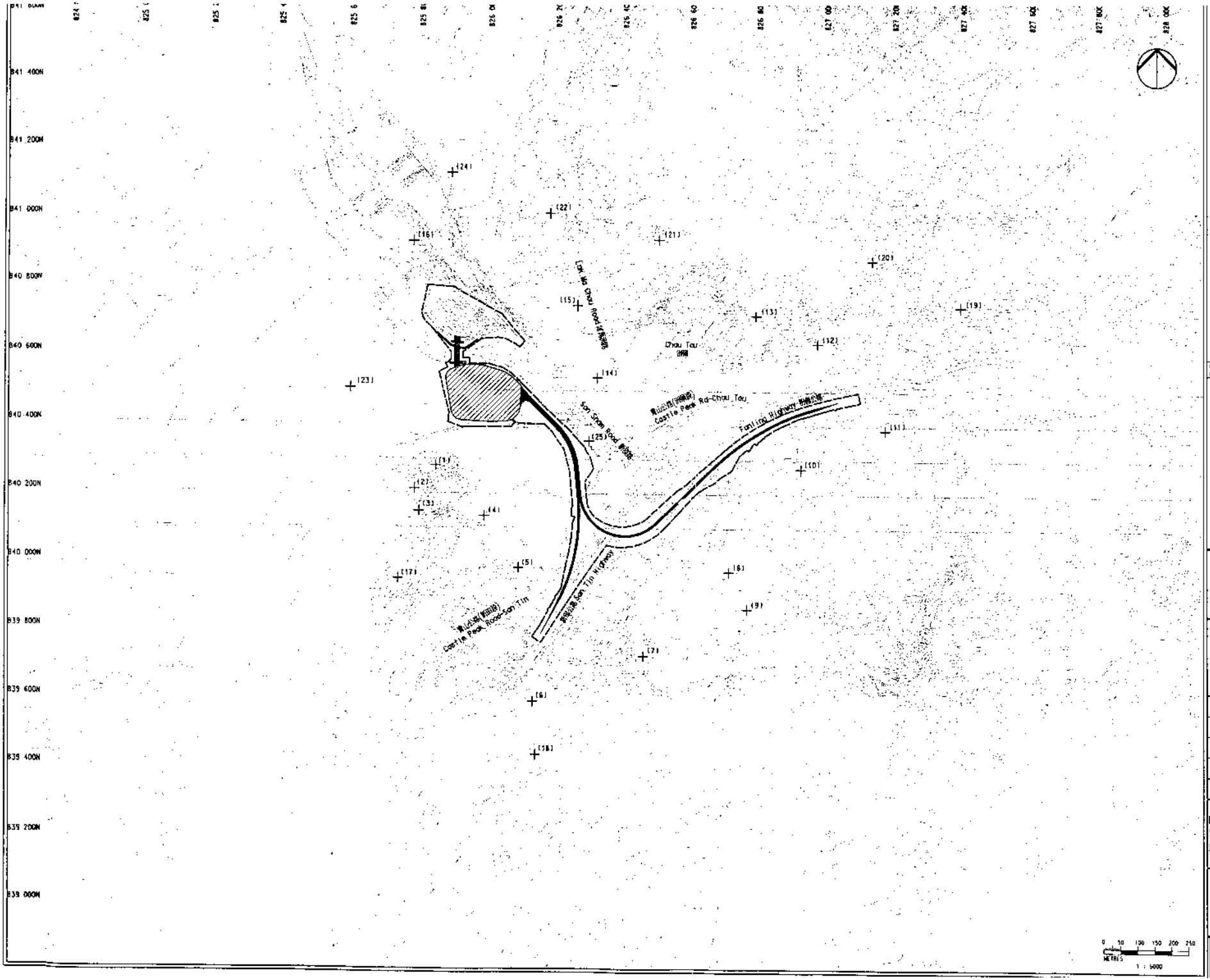
Improvements to
San Tin Interchange
新田交匯處改善工程

Title 題目

PROJECT KEY PLAN AND
GENERAL LAYOUT PLAN
工程平面圖及總平面圖

Drawing No. 圖則編號

2305/PP/001



Rev. 修訂	Description of Revision 修訂事項	Date 日期	Chkd. 核對人

Client

HIGHWAYS DEPARTMENT
NT REGION 路政署(新界區)

Babtie Asia
technical and management consultants

Scale 比例	Date 日期
1:5000	NOV. 2001
Designed 設計 SHG	Drawn 繪圖 LSK
Design Team Leader KTC	Date 日期 NOV. 2001
Approved KTC	Date 日期 NOV. 2001

Project 工程項目

Improvements to
San Tin Interchange
新田交匯處改善工程

Title 題目

LOCATIONS OF
SENSITIVE RECEIVER
敏感物的地方的位置

Drawing No. 圖則編號 2305/PP/002

Revision 修訂