



**AECOM**

**Contract No. ED/2018/01**

Kai Tak development – stage 4 infrastructure at the  
former runway and south apron

**Environmental Monitoring & Audit Manual  
(Revision 0)**

## Table of Contents

1	INTRODUCTION.....	1
1.1	Project Background.....	1
1.2	Project Scope and Programme.....	4
1.3	Purpose of this Manual (AEIAR/130-2009 and AEIAR/170-2013).....	4
1.4	Project Organization (AEIAR/130-2009 and AEIAR/170-2013).....	6
1.5	Key Location Plan of contract ED/2018/01.....	9
1.6	Programme of contract ED/2018/01.....	9
1.7	EM&A Programme of Register No. AEIAR-130/2009.....	9
1.8	EM&A Programme of Register No. AEIAR-170/2013.....	9
2	EM&A ON NEW DISTRIBUTOR ROADS SERVING THE PLANNED KTD .....	10
2.1	Introduction .....	10
2.2	Air Quality Impact.....	10
2.3	Noise Impact.....	18
2.4	Water Quality Impact.....	23
2.5	Waste Management Implications .....	24
2.6	Land Contamination Impact .....	27
2.7	Impact on Cultural Heritage .....	28
2.8	Landscape and Visual Impact .....	28
3	EM&A ON NEW SEWAGE PUMPING STATIONS SERVING THE PLANNED KTD (AEIAR-130/2009) .....	34
4	EM&A ON DECOMMISSIONING OF THE REMAINING PARTS (EX-GFS BUILDING AND RADAR STATION) OF THE FORMER KAI TAK AIRPORT (AEIAR-130/2009) .....	34
5	AIR QUALITY IMPACT (AEIAR-130/2009) .....	34
6	NOISE IMPACT (AEIAR-130/2009).....	34
7	WATER QUALITY IMPACT (AEIAR-130/2009).....	34
8	WASTE MANAGEMENT IMPLICATIONS (AEIAR-130/2009).....	34
9	LAND CONTAMINATION (AEIAR-130/2009).....	34
10	IMPACT ON CULTURAL HERITAGE (AEIAR-130/2009).....	34
11	LANDSCAPE AND VISUAL IMPACT (AEIAR-130/2009) .....	34
12	FISHERIES IMPACT (AEIAR-130/2009).....	35
13	ECOLOGY IMPACT (AEIAR-130/2009) .....	35
14	HAZARD TO LIFE (AEIAR-130/2009).....	35
15	SITE ENVIRONMENTAL AUDIT .....	36
15.1	Site Inspections.....	36
15.2	Compliance with Legal and Contractual Requirements .....	37
15.3	Environmental Complaints .....	37
16	REPORTING .....	39
16.1	General .....	39
16.2	Electronic Reporting of EM&A Information .....	39
16.3	Baseline Monitoring Report.....	39
16.4	Monthly EM&A Reports .....	40
16.5	First Monthly EM&A Report.....	41
16.6	Subsequent EM&A Reports .....	43
16.7	Quarterly EM&A Summary Reports.....	45
16.8	Final EM&A Review Reports .....	46
16.9	Data Keeping .....	48
16.10	Interim Notifications of Environmental Quality Limit Exceedances.....	48

Figure 1.1	Recommended Outline Development Plan (Dated May 2008)
Figure 1.2	Designated Projects in this EIA study
Figure 1.3	Project Organization
Figure 2.1	Locations of Air Quality Monitoring Stations
Figure 2.2	Locations of Noise Monitoring Stations
Figure 2.3	Locations of Direct Noise Mitigation Measures
Figure 2.4	Proposed Decontamination Works Area
Figure 2.4A	Baseline Landscape Resources with DP1 – Distributor Roads Overlaid During Construction
Figure 2.4B	Baseline Landscape Resources with DP1 – Distributor Roads Overlaid During Operation
Figure 2.5A	Baseline Landscape Character Areas with DP1 – Distributor Road Overlaid During Construction
Figure 2.5B	Baseline Landscape Character Areas with DP1 – Distributor Road Overlaid During Operation
Figure 2.6A	Baseline Key VSRs and Viewpoints at Local Level with DP1 – Distributor Road Overlaid During Construction
Figure 2.6B	Baseline Key VSRs and Viewpoints at Local Level with DP1 – Distributor Road Overlaid During Operation
Figure 15.1	Environmental Complaint Flow Diagram
Appendix A	Implementation Schedule of the Proposed Mitigation Measures (AEIAR-170/2013)
Appendix A1	Implementation Schedule of the Recommended Mitigation Measures for New Distributor Roads Serving the Planned KTD (AEIAR-130/2009)
Appendix B	Data Record Sheet
Appendix C	Sample Template for the Interim Notification
Appendix D	Key Location Plan of Contract ED/2018/01
Appendix E	Accepted Programme of Contract ED/2018/01

## **1 INTRODUCTION**

### **1.1 Project Background**

- 1.1.1 The Project is located in the south-eastern part of Kowloon Peninsula, comprising the apron and runway areas of the former Kai Tak Airport and existing waterfront areas at To Kwa Wan, Ma Tau Kok, Kowloon Bay, Kwun Tong and Cha Kwo Ling. It covers a land area of about 328 hectares. The Project also covers Kowloon Bay and Kwun Tong Typhoon Shelter and the adjacent water bodies.
- 1.1.2 The Kai Tak Airport was the international airport of Hong Kong until 6 July 1998, which was replaced by the new Hong Kong International Airport at the Chek Lap Kok. After closure, the airport site has been occupied by various temporarily uses such as public fill banks, bus depots, car sales exhibitions, and recreational grounds. Besides, most of the original buildings and structures within the former airport site have been cleared and the ground contamination identified at the north apron had been decontaminated.
- 1.1.3 In 2002, the Chief Executive in Council approved the Kai Tak Outline Zoning Plans (No. S/K19/3 and S/K21/3) to provide the statutory framework to proceed with the South East Kowloon Development at the former Kai Tak Airport. However, following the judgment of the Court of Final Appeal in January 2004 regarding the Harbour reclamation, the originally proposed development which involved reclamation has to be reviewed. The Kai Tak Planning Review (KTPR) has resulted a Preliminary Outline Development Plan (PODP) for Kai Tak in October 2006.
- 1.1.4 Based on the PODP, Planning Department have prepared the Draft Kai Tak Outline Zoning Plan (OZP) No. S/K22/1 and was submitted to the Town Planning Board for consideration on 10 November 2006 and was gazetted under the Town Planning Ordinance on 24 November 2006 and the OZP No. S/K22/2 was approved by CE in C on 6 November 2007.
- 1.1.5 A Recommended Outline Development Plan (RODP) of Kai Tak Development has been prepared by resembling the changes to the PODP and the Kai Tak Outline Zoning Plan (OZP). The RODP (dated May 2008) becomes the basis for conducting the EIA study for the feasibility study of the Kai Tak Development. A copy of the RODP (dated May 2008) is shown in Figure 1.1a.
- 1.1.6 This Project falls within item 1 under Schedule 3 of the EIAO, i.e. engineering feasibility study of urban development project with a study area covering more than 20 hectares or involving a total population of more than 100,000.
- 1.1.7 This Project also contains various Schedule 2 Designated Projects (DPs) that, under the EIAO, require Environmental Permits (EPs) to be granted by the DEP before they may be either constructed or operated. Details of the Schedule 2 DPs are described in the EIA Report.
- 1.1.8 Three of the Schedule 2 DPs, namely the Decommissioning of the Former Kai Tak Airport other than the North Apron, Kai Tak North Apron Decommissioning, and the Dredging Works for Proposed Cruise Terminal at Kai Tak, have already been covered under separate EIA Reports that were approved under the EIAO. The EM&A requirements for these 3 Schedule 2 DPs have already been detailed in the respective EM&A Manual.

- 1.1.9 The environmental impacts of another three Schedule 2 DPs as listed in Table 1.1 below namely new distributor roads serving the planned KTD (DP1), new sewage pumping stations serving the planned KTD (DP2), and decommissioning of the remaining parts of the former Kai Tak Airport (DP3) have been adequately addressed in this Schedule 3 EIA Report. Figure 1.2 shows the locations of these Schedule 2 DPs. The remaining Schedule 2 DPs will be addressed in further detailed EIA studies by the respective project proponents in the future.

**Table 1.1 List of Schedule 2 Designated Projects Contained within the Kai Tak Development that have been Adequately Addressed in this Schedule 3 EIA Report**

Item	Designated Project	EIAO Reference
DP1	New distributor roads serving the planned KTD	Schedule 2, Part I, Items A.1, A.8 & A.9. Partly referred in Section 1.3 (ii) of EIA Study Brief No. ESB- 152/2006.
DP2	New sewage pumping stations serving the planned KTD	Schedule 2, Part I, Item F.3. Partly referred in Section 1.3 (iii) of EIA Study Brief No. ESB-152/2006.
DP3a	Decommissioning of the remaining parts (Ex-GFS Building and Radar Station) of the former Kai Tak Airport	Schedule 2, Part II, Item 1

- 1.1.10 Broad descriptions of the Schedule 2 DPs listed in Table 1.1 above are given in the following paragraphs.

1.1.11 DP1 - New distributor roads serving the planned KTD

- The major elements of the future ground level road system within KTD include four district distributor roads namely Roads D1, D2, D3 and D4. No new primary distributor road is proposed within KTD. As Roads D1 to D4 are district distributor roads, they are classified as DPs under Item A.1, Part I, Schedule 2 of the EIAO. A section of Road D2 will be running underneath the podium structure of the proposed Stadium Complex. Based on the latest available information, that section of Road D2 is fully enclosed by decking above and by structure on the sides for more than 100 m and is thus classified as DP under Item A.9, Part I, Schedule 2 of the EIAO. For Road D3, a section of road bridge will be constructed above the 600m gap opening. Therefore, it is classified as DP under Item A.8, Part I, Schedule 2 of the EIAO.

1.1.12 DP2 - New sewage pumping stations serving the planned KTD

- Six sewage pumping stations (SPSs), excluding the proposed SPS of the DWFI compound at JVBC (JVBC-PS) as described under DP15 below, are located within KTD. As part of the sewerage improvement scheme in the hinterland to reduce the pollution loading in KTAC, DSD will initially construct two new SPSs, namely PS1 and PS3. These two SPSs are tentatively programmed to be completed in 2012 to convey sewage flow generated from the hinterland to To Kwa Wan Preliminary Treatment Work. PS6 will have to be completed in later 2011 in time for commissioning of the Phase I Berth of the Cruise Terminal in 2012. PS1A is designed to convey sewage flow generated from the public housing sites, schools and residential sites. It has been determined that PS1A is not required for the initial population intake of public housing developments in Sites 1A and 1B in September 2012. Instead the initial sewage flow collected from these housing sites will be discharged directly to the existing sewer along Eastern Road via new gravity sewer as an interim measures. PS1A is planned to be available 2014 or earlier. The reprovision of SPS (NPS) located in the Site 5A1 will be available in 2014. PS2 is located at the Site 1L5 and designed to convey sewage flows generated in the developments in Sites 1M, 1P, 1K, 1L 2A and 2B.
- All these SPSs, except PS6, are with an installed capacity of more than 2000 m<sup>3</sup> per day and are located within 150m from existing and/or planned residential area or educational institution, therefore these SPSs are classified as DPs under Item F.3, Part I, Schedule 2 of the EIAO.
- The proposed PS6 is located near the southern tip of the former Kai Tak Airport runway. The installed capacity of PS6 is more than 2,000m<sup>3</sup> but less than 300,000m<sup>3</sup> per day. PS6 is located at more than 150m away from any existing or planned residential area, place of worship, educational institution, health care institution, site of special scientific interest, site of cultural heritage, bathing beach, marine park or marine reserve, fish culture zone, or seawater intake point. Therefore with reference to Item f.3, Part I, Schedule 2 of the EIAO, the proposed PS6 is not classified as a DP under the EIAO.

1.1.13 DP3a - Decommissioning of the remaining parts (Ex-GFS Building and Radar Station) of the former Kai Tak Airport

- The scope of this DP is primarily to decommission the Ex-GFS Building and Radar Station within the former Kai Tak Airport that were not covered under the previous EIAs on decommissioning of former Kai Tak Airport (namely EIAs for DP4 and DP5).
- The decommissioning of airport facilities is classified as DP under Item 1, Part II, Schedule 2 of the EIAO.

1.1.14 Road D3A and Road D4A are dual 2-lane district distributor roads within the Runway Precinct of the Kai Tak Development (KTD) as shown in Figure 1.1. Road D3A is running along the centre of the Runway Precinct and is replacing the original southern section of Road D3 that runs along the waterfront of the Runway Precinct. Road D4A is an extension of Road D4A connecting Road D4 with the proposed Road D3A (AEIAR/170-2013).

1.1.15 Both Road D3A and Road D4A will play an important role in linking up all the development areas in Runway Precinct of KTD with the hinterland (AEIAR/170-2013).

## 1.2 **Project Scope and Programme**

### 1.2.1 The scope of the works include :

- (i) Construction of a section of dual two-lane Road D3 (Metro Park Section) (MPS) of about 1,130 metres (m) long connecting Road D2 at the former north apron and Road D3A at the former runway, including about 200m under a section of dual two-lane Road D3 (Metro Park Section) (MPS) of about 1,130 metres (m) long connecting Road D2 at the former north apron and Road D3A at the former runway, including 200m underpass with associated 320m depressed road, 360m elevated road and 250m at grade road;
- (ii) A single two-lane Road L12d of about 47m long connecting Road D3A at the former runway;
- (iii) A salt water pumping station and associated water intake;
- (iv) A sewage pumping station; and
- (v) Landscaped deck of about 380m long in total with a minimum width of about 11m above Road D3 (MPS) and landscaped area adjoining Road D3 (MPS) providing a total of about 3.9 hectares of public open space.

### 1.2.2 The scope of the Project comprises (AEIAR/170-2013):

- a) Construction of approximately 1.5km long dual 2-lane carriageway along the former runway;
- b) Construction of footpath;
- c) Construction of approximately 1.5km long landscaped deck above the dual 2-lane carriageway along the former runway; and
- d) Ancillary works including drains, sewers, fresh and salt water supply mains, utilities, landscape softwork and hardworks.

## 1.3 **Purpose of this Manual (AEIAR/130-2009 and AEIAR/170-2013)**

1.3.1 The purpose of this Environmental Monitoring and Audit (EM&A) Manual is to guide the set up of an EM&A programme to ensure compliance with the EIA study recommendations, to assess the effectiveness of the recommended mitigation measures and to identify any further need for additional mitigation measures or remedial action. This Manual outlines the monitoring and audit programme for the proposed Project. It aims to provide systematic procedures for monitoring, auditing and minimising environmental impacts associated with Project activities.

1.3.2 Hong Kong environmental regulations and the Hong Kong Planning Standards and Guidelines have served as environmental standards and guidelines in the preparation of this Manual. In addition, the EM&A Manual has been prepared in accordance with the requirements stipulated in Annex 21 of the EIAO-TM.

1.3.3 This Manual contains the following information:

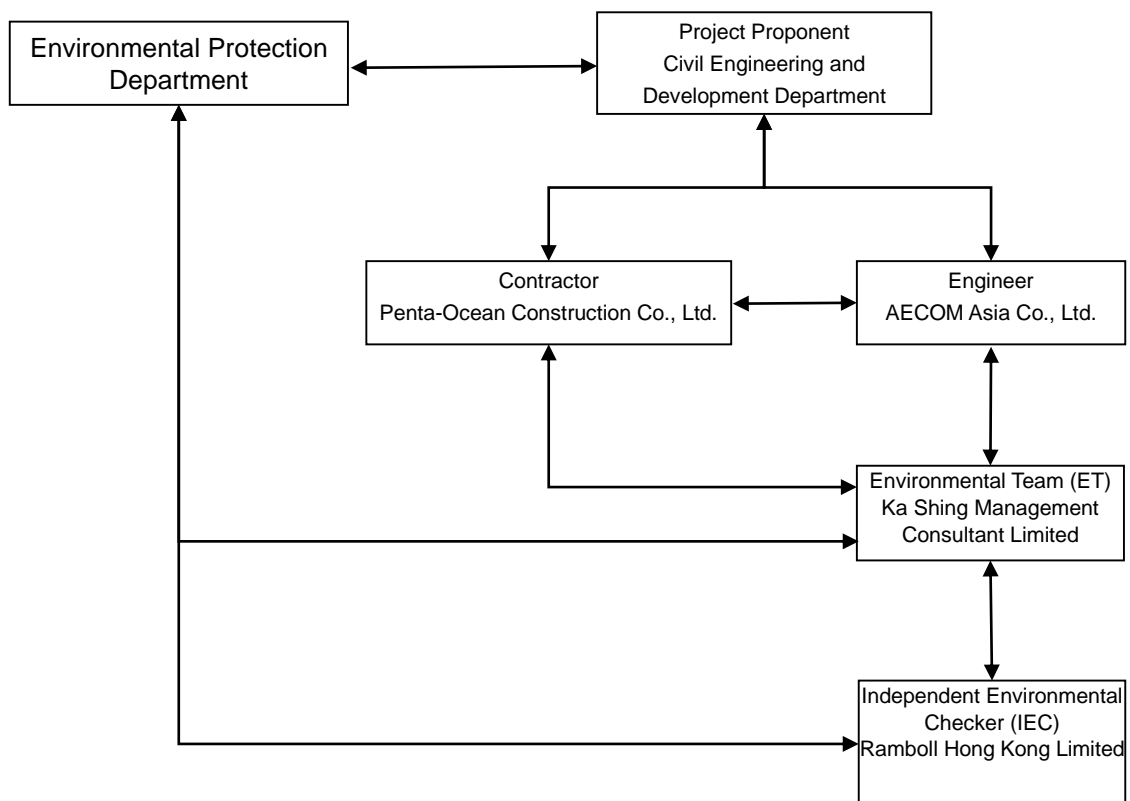
- Responsibilities of the Contractor, the Project Manager or Supervisor, Environmental Team (ET) and Independent Environmental Checker (IEC) with respect to the environmental monitoring and audit requirements during the course of the Project;
- Project organisation;
- The basis for, and description of the broad approach underlying the EM&A programme;
- Requirements with respect to the construction programme schedule and the necessary environmental monitoring and audit programme to track the varying environmental impact;
- Details of the methodologies to be adopted, including all field laboratories and analytical procedures, and details on quality assurance and quality control programme;
- The rationale on which the environmental monitoring data will be evaluated and interpreted;
- Definition of Action and Limit Levels;
- Establishment of Event and Action Plans;
- Requirements for reviewing pollution sources and working procedures required in the event of non-compliance with the environmental criteria and complaints;
- Requirements for presentation of environmental monitoring and audit data and appropriate reporting procedures; and
- Requirements for review of EIA predictions and the effectiveness of the mitigation measures / environmental management systems and the EM&A programme.

1.3.4 For the purpose of this manual, the ET leader, who shall be responsible for and in charge of the ET, shall refer to the person delegated the role of executing the EM&A requirements.

#### 1.4 Project Organization (AEIAR/130-2009 and AEIAR/170-2013)

1.4.1 The roles and responsibilities of the various parties involved in the EM&A process are outlined in the following paragraphs. The proposed Project organization and lines of communication with respect to environmental management for the Project are shown in **Figure 1.3** (Figure 1.2 of (AEIAR/170-2013)).

**Figure 1.3 Project Organisation**



1.4.2 The duties and responsibilities of respective parties are as follows:

##### ***The Contractor***

1.4.3 The Contractor shall report to the Engineer. The duties and responsibilities of the Contractor are:

- To provide assistance to ET in carrying out monitoring;
- To submit proposals on mitigation measures in case of exceedances of Action and Limit Levels in accordance with the Event and Action Plans;
- To implement measures to reduce impact where Action and Limit Levels are exceeded;

- To implement the corrective actions instructed by the Engineer;
- To accompany joint site inspection undertaken by the ET; and
- To adhere to the procedures for carrying out complaint investigation.

***Environmental Team***

1.4.4 The ET Leader and the ET shall be employed to conduct the EM&A programme and ensure the Contractor's compliance with the Project's environmental performance requirements during construction. The ET Leader shall be an independent party from the Contractor and have relevant professional qualifications, or have sufficient relevant EM&A experience subject to the approval of the Engineer's Representative (ER). The ET shall be led and managed by the ET leader. The ET leader shall possess at least 7 years experience in EM&A and/or environmental management.

1.4.5 The duties and responsibilities of the ET are:

- To monitor various environmental parameters as required in this EM&A Manual;
- To analyse the environmental monitoring and audit data and review the success of EM&A programme to cost-effectively confirm the adequacy of mitigation measures implemented and the validity of the EIA predictions and to identify any adverse environmental impacts arising;
- To carry out regular site inspection to investigate and audit the Contractors' site practice, equipment and work methodologies with respect to pollution control and environmental mitigation, and effect proactive action to pre-empt problems; carry out ad hoc site inspections if significant environmental problems are identified;
- To audit and prepare monitoring and audit reports on the environmental monitoring data and site environmental conditions;
- To report on the environmental monitoring and audit results to the IEC, Contractor, the ER and EPD or its delegated representative;
- To recommend suitable mitigation measures to the Contractor in the case of exceedance of Action and Limit Levels in accordance with the Event and Action Plans; and
- To adhere to the procedures for carrying out complaint investigation.

***Engineer or Engineer's Representative***

1.4.6 The Engineer is responsible for overseeing the construction works and for ensuring that the works undertaken by the Contractor in accordance with the specification and contractual requirements. The duties and responsibilities of the Engineer with respect to EM&A may include:

- Supervising the Contractor's activities and ensure that the requirements in the EM&A Manual are fully complied with;
- Informing the Contractor when action is required to reduce impacts in accordance with the Event and Action Plans;
- Participating in joint site inspection undertaken by the ET; and
- Adhering to the procedures for carrying out complaint investigation.

***Independent Environmental Checker***

1.4.7 The Independent Environmental Checker (IEC) shall advise the Engineer's Representative on environmental issues related to the Project. The IEC shall possess at least 7 years experience in EM&A and/or environmental management. The IEC shall be an independent part from the Contractor and the ET.

1.4.8 The duties and responsibilities of the IEC are:

- To review the EM&A works performed by the ET (at least at monthly intervals);
- To carry out random sample check and audit the monitoring activities and results (at least at monthly intervals);
- To review the EM&A reports submitted by the ET;
- To review the effectiveness of environmental mitigation measures and project environmental performance;
- To review the proposal on mitigation measures submitted by the Contractor in accordance with the Event and Action Plans; and
- To adhere to the procedures for carrying out complaint investigation.

1.4.9 Sufficient and suitably qualified professional and technical staff shall be employed by the respective parties to ensure full compliance with their duties and responsibilities, as required under the EM&A programme for the duration of the Project.

1.5 Key **Location** Plan of contract ED/2018/01

The key location plan of this contract is attached in Appendix C.

1.6 **Programme** of contract ED/2018/01

The Accepted Programme of this contract is attached in Appendix D.

1.7 EM&A Programme of Register No. AEIAR-130/2009

According to Condition 3.1 of the Environmental Permit No. EP-337/2009, the EM&A Programme shall be implemented in accordance with the procedures and requirements as set out in sections 1, 2, 15 & 16 of the EM&A Manual of the approved EIA Report (Register No. AEIAR-130/2009), therefore Sections 3 to 14 of the Kai Tak Development EM&A Manual are not applicable to this contract.

1.8 EM&A Programme of Register No. AEIAR-170/2013

According to Condition 3.1 of the EM&A Manual with Register No. AEIAR-170/2013 under Environmental Permit Nos. EP-445/2013 & EP-445/2013/A respectively, the EM&A Programme shall be implemented in accordance with the procedures and requirements as set out in the EM&A Manual. We considered section 6 is relevant to the Project and thus we incorporate this section in the EM&A Manual.

## **2 EM&A ON NEW DISTRIBUTOR ROADS SERVING THE PLANNED KTD**

### **2.1 Introduction**

- 2.1.1 This section details the specific EM&A requirements for Schedule 2 DP1: New Distributor Roads Serving the Planned KTD. The requirements, methodology, equipment, monitoring locations, criteria and protocols for the monitoring and audit of this DP are presented. The project organisation, site environmental audit and reporting requirements are stipulated in Chapters 1, 15 & 16 of this Manual respectively.

### **2.2 Air Quality Impact**

- 2.2.1 Monitoring and audit of the TSP levels shall be carried out during the construction phase by the ET to ensure that any deteriorating air quality could be readily detected and timely action taken to rectify the situation.
- 2.2.2 1-hour and 24-hour average TSP levels shall be measured to indicate the impacts of construction dust on air quality. The 24-hour average TSP levels shall be measured by following the standard high volume sampling method as set out in the Title 40 of the United States Code of Federal Regulations, Chapter 1 (Part 50), Appendix B. Upon agreement from the Engineer's Representative (ER) and the IEC, 1-hour average TSP levels can be measured by direct reading methods to indicate short-term impacts.
- 2.2.3 All relevant data including temperature, pressure, weather conditions, elapsed-time meter reading for the start and stop of the sampler, identification and weight of the filter paper, other local atmospheric factors affecting or affected by site conditions and work progress of the concerned site etc. shall be recorded in detail. A sample data record sheet based on the one presented in the EM&A Guidelines for Development Projects in Hong Kong is shown in Appendix B. The ET Leader may modify the data record sheet for this EM&A programme, of which the format should be agreed by the ER and the IEC.

#### **Monitoring Equipment**

- 2.2.4 High volume samplers (HVSs) in compliance with the following specifications shall be used for carrying out the 1-hour and 24-hour TSP monitoring:
- 0.6 - 1.7 m<sup>3</sup> per minute (20 - 60 standard cubic feet per minute) adjustable flow range;
  - Equipped with a timing / control device with  $\pm 5$  minutes accuracy for 24 hours operation;
  - Installed with elapsed-time meter with  $\pm 2$  minutes accuracy for 24 hours operation;
  - Capable of providing a minimum exposed area of 406 cm<sup>2</sup>;
  - Flow control accuracy:  $\pm 2.5\%$  deviation over 24-hour sampling period;
  - Equipped with a shelter to protect the filter and sampler;
  - Incorporated with an electronic mass flow rate controller or other equivalent devices;
  - Equipped with a flow recorder for continuous monitoring;
  - Provided with a peaked roof inlet;
  - Incorporated with a manometer;
  - Able to hold and seal the filter paper to the sampler housing at horizontal position;
  - Easy to change the filter;
  - Capable of operating continuously for 24-hour period.

- 2.2.5 The ET shall be responsible for the provision of the monitoring equipment. The ET shall provide sufficient number of HVSs with appropriate calibration kit for carrying out the baseline, regular impacts monitoring and ad-hoc monitoring. The HVSs shall be equipped with an electronic mass flow controller and be calibrated against a traceable standard at regular intervals. All the equipment, calibration kit, filter papers, etc, shall be clearly labelled.
- 2.2.6 Initial calibration of the dust monitoring equipment shall be conducted upon installation and prior to commissioning, and at bi-monthly intervals subsequently. The transfer standard shall be traceable to the internationally recognised primary standard and be calibrated annually. The calibration data shall be properly documented for future reference by the concerned parties such as the IEC. All the data shall be converted into standard temperature and pressure condition.
- 2.2.7 The flow-rate of the sampler before and after the sampling exercise with the filter in position shall be verified to be constant and be recorded on the data sheet as shown in **Appendix B**.
- 2.2.8 If the ET proposes to use a direct reading dust meter to measure 1-hour average TSP levels, he/she shall submit sufficient information to the ER and the IEC to prove that the instrument is capable of achieving a comparable result as that of the HVS before it may be used for the monitoring works. The instrument shall also be calibrated regularly, and the 1-hour sampling shall be determined periodically by HVS to check the validity and accuracy of the results measured by direct reading method.
- 2.2.9 Wind data monitoring equipment shall also be provided by the ET and set up at conspicuous locations for logging wind speed and wind direction near to the dust monitoring locations. The equipment installation location shall be proposed by the ET and agreed with the ER in consultation with the IEC. For installation and operation of wind data monitoring equipment, the following points shall be observed:
- (i) The wind sensors shall be installed 10m above ground so that they are clear of obstructions or turbulence caused by the buildings;
  - (ii) The wind data shall be captured by a data logger. The data shall be downloaded for analysis at least once a month;
  - (iii) The wind data monitoring equipment shall be re-calibrated at least once every six months; and
  - (iv) Wind direction should be divided into 16 sectors of 22.5 degrees each.
- 2.2.10 In exceptional situations, the ET may propose alternative methods to obtain representative wind data upon approval from the ER and agreement from the IEC.

#### **Laboratory Measurement / Analysis**

- 2.2.11 A clean laboratory with constant temperature and humidity control and equipped with necessary measuring and conditioning instruments to handle the dust samples collected, shall be available for sample analysis, and equipment calibration and maintenance. The laboratory shall be HOKLAS accredited or other internationally accredited laboratory.
- 2.2.12 If a site laboratory is set up or a non-HOKLAS accredited laboratory is hired for carrying out the laboratory analysis, the laboratory equipment shall be approved by the IEC. Measurement performed by the laboratory shall be demonstrated to the satisfaction of the IEC.
- 2.2.13 The IEC shall conduct regular audit of the measurement performed by the laboratory so as to ensure the accuracy of measurement results. The ET shall provide the ER and the IEC with one copy of the Title 40 of the Code of Federal Regulations, Chapter 1 (Part 50), Appendix B for their reference.

- 2.2.14 Filter paper of size 8"x10" shall be labelled before sampling. It shall be a clean filter paper with no pinholes, and shall be conditioned in a humidity-controlled chamber for over 24-hour and be pre-weighed before use for the sampling.
- 2.2.15 After sampling, the filter paper loaded with dust shall be kept in a clean and tightly sealed bag. The filter paper shall then be returned to the laboratory for reconditioning in the humidity-controlled chamber followed by accurate weighing by an electronic balance with a readout down to 0.1mg. The balance shall be regularly calibrated against a traceable standard.
- 2.2.16 All the collected samples shall be kept in a good condition for 6 months before disposal.

### **Monitoring Locations**

- 2.2.17 The dust monitoring locations are shown in **Figure 2.1**. The selected monitoring locations are the ASRs located near to the construction site(s) of this DP. The proposed air quality monitoring locations are listed in **Table 2.1** below.

**Table 2.1 Air Quality Monitoring Locations**

Location	ASR ID in EIA	Description
AM3	A40	Sky Tower
AM4(A)	A43	The Hong Kong Society for the Blind's Factory cum Sheltered Workshop
AM7	PA59	Hong Kong Children's Hospital

- 2.2.18 The status and locations of the ASRs may change after issuing this Manual. The ET shall propose updated monitoring locations and seek approval from EPD, and agreement from the ER and the IEC before baseline monitoring commences.
- 2.2.19 When alternative monitoring locations are proposed, the following criteria, as far as practicable, shall be followed:
- At the site boundary or such locations close to the major dust emission source;
  - Close to the ASRs;
  - Proper position/sitting and orientation of the monitoring equipment; and
  - Take into account the prevailing meteorological conditions.
- 2.2.20 The ET shall agree with the ER on the position of the HVS for installation of the monitoring equipment. When positioning the samplers, the following points shall be noted:
- A horizontal platform with appropriate support to secure the samplers against gusty wind shall be provided;
  - No two samplers shall be placed less than 2 metres apart;
  - The distance between the sampler and an obstacle, such as buildings, must be at least twice the height that the obstacle protrudes above the sampler;
  - A minimum of 2 metres of separation from walls, parapets and penthouses is required for rooftop samplers;

- (v) A minimum of 2 metres of separation from any supporting structure, measured horizontally is required;
- (vi) No furnace or incinerator flue is nearby;
- (vii) Airflow around the sampler is unrestricted;
- (viii) The sampler is more than 20 metres from the dripline;
- (ix) Any wire fence and gate, to protect the sampler, shall not cause any obstruction during monitoring;
- (x) Permission must be obtained to set up the samplers and to obtain access to the monitoring stations; and
- (xi) A secured supply of electricity is needed to operate the samplers.

### **Baseline Monitoring**

- 2.2.21 Baseline monitoring shall be carried out to determine the ambient 1-hour and 24-hour average TSP levels at the monitoring locations prior to the commencement of the construction works. During the baseline monitoring, there shall not be any construction or dust generating activities in the vicinity of the monitoring stations. The baseline monitoring will provide data for the determination of the appropriate Action Levels with the Limit Levels set against statutory or otherwise agreed limits.
- 2.2.22 Before commencing the baseline monitoring, the ET shall inform the IEC of the baseline monitoring programme such that the IEC can conduct on-site audit to ensure accuracy of the baseline monitoring results.
- 2.2.23 Baseline monitoring shall be carried out at all of the designated monitoring locations for at least 14 consecutive days prior to the commissioning of the construction works to obtain daily 24-hour TSP samples. One-hour sampling shall also be done at least 3 times per day. Baseline monitoring shall be carried out under typical weather conditions. General meteorological conditions (wind speed, direction and precipitation) and notes regarding any significant adjacent dust producing sources shall also be recorded throughout the baseline monitoring period.
- 2.2.24 In case the baseline monitoring cannot be carried out at the designated monitoring locations during the baseline monitoring period, the ET Leader shall carry out the monitoring at alternative locations which can effectively represent the baseline conditions at the impact monitoring locations. The alternative baseline monitoring location shall be approved by the ER and agreed with the IEC.
- 2.2.25 In exceptional cases, when insufficient baseline monitoring data or questionable results are obtained, the ET Leader shall liaise with the ER, the IEC and EPD to agree on an appropriate set of data to be used as a baseline reference and submit to the ER and the IEC for agreement and EPD for approval.
- 2.2.26 Baseline checking of ambient TSP levels shall be carried out every three months at each monitoring location, when no dusty works activities are in operation. If the ET considers that significant changes in the ambient conditions have arisen, a repeat of the baseline monitoring may be carried out to update the baseline levels. The revised baseline levels, and hence the revised Action and Limit Levels, shall be agreed with the ER, EPD and the IEC.

### **Impact Monitoring**

- 2.2.27 The ET shall carry out impact monitoring during the construction phase of the DP. For regular impact monitoring, a sampling frequency of at least once in every six days shall be strictly observed at all of the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six days shall be undertaken when the highest dust impact occurs.
- 2.2.28 Before commencing the impact monitoring, the ET shall inform the IEC of the impact monitoring programme such that the IEC can conduct on-site audit to ensure accuracy of the impact monitoring results.
- 2.2.29 The specific time to start and stop the 24-hour TSP monitoring shall be clearly defined for each location and be strictly followed by the field operator.
- 2.2.30 In case of non-compliance with the Action and Limit Levels, more frequent monitoring, as specified in the Event and Action Plan in **Table 2.2**, shall be conducted within 24 hours after the non-compliance is known. This additional monitoring shall be continued until the excessive dust emission or the deterioration in air quality is rectified.

### **Event and Action Plan**

- 2.2.31 The baseline monitoring results form the basis for determining the Action and Limit Levels for the impact monitoring. The ET shall compare the impact monitoring results with the Action and Limit Levels for 1-hour and 24-hour average TSP. **Table 2.2** shows the Action and Limit Levels to be used. Should non-compliance of the Action and Limit Levels occurs, action in accordance with the Event and Action Plan in **Table 2.3** shall be carried out.

**Table 2.2 Action and Limit Levels for Construction Dust Monitoring**

Parameter	Action Level <sup>(1)</sup>	Limit Level
24-hour average TSP	BL ≤ 200 µg m <sup>-3</sup> , AL = (BL * 1.3 + LL)/2 BL > 200 µg m <sup>-3</sup> , AL = LL	260 µg m <sup>-3</sup>
1-hour average TSP	BL ≤ 384 µg m <sup>-3</sup> , AL = (BL * 1.3 + LL)/2 BL > 384 µg m <sup>-3</sup> , AL = LL	500 µg m <sup>-3</sup>

Note: (1) BL = Baseline level, AL = Action Level, LL = Limit

**Table 2.3 Event and Action Plan for Construction Dust Monitoring**

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded by one sampling	<ol style="list-style-type: none"> <li>1. Identify source and investigate the causes of exceedance;</li> <li>2. Inform Contractor, IEC and ER;</li> <li>3. Repeat measurement to confirm finding.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practice;</li> <li>2. Amend working methods if appropriate.</li> </ol>
Action Level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> <li>1. Identify source and investigate the causes of exceedance;</li> <li>2. Inform Contractor, IEC and ER;</li> <li>3. Increase monitoring frequency to daily;</li> <li>4. Discuss with IEC and Contractor on remedial actions required;</li> <li>5. Assess the effectiveness of Contractor's remedial actions;</li> <li>6. If exceedance continues, arrange meeting with IEC and ER;</li> <li>7. If exceedance stops, cease additional monitoring.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise implementation of remedial measures;</li> <li>5. Conduct meeting with ET and IEC if exceedance continues.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with ET and IEC on proper remedial actions;</li> <li>2. Submit proposals for remedial actions to ER and IEC within three working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Amend proposal if appropriate.</li> </ol>
Limit Level being exceeded by one sampling	<ol style="list-style-type: none"> <li>1. Identify source and investigate the causes of exceedance;</li> <li>2. Inform Contractor, IEC, ER, and EPD;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Assess effectiveness of Contractor's remedial actions and keep EPD, IEC and ER informed of the results.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise implementation of remedial measures;</li> <li>5. Conduct meeting with ET and IEC if exceedance continues.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Discuss with ET and IEC on proper remedial actions;</li> <li>3. Submit proposals for remedial actions to ER and IEC within three working days of notification;</li> <li>4. Implement the agreed proposals.</li> </ol>
Limit Level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> <li>1. Notify IEC, ER, Contractor and EPD;</li> <li>2. Repeat measurement to confirm findings;</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of exceedance in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC,</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Discuss with ET, ER and IEC on proper remedial actions;</li> </ol>

**Table 2.3 Event and Action Plan for Construction Dust Monitoring**

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
	3. Carry out analysis of Contractor's working procedures to identify source and investigate the causes of exceedance; 4. Increase monitoring frequency to daily; 5. Arrange meeting with IEC, ER and Contractor to discuss the remedial actions to be taken; 6. Assess effectiveness of Contractor's remedial actions and keep EPD, IEC and ER informed of the results; 7. If exceedance stops, cease additional monitoring	3. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.	agree with the Contractor on the remedial measures to be implemented; 4. Supervise implementation of remedial measures; 5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.	3. Submit proposals for remedial actions to IEC within three working days of notification; 4. Implement the agreed proposals; 5. Submit further remedial actions if problem still not under control; 6. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.

### **Mitigation Measures**

- 2.2.32 Mitigation measures for construction dust are recommended in the EIA Report. The *Contractor* shall be responsible for the design and implementation of these measures.
- 2.2.33 In order to ensure compliance with the acceptable criteria at the ASRs at all time, requirements of the *Air Pollution Control (Construction Dust) Regulation* shall be adhered to during the construction period. Misting for any stockpile of materials and provision of windbreaks on three sides are proposed to prevent wind erosion. An environmental monitoring and auditing program shall be implemented to monitor the construction process in order to enforce controls and modify methods of work if dusty conditions are arisen. In addition, the following good site practices are recommended to minimise dust and other air pollutants impacts during excavation, transportation, and loading and unloading of dusty material:
- Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.
  - Misting for the dusty material should be carried out before being loaded into the vehicle.
  - Any vehicle with an open load carrying area should have properly fitted side and tail boards.
  - Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin.
  - The tarpaulin should be properly secured and should extent at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation.
  - The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways insider the site. On-site unpaved roads should be compacted and kept free of lose materials.
  - Vehicle washing facilities should be provided at every vehicle exit point.
  - The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.
  - Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.
  - Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides.
  - Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.
- 2.2.34 The implementation schedule for the recommended air quality impact mitigation measures is presented in **Appendices A and A1** respectively.

## 2.3 Noise Impact

### Noise Parameters

#### Construction Phase

- 2.3.1 The construction noise level shall be measured in terms of the A-weighted equivalent continuous sound pressure level ( $L_{eq}$ ).  $L_{eq}$  (30 minutes) shall be used as the monitoring parameter for the time period between 0700 and 1900 hours on normal weekdays. For all other time periods,  $L_{eq}$  (5 minutes) shall be employed for comparison with the Noise Control Ordinance (NCO) criteria.
- 2.3.2 Supplementary information for data auditing, statistical results such as  $L_{10}$  and  $L_{90}$  shall also be obtained for reference. A sample data record sheet based on the one presented in the EM&A Guidelines for Development Projects in Hong Kong is shown in **Appendix B**. The ET Leader may modify the data record sheet for this EM&A programme, of which the format should be agreed by the ER and the IEC.

### Monitoring Equipment

- 2.3.3 As referred to in the Technical Memorandum (TM) issued under the NCO, sound level meters in compliance with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring. Immediately prior to and following each noise measurement the accuracy of the sound level meter shall be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration level from before and after the noise measurement agree to within 1.0 dB.
- 2.3.4 Noise measurements shall not be made in fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s.
- 2.3.5 The ET is responsible for the provision of the monitoring equipment. He shall ensure that sufficient noise measuring equipment and associated instrumentation are available for carrying out the baseline monitoring, regular impact monitoring and ad hoc monitoring. All the equipment and associated instrumentation shall be clearly labelled.

### Monitoring Locations

- 2.3.6 The locations of construction and operational noise monitoring stations are summarized in **Table 2.4** and shown in **Figure 2.2**. These locations represent the worst affected sensitive receivers during construction.

**Table 2.4 Noise Monitoring Stations**

Noise Monitoring Station	NSR ID in EIA Report	Noise Monitoring Location
<b>Construction Noise</b>		
M11	N18	The Hong Kong Society for the Blind's Factory cum Sheltered Workshop
M12	PN83, PN84 and PN84A	Hong Kong Children's Hospital

- 2.3.7 The status and locations of noise sensitive receivers may change after issuing this Manual. If such case exists, the ET Leader shall propose updated monitoring locations and seek approval from EPD and **agreement** from the ER and the IEC before baseline monitoring commences.
- 2.3.8 When alternative monitoring locations are proposed, the monitoring locations shall be chosen based on the following criteria:
- (i) Monitoring at sensitive receivers close to the major site activities which are likely to have noise impacts;
  - (ii) Monitoring at the noise sensitive receivers as defined in the Technical Memorandum; and
  - (iii) Assurance of minimal disturbance to the occupants during monitoring.
- 2.3.9 The monitoring station shall normally be at a point 1 m from the exterior of the sensitive receiver building facade and be at a position 1.2 m above the ground. If there is problem with access to the normal monitoring position, an alternative position may be chosen, and a correction to the measurements shall be made. For reference, a correction of +3 dB(A) shall be made to the free field measurements. The ET shall agree with the IEC on the monitoring position and the corrections adopted. Once the positions for the monitoring stations are chosen, the baseline monitoring and the impact monitoring shall be carried out at the same positions.

### **Baseline Monitoring**

#### **Construction Phase**

- 2.3.10 The ET shall carry out baseline noise monitoring prior to the commencement of the construction works. The baseline monitoring shall be carried out daily for a period of at least two weeks. Before commencing the baseline monitoring, the ET shall develop and submit to the IEC the baseline monitoring programme such that the IEC can conduct on-site audit to ensure accuracy of the baseline monitoring results.
- 2.3.11 There shall not be any construction activities in the vicinity of the stations during the baseline monitoring.
- 2.3.12 In exceptional cases, when insufficient baseline monitoring data or questionable results are obtained, the ET Leader shall liaise with the ER, EPD and IEC to agree on an appropriate set of data to be used as a baseline reference and submit to the ER and IEC for agreement and EPD for approval.

## **Impact Monitoring**

### **Construction Phase**

- 2.3.13 Noise monitoring shall be carried out at all the designated monitoring stations. The monitoring frequency shall depend on the scale of the construction activities. The following is an initial guide on the regular monitoring frequency for each station on a weekly basis when noise generating activities are underway:
- one set of measurements between 0700 and 1900 hours on normal weekdays.
- 2.3.14 If construction works are extended to include works during the hours of 1900 – 0700 as well as public holidays and Sundays, additional weekly impact monitoring shall be carried out during respective restricted hours periods. Applicable permits under NCO shall be obtained by the *Contractor*.
- 2.3.15 If a school exists near the construction activity, noise monitoring shall be carried out at the monitoring stations for the schools during the school examination periods. The ET Leader shall liaise with the school's personnel and the Examination Authority to ascertain the exact dates and times of all examination periods during the course of the contract.
- 2.3.16 In case of non-compliance with the construction noise criteria, more frequent monitoring, as specified in the Action Plan in **Table 2.6**, shall be carried out. This additional monitoring shall be continued until the recorded noise levels are rectified or demonstrated to be unrelated to the construction activities.

## **Event and Action Plan**

### **Construction Phase**

- 2.3.17 The Action and Limit levels for construction noise are defined in **Table 2.5**. Should non-compliance of the criteria occur, action in accordance with the Event and Action Plan in **Table 2.6** shall be implemented.

**Table 2.5 Action and Limit Levels for Construction Noise**

<b>Time Period</b>	<b>Action Level</b>	<b>Limit Level</b>
0700 – 1900 hours on normal weekdays	When one documented compliant is received	75 dB(A) *

Notes: If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

\* 70 dB(A) and 65 dB(A) for schools during normal teaching periods and school examination periods, respectively.

## **Mitigation Measures**

### **Construction Phase**

- 2.3.18 To alleviate the construction noise impact on the affected NSRs, movable noise barriers and acoustic mats are proposed to be provided for particular items of plant and construction works. It is anticipated that a movable noise barrier with a cantilevered upper portion located within 5m from any static or mobile plant can provide 5 dB(A) noise reduction for mobile plant and 10 dB(A) noise reduction for static plant. The barrier material shall have a surface mass of not less than 14 kg/m<sup>2</sup> on skid footing with 25mm thick internal sound absorptive lining to achieve the maximum screening effect.
- 2.3.19 In addition, the good site practices listed below should be adopted by all the Contractors to further ameliorate the noise impacts.
- Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program.
  - Silencers or mufflers on construction equipment should be utilised and should be properly maintained during the construction program.
  - Mobile plant, if any, should be sited as far away from NSRs as possible.
  - Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum.
  - Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.
  - Material stockpiles and other structures should be effectively utilised, wherever practicable, in screening noise from on-site construction activities.
- 2.3.20 If the above measures are not sufficient to restore the construction noise quality to acceptable levels upon the advice of ET Leader, the *Contractor* shall liaise with the ET Leader to identify further mitigation measures. They shall be proposed to ER for approval, and the *Contractor* shall then implement these additional mitigation measures.
- 2.3.21 The implementation schedule for the recommended mitigation measures is presented in **Appendices A and A1** respectively.

**Table 2.6 Event/Action Plan for Construction Noise**

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action Level being exceeded	<ol style="list-style-type: none"> <li>1. Notify ER, IEC and Contractor;</li> <li>2. Carry out investigation;</li> <li>3. Report the results of investigation to the IEC, ER and Contractor;</li> <li>4. Discuss with the IEC and Contractor on remedial measures required;</li> <li>5. Increase monitoring frequency to check mitigation effectiveness.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> <li>1. Review the investigation results submitted by the ET;</li> <li>2. Review the proposed remedial measures by the Contractor and advise the ER accordingly;</li> <li>3. Advise the ER on the effectiveness of the proposed remedial measures.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise the implementation of remedial measures.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposals to IEC and ER;</li> <li>2. Implement noise mitigation proposals.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>
Limit Level being exceeded	<ol style="list-style-type: none"> <li>1. Inform IEC, ER, Contractor and EPD;</li> <li>2. Repeat measurements to confirm findings;</li> <li>3. Increase monitoring frequency;</li> <li>4. Identify source and investigate the cause of exceedance;</li> <li>5. Carry out analysis of Contractor's working procedures;</li> <li>6. Discuss with the IEC, Contractor and ER on remedial measures required;</li> <li>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</li> <li>8. If exceedance stops, cease additional monitoring.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> <li>1. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise the implementation of remedial measures;</li> <li>5. If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC and ER within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Submit further proposal if problem still not under control;</li> <li>5. Stop the relevant portion of works as instructed by the ER until the exceedance is abated.</li> </ol> <p>(The above actions should be taken within 2 working days after the exceedance is identified)</p>

## 2.4 Water Quality Impact

### Introduction

- 2.4.1 No off-site marine water quality impact would be expected from the Project and given that there would not be any marine-based works for the proposed works, water quality monitoring is not considered necessary. However, it is recommended that regular site audits (at least once per week) be undertaken to inspect the construction activities and works areas in order to ensure the recommended mitigation measures are properly implemented. Proposed mitigation measures for containing and minimizing water quality impacts are listed in the implementation schedule given in **Appendices A and A1** respectively.

### Site Audits

- 2.4.2 Implementation of regular site audits (at least once per week) is to ensure that the recommended mitigation measures are to be properly undertaken. It can also provide an effective control of any malpractices and therefore achieve continual improvement of environmental performance on site.

- 2.4.3 Site audits shall include site inspections and monitoring audits.

### Site Inspections

- 2.4.4 Site inspections shall be carried out by the ET and shall be based on the mitigation measures for water pollution control recommended in the implementation schedule as attached in **Appendices A and A1** respectively. In the event that the recommended mitigation measures are not fully or properly implemented, deficiency shall be recorded and reported to the site management. Suitable actions are to be carried out to:

- Investigate the problems and the causes;
- Issue action notes to the Contractor which is responsible for the works;
- Implement remedial and corrective actions immediately;
- Re-inspect the site conditions upon completion of the remedial and corrective actions; and
- Record the event and discuss with the Contractor for preventive actions.

### Monitoring Audits

- 2.4.5 Monitoring audits are to be undertaken to ensure that a valid discharge license has been issued by EPD prior to the discharge of effluent from the Project site. Parameters included in the WPCO licence, will also be included in the monitoring programme. The chemical testing of water samples collected in the monitoring programme should be undertaken by a Hong Kong Laboratory Accreditation Scheme (HOKLAS) accredited laboratory. The audit results reflect whether the effluent quality is in compliance with the discharge license requirements and that the recommended water quality mitigation measures are properly implemented. In case of non-compliance, suitable actions should be undertaken to:

- Notify the site management for the non-compliance;
- Identify the sources of pollution;
- Check the implementation status of the recommended mitigation measures;
- Investigate the operating conditions of the on-site treatment systems;
- Implement corrective and remedial actions to improve the effluent quality;
- Increase monitoring frequency until the effluent quality is in compliance with the discharge licence requirements; and
- Record the non-compliance and propose preventive measures.

## 2.5 Waste Management Implications

### **Introduction**

- 2.5.1 Waste management will be the Contractor's responsibility to ensure that all wastes produced during the construction works of the Project are handled, stored and disposed of in accordance with good waste management practices and EPD's regulations and requirements.
- 2.5.2 Waste materials generated during the construction works, such as, general refuse and chemical wastes, are recommended to be audited at regular intervals (at least once per week) to ensure that proper storage, transportation and disposal practices are being implemented. This monitoring of waste management practices will ensure that these solid and liquid wastes are not disposed into the nearby harbour waters. The Contractor will be responsible for the implementation of any mitigation measures to minimise waste or redress problems arising from the waste materials.

### **Waste Control and Mitigation Measures**

- 2.5.3 Mitigation measures for waste management are summarised below. With the appropriate handling, storage and removal of waste arisings during the construction works as defined below, the potential to cause adverse environmental impacts will be minimised.

### ***Good Site Practices***

- 2.5.4 Adverse impacts related to waste management are not expected to arise, provided that good site practices are strictly followed. Recommendations for good site practices during the construction works include:
- Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site;
  - Training of site personnel in proper waste management and chemical waste handling procedures;
  - Provision of sufficient waste disposal points and regular collection for disposal;
  - Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;
  - Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors;
  - A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites).

### ***Waste Reduction Measures***

- 2.5.5 Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:
- Sorting C&D waste from construction activities to recover recyclable portions such as metals;
  - Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;
  - Encouraging collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force;
  - Recycling any unused chemicals or those with remaining functional capacity;
  - Proper storage and site practices to minimise the potential for damage or contamination of construction materials;
  - Planning and stocking construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.
- 2.5.6 In addition to the above measures, specific mitigation measures are recommended below for the identified waste arisings to minimise environmental impacts during handling, transportation and disposal of these wastes.

### ***Construction and Demolition Material***

- 2.5.7 The C&D material should be sorted on-site into inert C&D material (that is, public fill) and C&D waste. The inert C&D material would require disposal to the designated public fill reception facility. C&D waste, such as steel and other metals should be re-used or recycled and, as a last resort, disposed of to landfill. It is recommended that a suitable area be designated to facilitate the sorting process and a temporary stockpiling area will be required for the separated materials.
- 2.5.8 In order to monitor the disposal of public fill and C&D waste at public filling facilities and landfills, respectively, and to control fly tipping, a trip-ticket system should be included as one of the contractual requirements and implemented by the ET. The IEC should be responsible for auditing the results of the system.

### ***General Refuse***

- 2.5.9 General refuse should be stored in enclosed bins or compaction units separate from C&D material. A licensed waste collector should be employed by the Contractor to remove general refuse from the site, separately from C&D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment or creating odour nuisance or pest and vermin problem.

### Chemical Wastes

- 2.5.10 After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the *Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes*. Spent chemicals should be collected by a licensed collector for disposal at the CWTF or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.
- 2.5.11 **Table 2.7** provides a summary of the various waste types likely to be generated during the construction works, together with the recommended handling and disposal methods.

**Table 2.7 Summary of Waste Handling Procedures and Disposal Routes**

Waste Type	Generated From Works Item	Total Quantity Generated	Quantity to be disposed off-site / re-used	Handling	Disposal
C&D Material	Distributor roads serving the planned Kai Tak Development	2,217 m <sup>3</sup> in total	Public fill / on-site reuse	Dust and water quality mitigation measures	Sort on-site into Inert C&D material to be disposed off-site to the designated public fill reception facility, C&D material should be reused as far as practicable
Chemical Wastes	Lubrication oil, fuel etc. from operation, maintenance, and servicing of construction plant	Few cubic metres per month (preliminary estimate)	Few cubic metres per month (preliminary estimate)	Recycle on-site or by licensed companies Stored on-site within suitably designed containers	Chemical Waste Treatment Facility or other licensed facility
General Refuse	Waste paper, discarded containers etc. generated from workforce	Few cubic metres per month (preliminary estimate)	Few cubic metres per month (preliminary estimate)	Provide on-site refuse collection points	Refuse station for compaction and containerisation and then to landfill

- 2.5.12 The implementation schedule of the recommended mitigation measures is presented in **Appendices A and A1** respectively

## 2.6 Land Contamination Impact

- 2.6.1 The EIA study has evaluated the potential land contamination issues that may pose impacts on the construction of the new distributor roads. As indicated in the EIA study, no potential land contamination associated with Roads D1, D2 & D3 is anticipated; however potential land contamination impacts in association with the proposed Road D4 alignment were revealed from the land contamination investigations.
- 2.6.2 The proposed Road D4 alignment would encroach upon a small part of the sites of the ex- GFS building, the Radar Station and the EMSD Kowloon Bay Vehicle Repairing and Maintenance Workshop. Based on the findings of land contamination assessment, the extent of identified contamination within the ex-GFS building and the Radar Station does not fall within the alignment of Road D4, therefore adverse environmental impact of the ex-GFS building and the Radar Station in respect of land contamination on Road D4 is not anticipated. Therefore upon completion of any necessary decontamination works at the EMSD Kowloon Bay Vehicle Repairing and Maintenance Workshop, no adverse residual environmental impact in respect of land contamination on Road D4 is anticipated.
- 2.6.3 However, it should be noted that some small parts of the ex-GFS building and Radar Station including the transformer room and the generator room etc. were still under operation during the previous land contamination site investigation (SI), SI at those areas was not possible due to site accessibility and safety issues. For these remaining areas with potential land contamination concerns, a supplementary land contamination SI was recommended to be carried out upon the cessation of the operations under the Kai Tak Development Project. A supplementary sampling plan providing the sampling and laboratory analysis information for the supplementary SI in these areas has been provided in the respective CAR and CAR/RAP for Radar Station and ex-GFS building respectively.
- 2.6.4 During site investigation, no exceedances in Dutch B level were found among the soil samples collected in the areas surrounding the inaccessible areas in both Radar Station and ex-GFS building, contamination, if any, within those inaccessible areas are considered localized and surmountable and its impacts on the surrounding environment are considered to be minimal. It should be noted that those inaccessible areas do not fall within the alignment of Road D4 and thus any contamination identified within those inaccessible areas in the future would not affect the assessment on DP1 Project presented in this section.
- 2.6.5 For Electrical and Mechanical Services Department (EMSD) Kowloon Bay Vehicle Maintenance Workshop, EMSD as the current occupant shall conduct a detailed land contamination assessment and complete the necessary remediation prior to handing over the site back to the Government for construction of the proposed Road D4. The implementation schedule of the recommended mitigation measures is presented in **Appendices A and A1** respectively.
- 2.6.6 With proper implementation and completion of the appropriate remediation action by EMSD for the Kowloon Bay Vehicle Maintenance Workshop site next to a section of Road D4, further mitigation measures with regards to land contamination would not be necessary for the construction and operation of this project. Hence, no environmental monitoring and audit requirements with regards to land contamination will be required for this project

## 2.7 Impact on Cultural Heritage

- 2.7.1 The proposed Road D1 is situated in an area of archaeological potential. The archaeological investigation recently conducted for KTD confirmed that there is no archaeological potential in the vicinity of Road D1 except the area around Trench AA3. Further archaeological investigation and rescue excavation for the area around Trench AA3 will be conducted as the mitigation recommendations for KTD. No further archaeological investigation or mitigation will be required for Road D1. Proposed Road D1 is not in the vicinity of any built heritage resources and no adverse impacts will arise from the construction of Road D1.
- 2.7.2 The alignment of Roads D3 and D4 are in the vicinity of Fire Station C together with its adjacent pole, runway and seawall. However, the construction of Roads D3 and Road D4 would not encroach onto the site of Fire Station C and its adjacent wind pole. Besides, the construction of Roads D3 and Road D4 would also not affect the seawall and the shape of the runway, no adverse impacts on built heritage resources will arise from the construction of Roads D3 and D4. Besides, since the proposed Roads D2, D3 and D4 are all located on reclaimed land, the construction of the proposed Roads D2, D3 and D4 will not cause any adverse impacts on archaeological resources.
- 2.7.3 No mitigation will be required for the proposed DP1 Project and no EM&A requirements will be necessary.

## 2.8 Landscape and Visual Impact

### Introduction

- 2.8.1 The EIA has recommended landscape and visual mitigation measures to be undertaken during both the construction and operational phases of the project. This section outlines the monitoring and audit of these measures.
- 2.8.2 The sensitive receivers are shown in **Figure 2.4A, 2.4B, 2.5A, 2.5B, 2.6A, 2.6B** (AEIAR-130/2009).

### Methodology and Criteria (AEIAR-130/2009 and AEIAR-170/2013)

- 2.8.3 The design, implementation and maintenance of landscape and visual mitigation measures should be checked to ensure that they are fully realized and that potential conflicts between the proposed landscape measures and any other project works and operational requirements are resolved at the earliest possible date and without compromise to the intention of the mitigation measures.
- 2.8.4 Site inspection and audit is necessary in the operation stage.

**Table 2.8 Monitoring Programme (Table 2.8 of AEIAR-130/2009)**

Stage	Monitoring Task	Monitoring Report	Form Approval of	Frequency
Design	Monitoring of design works against the recommendations of the landscape and visual impact assessments within the EIA should be undertaken during detailed design and tender stages, to ensure that they fulfil the intentions of the mitigation measures. Any changes to the design, including design changes on site should also be checked.	Report by ER confirming that the design conforms to requirements of EP	Approved by Client	At Completion of Design Stage
Construction	Monitoring of the contractor's operations during the construction period.	Report on Contractor's compliance, by ET	Counter-signature of report by IEC	Weekly
Establishment Works	Monitoring of the planting works during the 24-month Establishment period after completion of the construction works	Report on Contractor's compliance, by ET	Counter-signature of report by IEC	3 months

Design (AEIAR-130/2009 & AEIAR-170/2013)

- 2.8.5 The mitigation measures proposed within the EIA to mitigate the landscape and visual impacts of the scheme should be embodied into the detailed engineering design and landscape design drawings and contract documents. Designs should be checked to ensure that the measures are fully incorporated and that potential conflicts with civil engineering, geo-technical, structural, lighting, signage, drainage, underground utility and operational requirements are resolved prior to construction.

Construction & Establishment Period (AEIAR-130/2009 & AEIAR-170/2013)

- 2.8.6 The implementation of landscape construction works and subsequent maintenance operations during the 12-month establishment period must be supervised by fully qualified Landscape Resident Site Staff (Registered Landscape Architect or Professional Member of the Hong Kong Institute of landscape Architects).
- 2.8.7 Measures to mitigate landscape and visual impacts during construction should be checked to ensure compliance with the intended aims of the measures.
- 2.8.8 The progress of the engineering works shall be regularly reviewed on site to identify the earliest practical opportunities for the landscape works to be undertaken.

**Baseline Monitoring (AEIAR-130/2009 & AEIAR-170/2013)**

- 2.8.9 A one off survey shall be conducted prior to commencement of any construction works. A photographic record of the site at the time of the contractor's possession of the site shall be prepared by the Contractor and approved by the ER. The approved photographic Record shall be submitted to the Project proponent, ET, IEC and EPD for record.

**Event/Action Plan for Landscape and Visual Works (AEIAR-130/2009 & AEIAR-170/2013)**

- 2.8.10 Should non-compliance of the landscape and visual impacts occur, actions in accordance with the action plan stated in **Table 2.9** should be carried out.

**Table 2.9 Event and Action Plan for Landscape and Visual Impact (Table 2.9 of AEIAR-130/2009 & Table 6.2 of AEIAR-170/2013)**

EVENT ACTION LEVEL	ACTION			
	ET	IEC	ER	CONTRACTOR
Design Check	<ul style="list-style-type: none"> <li>Check final design conforms to the requirements of EP and prepare report.</li> </ul>	<ul style="list-style-type: none"> <li>Check report.</li> <li>Recommend remedial design if necessary</li> </ul>	<ul style="list-style-type: none"> <li>Undertake remedial design if necessary</li> </ul>	
Non-conformity on one occasion	<ul style="list-style-type: none"> <li>Identify Source</li> <li>Inform IEC and ER</li> <li>Discuss remedial actions with IEC, ER and Contractor</li> <li>Monitor remedial actions until rectification has been completed</li> </ul>	<ul style="list-style-type: none"> <li>Check report</li> <li>Check Contractor's working method</li> <li>Discuss with ET and Contractor on possible remedial measures</li> <li>Advise ER on effectiveness of proposed remedial measures.</li> <li>Check implementation of remedial measures.</li> </ul>	<ul style="list-style-type: none"> <li>Notify Contractor</li> <li>Ensure remedial measures are properly implemented</li> </ul>	<ul style="list-style-type: none"> <li>Amend working methods</li> <li>Rectify damage and undertake any necessary replacement</li> </ul>
Repeated Non-conformity	<ul style="list-style-type: none"> <li>Identify Source</li> <li>Inform IEC and ER</li> <li>Increase monitoring frequency</li> <li>Discuss remedial actions with IEC, ER and Contractor</li> <li>Monitor remedial actions until rectification has been completed</li> <li>If non-conformity stops, cease additional monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Check monitoring report</li> <li>Check Contractor's working method</li> <li>Discuss with ET and Contractor on possible remedial measures</li> <li>Advise ER on effectiveness of proposed remedial measures</li> <li>Supervise implementation of remedial measures.</li> </ul>	<ul style="list-style-type: none"> <li>Notify Contractor</li> <li>Ensure remedial measures are properly implemented</li> </ul>	<ul style="list-style-type: none"> <li>Amend working methods</li> <li>Rectify damage and undertake any necessary replacement</li> </ul>

### **Mitigation Measures**

- 2.8.11 The landscape and visual impact assessment of the EIA recommends a series on mitigation measures, as noted below:

#### **Landscape and Visual Mitigation Measures during Construction Phase**

(a) CM1

- All existing trees should be carefully protected during construction (AEIAR-130/2009).
- Minimised construction area and contractor's temporary works areas (AEIAR-170/2013).

(b) CM2

- Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work (AEIAR-130/2009).
- Control of night-time lighting and glare by hooding all lights (AEIAR-170/2013)

(c) CM3

- Control of night-time lighting (AEIAR-130/2009).
- Erection of decorative mesh screens or construction hoardings around works areas in visually unobtrusive colours (AEIAR-170/2013)

(d) CM4

- Erection of decorative screen hoarding (AEIAR-130/2009).
- Reduction of construction period to practical minimum (AEIAR-170/2013)

(e) CM5

- Limitation of / ensuring no run-off into surrounding landscape and adjacent water sea areas (AEIAR-170/2013)

(f) CM6

- Temporary or advance landscape should be provided along the temporary access roads to the Cruise Terminal until such time as road D3 is open (AEIAR-170/2013)

### **Landscape and Visual Mitigation Measures during Operation Phase**

(a) OM1

- Compensatory tree planting should be incorporated into the proposed projects where trees are affected (AEIAR-130/2009).
- All above ground structures shall be sensitively designed with regard to the form, material and finishes and shall respond to the existing and planned urban context (AEIAR-170/2013).

(b) OM2

- Tall buffer screen tree / shrub / climber planting should be incorporated to soften hard engineering structures and facilities (AEIAR-130/2009).
- Streetscape elements shall be sensitively designed in a manner that responds to the existing and planned urban context (AEIAR-170/2013).

(c) OM3

- Sensitive streetscape design should be incorporated along all new roads to reflect the new urban development in Kai Tak (AEIAR-130/2009).
- Attractive soft landscape in areas adjoining any visible structures such as tall buffer screen tree/shrub/climber planting, vertical greening and roof greening where appropriate should be incorporated so as to provide a visual softening and greening effect and soften hard engineering structures and facilities (AEIAR-170/2013).

(d) OM4

- Structure, ornamental tree / shrub / climber planting should be provided along roadside amenity strips and central dividers to enhance the townscape quality, where space is available (AEIAR-130/2009).
- Structure, ornamental tree/shrub/climber planting should be provided along roadside amenity strips to enhance the townscape quality, where space is available (AEIAR-170/2013)

(e) OM5

- Aesthetically pleasing design as regard to the form, material and finishes should be incorporated to all buildings, engineering structures and associated infrastructure facilities (AEIAR-130/2009).
- Appropriate design of street lighting to avoid glare and light pollution to surrounding areas (AEIAR-170/2013) (OM5)

(f) OM6

- Avoidance of excessive height and bulk of the associated landscaped deck to the central boulevard (AEIAR-170/2013).

(g) OM7

- Elegant engineering design, sensitive architectural and chromatic treatment and generous planting of the associated landscaped deck to the central boulevard. The form, color and surface detailing of these structures should be carefully considered to reduce their apparent height and bulk (visual weight) (AEIAR-170/2013).

(h) OM8

- Sensitive design of noise barriers & enclosures with greening (screen planting/climbers/green roofs) and chromic measures (AEIAR-170/2013).

(i) OM9

- Compensatory Tree Planting for felled trees (AEIAR-170/2013)

- |           |  |
|-----------|--|
| <b>3</b>  | <b>EM&amp;A ON NEW SEWAGE PUMPING STATIONS SERVING THE PLANNED KTD (AEIAR-130/2009)</b>  |
|           | Not Applicable   |
| <b>4</b>  | <b>EM&amp;A ON DECOMMISSIONING OF THE REMAINING PARTS (EX-GFS BUILDING AND RADAR STATION) OF THE FORMER KAI TAK AIRPORT (AEIAR-130/2009)</b> |
|           | Not Applicable   |
| <b>5</b>  | <b>AIR QUALITY IMPACT (AEIAR-130/2009)</b>   |
|           | Not Applicable   |
| <b>6</b>  | <b>NOISE IMPACT (AEIAR-130/2009)</b>   |
|           | Not Applicable   |
| <b>7</b>  | <b>WATER QUALITY IMPACT (AEIAR-130/2009)</b>   |
|           | Not Applicable   |
| <b>8</b>  | <b>WASTE MANAGEMENT IMPLICATIONS (AEIAR-130/2009)</b>  |
|           | Not Applicable   |
| <b>9</b>  | <b>LAND CONTAMINATION (AEIAR-130/2009)</b>   |
|           | Not Applicable   |
| <b>10</b> | <b>IMPACT ON CULTURAL HERITAGE (AEIAR-130/2009)</b>  |
|           | Not Applicable   |
| <b>11</b> | <b>LANDSCAPE AND VISUAL IMPACT (AEIAR-130/2009)</b>  |
|           | Not Applicable   |

**12 FISHERIES IMPACT (AEIAR-130/2009)**

Not Applicable

**13 ECOLOGY IMPACT (AEIAR-130/2009)**

Not Applicable

**14 HAZARD TO LIFE (AEIAR-130/2009)**

Not Applicable

## **15 SITE ENVIRONMENTAL AUDIT**

### **15.1 Site Inspections**

- 15.1.1 Site inspection provides a direct means to trigger and enforce specified environmental protection and pollution control measures. These shall be undertaken regularly and routinely to inspect construction activities in order to ensure that appropriate environmental protection and pollution control mitigation measures are properly implemented. The site inspection is one of the most effective tools to enforce the environmental protection requirements at the works area.
- 15.1.2 The ET Leader shall be responsible for formulating the environmental site inspection, the deficiency and remedial action reporting system, and for carrying out the site inspection works. The ET Leader shall submit a proposal for site inspection and deficiency and remedial action reporting procedures to the Contractor for agreement, and to the ER for approval. The ET's proposal for rectification would be made known to the IEC.
- 15.1.3 Regular site inspections shall be carried out at least once per week. The areas of inspection shall not be limited to the environmental situation and the pollution control and mitigation measures within the site, it should also review the environmental situation outside the works area which is likely to be affected directly or indirectly by the site activities. The ET shall make reference to the following information in conducting the inspection:
- The EIA and EM&A recommendations on environmental protection and pollution control mitigation measures;
  - Ongoing results of the EM&A program;
  - Works progress and programme;
  - Individual works methodology proposals (which shall include proposal on associated pollution control measures);
  - Contract specifications on environmental protection and pollution prevention control;
  - Relevant environmental protection and pollution control laws;
  - Previous site inspection results undertaken by the ET and others.
- 15.1.4 The Contractor shall keep the ET Leader updated with all relevant information on the construction contract necessary for him/her to carry out the site inspections. Inspection results and associated recommendations for improvements to the environmental protection and pollution control works shall be submitted to the IEC and the Contractor within 24 hours for reference and for taking immediate remedial action. The Contractor shall follow the procedures and time-frame stipulated in the environmental site inspection, and the deficiency and remedial action reporting system formulated by the ET Leader, to report on any remedial measures subsequent to the site inspections.
- 15.1.5 The ET shall also carry out ad hoc site inspections if significant environmental problems are identified. Inspections may also be required subsequent to receipt of an environmental complaint, or as part of the investigation work, as specified in the Event and Action Plan for environmental monitoring and audit.

## **15.2 Compliance with Legal and Contractual Requirements**

- 15.2.1 There are contractual environmental protection and pollution control requirements as well as environmental protection and pollution control laws in Hong Kong with which construction activities must comply.
- 15.2.2 In order that the works are in compliance with the contractual requirements, all works method statements submitted by the Contractor to the ER for approval shall be sent to the ET Leader for vetting to see whether sufficient environmental protection and pollution control measures have been included. The implementation schedule of mitigation measures is summarised in **Appendices A and A1** respectively.
- 15.2.3 The ET Leader shall also review the progress and programme of the works to check that relevant environmental laws have not been violated, and that any foreseeable potential for violating laws can be prevented.
- 15.2.4 The Contractor shall regularly copy relevant documents to the ET Leader so that works checking could be carried out effectively. The document shall at least include the updated Works Progress Reports, updated Works Programme, any application letters for different licence / permits under the environmental protection laws, and copies of all valid licences / permits. The site diary shall also be available for the ET Leader's inspection upon his/her request.
- 15.2.5 After reviewing the documentation, the ET Leader shall advise the Contractor of any non-compliance with contractual and legislative requirements on environmental protection and pollution control for them to take follow-up actions. If the ET Leader's review concludes that the current status on licence / permit application and any environmental protection and pollution control preparation works may result in potential violation of environmental protection and pollution control requirements, he/she shall also advise the Contractor accordingly.
- 15.2.6 Upon receipt of the advice, the Contractor shall undertake immediate action to remedy the situation. The ER shall follow up to ensure that appropriate action has been taken in order to satisfy contractual and legal requirements.

## **15.3 Environmental Complaints**

- 15.3.1 Complaints shall be referred to the ET Leader for action. The ET Leader shall undertake the following procedures upon receipt of any complaint:
- Log complaint and date of receipt onto the complaint database and inform the IEC immediately;
  - Investigate the complaint to determine its validity, and assess whether the source of the problem is due to works activities;
  - Identify mitigation measures in consultation with the IEC if a complaint is valid and due to works;
  - Advise the Contractor if mitigation measures are required;
  - Review the Contractor's response to identified mitigation measures, and the updated situation;
  - If the complaint is transferred from EPD, submit interim report to EPD on status of the complaint investigation and follow-up action within the time frame assigned by EPD;

- Undertake additional monitoring and audit to verify the situation if necessary, and review that circumstances leading to the complaint do not recur;
- Report investigation results and subsequent actions to complainant (if the source of complaint is identified through EPD, the results should be reported within the timeframe assigned by EPD);
- Record the complaint, investigation, the subsequent actions and the results in the monthly EM&A reports.

15.3.2 A flow chart of the complaint response procedures is shown in **Figure 15.1**.

## **16 REPORTING**

### **16.1 General**

- 16.1.1 The EM&A reporting shall be carried out in paper based plus electronic submission upon agreeing the format with the ER and EPD. All the monitoring data (baseline and impact) shall also be submitted in electronic format. The formats for air quality, noise and water quality monitoring data to be submitted on diskette are shown in **Appendix B**.
- 16.1.2 Types of reports that the ET Leader shall prepare and submit include baseline monitoring report, monthly EM&A report, quarterly EM&A summary report and final EM&A review report. In accordance with Annex 21 of the EIAO-TM, a copy of the monthly, quarterly summary and final review EM&A reports shall be made available to the Director of Environmental Protection (DEP).

### **16.2 Electronic Reporting of EM&A Information**

- 16.2.1 To facilitate public inspection of the baseline monitoring report and various EM&A reports via the EIAO internet website and at the EIAO Register Office, electronic copies of these reports shall be prepared in Hyper Text Markup Language (HTML) (version 4.0 or later) and in Portable Document Format (PDF version 4.0 or later), unless otherwise agreed by EPD and shall be submitted at the same time as the hardcopies. For the HTML version, a content page capable of providing hyperlink to each section and sub-section of these reports shall be included at the beginning of the document. Hyperlinks to all figures, drawings and tables in these reports shall be provided in the main text from where the respective references are made. All graphics in these reports shall be in interlaced GIF format unless otherwise agreed by EPD. The content of the electronic copies of these reports must be the same as the hard copies. The summary of the monitoring data taken shall be included in the various EM&A reports to allow for public inspection via the EIAO internet website.

### **16.3 Baseline Monitoring Report**

- 16.3.1 The ET Leader shall prepare and submit a Baseline Environmental Monitoring Report within 10 working days of completion of the baseline monitoring. Copies of the Baseline Environmental Monitoring Report shall be submitted to the Contractor, the IEC, the ER and EPD. The ET Leader shall liaise with the relevant parties on the exact number of copies they require.
- 16.3.2 The baseline monitoring report shall include, but not be limited to the following:
- (i) Up to half a page executive summary;
  - (ii) Brief project background information;
  - (iii) Drawings showing locations of the baseline monitoring stations;
  - (iv) An updated construction programme with milestones of environmental protection / mitigation activities annotated;

- (v) Monitoring results (in both hard and soft copies) together with the following information:
  - Monitoring methodology;
  - Name of laboratory and types of equipment used and calibration details;
  - Parameters monitored;
  - Monitoring locations;
  - Monitoring date, time, frequency and duration; and
  - Quality assurance (QA) / quality control (QC) results and detection limits.
- (vi) Details on influencing factors, including:
  - Major activities, if any, being carried out on the site during the period;
  - Weather conditions during the period; and
  - Other factors which might affect results.
- (vii) Determination of the Action and Limit Levels (AL Levels) for each monitoring parameter and statistical analysis of the baseline data, the analysis shall conclude if there is any significant difference between control and impact stations for the parameters monitored;
- (viii) Revisions for inclusion in the EM&A Manual; and
- (ix) Comments, recommendations and conclusions.

#### **16.4 Monthly EM&A Reports**

- 16.4.1 The results and findings of all EM&A work required in this Manual shall be recorded in the monthly EM&A reports prepared by the ET Leader. The EM&A report shall be prepared and submitted within 10 working days at the end of each reporting month, with the first report due the month after construction commences. Each monthly EM&A report shall be submitted to the following parties: the Contractor, the IEC, the ER and EPD. Before submission of the first EM&A report, the ET Leader shall liaise with the parties on the required number of copies and format of the monthly reports in both hard copy and electronic medium.
- 16.4.2 The ET Leader shall review the number and location of monitoring stations and parameters every six months, or on as needed basis, in order to cater for any changes in the surrounding environment and the nature of works in progress.

## **16.5 First Monthly EM&A Report**

16.5.1 The first monthly EM&A report shall include at least but not be limited to the following:

- (i) Executive summary (1-2 pages):
  - Breaches of Action and Limit Levels;
  - Complaint log;
  - Notifications of any summons and successful prosecutions;
  - Reporting changes; and
  - Future key issues.
- (ii) Basic project information:
  - Project organisation including key personnel contact names and telephone numbers;
  - Construction programme with fine tuning of construction activities showing the inter-relationship with environmental protection / mitigation measures for the month;
  - Management structure; and
  - Works undertaken during the month.
- (iii) Environmental status:
  - Works undertaken during the month with illustrations; and
  - Drawings showing the project area, any environmental sensitive receivers and the locations of the monitoring and control stations (with co-ordinates of the monitoring locations);
  - Advice on the status of statutory environmental compliance, the status of compliance with environmental permit (EP) conditions under the EIA Ordinance, submission status under the EP and implementation status of mitigation measures.
- (iv) A brief summary of EM&A requirements including:
  - All monitoring parameters;
  - Environmental quality performance limits (Action and Limit Levels);
  - Event and Action Plans;
  - Environmental mitigation measures, as recommended in the EIA report; and
  - Environmental requirements in contract documents.
- (v) Implementation status:
  - Advice on the implementation status of environmental protection and pollution control / mitigation measures, as recommended in the EIA report, summarised in the updated implementation schedule.

- (vi) Monitoring results (in both hard and diskette copies) together with the following information:
- Monitoring methodology;
  - Name of laboratory and types of equipment used and calibration details;
  - Parameters monitored;
  - Monitoring locations;
  - Monitoring date, time, frequency, and duration;
  - Weather conditions during the period;
  - Graphical plots of the monitored parameters in the month annotated against:
    - The major activities being carried out on site during the period;
    - Weather conditions that may affect the results; and
    - Any other factors which might affect the monitoring results.
  - Any other factors which might affect the monitoring results; and
  - Quality assurance (QA) / quality control (QC) results and detection limits.
- (vii) Report on non-compliance, complaints, notifications of summons and successful prosecutions:
- Record of all non-compliance (exceedances) of the environmental quality performance limits (Action and Limit Levels);
  - Record of all complaints received (written or verbal) for each media, including locations and nature of complaints investigation, liaison and consultation undertaken, actions and follow-up procedures taken, results and summary;
  - Record of all notification of summons and successful prosecutions for breaches of current environmental protection / pollution control legislations, including locations and nature of the breaches, investigation, follow-up actions taken, results and summary;
  - Review of the reasons for and the implications of non-compliance, complaints, summons and prosecutions including review of pollution sources and working procedures; and
  - Description of the actions taken in the event of non-compliance and deficiency reporting and any follow-up procedures related to earlier non-compliance.
- (viii) Others:
- Compare and contrast the EM&A data in the month with the EIA predictions and annotate with explanation for any discrepancies;
  - An account of the future key issues as reviewed from the works programme and work method statements;
  - Advice on the solid and liquid waste management status during the month including waste generation and disposal records; and
  - Comments including effectiveness of the environmental management systems, practices, procedures, mitigation measures, recommendations (for example, any improvement in the EM&A programme) and conclusions.

## 16.6 Subsequent EM&A Reports

16.6.1 Subsequent monthly EM&A reports shall include the following:

- (i) Executive summary (1 - 2 pages):
  - Breaches of Action and Limit Levels;
  - Complaints log;
  - Notifications of any summons and successful prosecutions;
  - Reporting changes; and
  - Future key issues.
- (ii) Environmental status:
  - Construction programme with fine tuning of construction activities showing the inter-relationship with environmental protection / mitigation measures for the month;
  - Works undertaken during the month with illustrations including key personnel contact names and telephone numbers;
  - Drawing showing the project area, any environmental sensitive receivers and the locations of the monitoring and control stations; and
  - Advice on the status of statutory environmental compliance, the status of compliance with environmental permit (EP) conditions under the EIA Ordinance, submission status under the EP and implementation status of mitigation measures.
- (iii) Implementation status:
  - Advice on the implementation status of environmental protection and pollution control / mitigation measures, as recommended in the EIA report, summarised in the updated implementation schedule.
- (iv) Monitoring results (in both hard and diskette copies) together with the following information:
  - Monitoring methodology;
  - Name of laboratory and types of equipment used and calibration details;
  - Parameters monitored;
  - Monitoring locations;
  - Monitoring date, time, frequency, and duration;
  - Weather conditions during the period;
  - Graphical plots of the monitored parameters in the month annotated against;
    - The major activities being carried out on site during the period;
    - Weather conditions that may affect the results; and
    - Any other factors which might affect the monitoring results.
  - Any other factors which might affect the monitoring results; and
  - Quality assurance (QA) / quality control (QC) results and detection limits.

- (v) Report on non-compliance, complaints, and notifications of summons and successful prosecutions:
  - Record of all non-compliance (exceedances) of the environmental quality performance limits (Action and Limit Levels);
  - Record of all complaints received (written or verbal) for each media, including locations and nature of complaints investigation, liaison and consultation undertaken, actions and follow-up procedures taken, results and summary;
  - Record of all notification of summons and successful prosecutions for breaches of current environmental protection / pollution control legislations, including locations and nature of the breaches, investigation, follow-up actions taken, results and summary;
  - Review of the reasons for and the implications of non-compliance, complaints, summons and prosecutions including review of pollution sources and working procedures; and
  - Description of the actions taken in the event of non-compliance and deficiency reporting and any follow-up procedures related to earlier non-compliance.
- (vi) Others:
  - Compare and contrast the EM&A data in the month with the EIA predictions and annotate with explanation for any discrepancies;
  - An account of the future key issues as reviewed from the works programme and work method statements;
  - Advice on the solid and liquid waste management status during the month including waste generation and disposal records; and
  - Comments including effectiveness of the environmental management systems, practices, procedures, mitigation measures, recommendations (for example, any improvement in the EM&A programme) and conclusions.
- (vii) Appendix
  - Action and Limit Levels;
  - Graphical plots of trends of monitored parameters at key stations over the past four reporting periods for representative monitoring stations annotated against the following:
    - Major activities being carried out on site during the period;
    - Weather conditions during the period; and
    - Any other factors that might affect the monitoring results.
  - Monitoring schedule for the present and next reporting period;
  - Cumulative statistics on complaints, notifications of summons and successful prosecutions;
  - Outstanding issues and deficiencies.

## **16.7 Quarterly EM&A Summary Reports**

16.7.1 A quarterly EM&A summary report of around five pages shall be produced and shall contain at least the following information. Apart from these, the first quarterly summary report should also confirm that the monitoring work is proving effective and that it is generating data with the necessary statistical power to categorically identify or confirm the absence of impact attributable to the works.

- (i) Executive summary (1 - 2 pages);
- (ii) Basic project information including a synopsis of the project organisation, programme, contacts of key management, and a synopsis of works undertaken during the quarter;
- (iii) A brief summary of EM&A requirements including:
  - Monitoring parameters;
  - Environmental quality performance limits (Action and Limit Levels); and
  - Environmental mitigation measures, as recommended in the EIA report.
- (iv) Advice on the implementation status of environmental protection and pollution control / mitigation measures, as recommended in the EIA report, summarised in the updated implementation schedule;
- (v) Drawings showing the project area, any environmental sensitive receivers and the locations of the monitoring and control stations;
- (vi) Graphical plots of the trends of monitored parameters over the past four months (the last month of the previous quarter and the present quarter) for representative monitoring stations annotated against:
  - The major activities being carried out on site during the period;
  - Weather conditions during the period; and
  - Any other factors which might affect the monitoring results.
- (vii) Advice on the solid and liquid waste management status during the quarter including waste generation and disposal records;
- (viii) Compare and contrast the EM&A data in the month with the EIA predictions and annotate with explanation for any discrepancies;
- (ix) A summary of non-compliance (exceedances) of the environmental quality performance limits (Action and Limit Levels);

- (x) A brief review of the reasons for and the implications of non-compliance, including a review of pollution sources and working procedures;
- (xi) A summary description of the actions taken in the event of non-compliance and any follow-up procedures related to earlier non-compliance;
- (xii) A summarised record of all complaints received (written or verbal) for each media, liaison and consultation undertaken, actions and follow-up procedures taken;
- (xiii) A summary record of notifications of summons and successful prosecutions for breaches of the current environmental protection / pollution control legislations, locations and nature of the breaches, investigation, follow-up actions taken and results;
- (xiv) Comments (for examples, a review of the effectiveness and efficiency of the mitigation measures and the performance of the environmental management system, that is, of the overall EM&A programme); recommendations (for example, any improvement in the EM&A programme) and conclusions for the quarter; and
- (xv) Proponents' contacts and any hotline telephone number for the public to make enquiries.

## **16.8 Final EM&A Review Reports**

- 16.8.1 The EM&A program shall be terminated upon completion of those construction activities that have the potential to result in a significant environmental impact.
- 16.8.2 Prior to the proposed termination, it may be advisable to consult relevant local communities. The proposed termination should only be implemented after the proposal has been endorsed by the IEC, the Engineer and the Project Proponent followed by final approval from the Director of Environmental Protection.
- 16.8.3 The final EM&A report should contain at least the following information:
  - (i) Executive summary (1 - 2 pages);
  - (ii) Basic project information including a synopsis of the project organisation, contacts of key management, and a synopsis of work undertaken during the course of the Project or past twelve months;
  - (iii) A brief summary of EM&A requirements including:
    - Monitoring parameters;
    - Environmental quality performance limits (Action and Limit Levels); and
    - Environmental mitigation measures, as recommended in the EIA report.

- (iv) Advice on the implementation status of environmental protection and pollution control / mitigation measures, as recommended in the EIA report, summarised in the updated implementation status proformas;
- (v) Drawings showing the project area, any environmental sensitive receivers and the locations of the monitoring and control stations;
- (vi) Graphical plots of the trends of monitored parameters over the course of the Project, including the post-project monitoring for all monitoring stations annotated against:
  - The major activities being carried out on site during the period;
  - Weather conditions during the period; and
  - Any other factors which might affect the monitoring results;
  - The return of ambient environmental conditions in comparison with baseline data.
- (vii) Compare and contrast the EM&A data with the EIA predictions and annotate with explanation for any discrepancies;
- (viii) Provide clear-cut decisions on the environmental acceptability of the Project with reference to the specific impact hypothesis;
- (ix) Advice on the solid and liquid waste management status including waste generation and disposal records;
- (x) A summary of non-compliance (exceedances) of the environmental quality performance limits (Action and Limit Levels);
- (xi) A brief review of the reasons for and the implications of non-compliance including review of pollution sources and working procedures;
- (xii) A summary description of the actions taken in the event of non-compliance and any follow-up procedures related to earlier non-compliance;
- (xiii) A summary record of all complaints received (written or verbal) for each media, liaison and consultation undertaken, actions and follow-up procedures taken;
- (xiv) Review monitoring methodology adopted and with the benefit of hindsight, comment on its effectiveness (including cost effectiveness);
- (xv) A summary record of notifications of summons and successful prosecutions for breaches of the current environmental protection/pollution control legislations, locations and nature of breaches, investigation, follow-up actions taken and results;

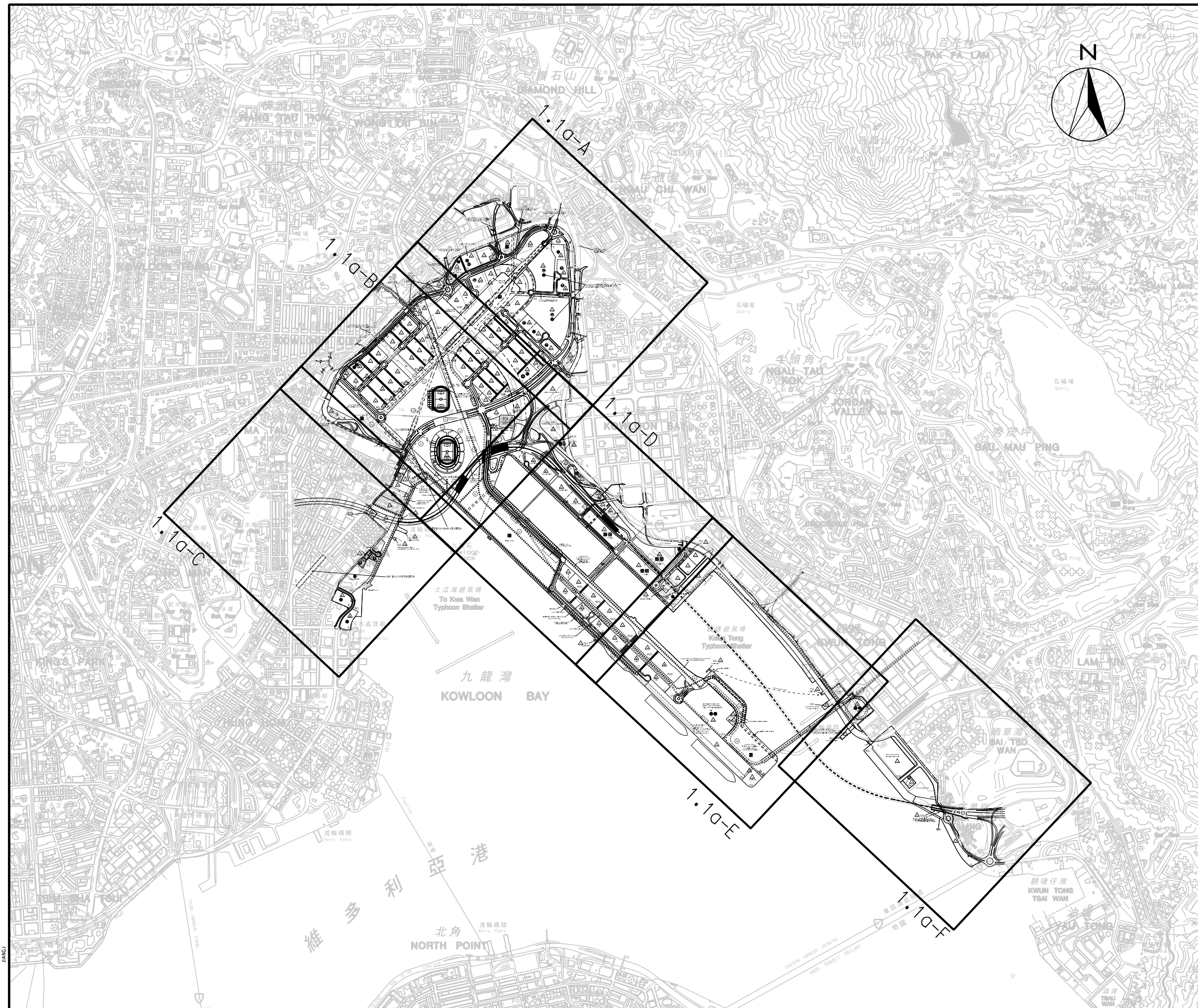
- (xvi) Review the practicality and effectiveness of the EIA process and EM&A programme (for examples, a review of the effectiveness and efficiency of the mitigation measures and the performance of the environmental management system, that is, of the overall EM&A programme), recommendations (for example, any improvement in the EM&A programme); and
- (xvii) A conclusion to state the return of ambient and / or the predicted scenario as per EIA findings.

## **16.9 Data Keeping**

- 16.9.1 No site-based documents (such as monitoring field records, laboratory analysis records, site inspection forms, etc.) are required to be included in the monthly EM&A reports. However, any such document shall be well kept by the ET Leader and be ready for inspection upon request. All relevant information shall be clearly and systematically recorded in the document. Monitoring data shall also be recorded in electronic format, and the software copy must be available upon request. Data format shall be agreed with EPD. All documents and data shall be kept for at least one year following completion of the construction contract.

## **16.10 Interim Notifications of Environmental Quality Limit Exceedances**

- 16.9.2 With reference to the Event and Action Plan, when the environmental quality performance limits are exceeded, the ET Leader shall immediately notify the IEC and EPD, as appropriate. The notification shall be followed up with advice to IEC and EPD on the results of the investigation, proposed actions and success of the actions taken, with any necessary follow-up proposals. A sample template for the interim notifications is presented in Appendix C.



## NOTATION

- |  |                             |  |   |
|--|-----------------------------|--|---|
|  | GOVERNMENT OFFICES          |  | HOSPITAL  |
|  | POLICE HEADQUARTERS         |  | POLYCLINIC / SPECIALIST CLINIC                      |
|  | DIVISIONAL POLICE STATION   |  | GENERAL CLINIC                                      |
|  | SUB-DIVISIONAL FIRE STATION |  | REGIONAL PARK                                       |
|  | AMBULANCE DEPOT             |  | TOWN PARK   |
|  | POST OFFICE                 |  | INDOOR RECREATION CENTRE                            |
|  | LIBRARY                     |  | CAR PARK  |
|  | COMMUNITY HALL              |  | BUS TERMINUS  |
|  | SOCIAL WELFARE FACILITY     |  | GREEN MINI BUS TERMINUS / PUBLIC LIGHT BUS TERMINUS |
|  | SECONDARY SCHOOL            |  | PETROL FILLING STATION                              |
|  | PRIMARY SCHOOL              |  | LIQUEFIED PETROLEUM GAS FILLING STATION             |
|  | KINDERGARTEN                |  |   |

- |  |                   |  |   |
|--|-------------------|--|---|
|  | PLANNING BOUNDARY |  | RESERVE FOR RAILWAY AND STATION (UNDERGROUND) (SUBJECT TO FURTHER INVESTIGATION)                    |
|  | ZONING BOUNDARY   |  | POSSIBLE RESERVE FOR MONORAIL AND STATIONS (SUBJECT TO FURTHER INVESTIGATION AND FEASIBILITY STUDY) |
|  | ELEVATED ROAD     |  | DRAINAGE RESERVE  |
|  | DEPRESSED ROAD    |  | UTILITY RESERVE   |
|  | TUNNEL            |  | WATERWORK RESERVE   |
|  | PEDESTRIAN STREET |  | MAXIMUM BUILDING HEIGHT (IN M ABOVE PD)   |
|  | CYCLE TRACK       |  | PROPOSED LEVEL (IN M ABOVE PD)  |
|  | HERITAGE TRAIL    |  | PEDESTRIAN CROSSING   |

- |      |   |     |                              |
|------|---|-----|------------------------------|
| AMC  | ANIMAL MANAGEMENT CENTRE                | PFS | PETROL FILLING STATION       |
| ESS  | ELECTRICITY SUBSTATION                  | PTI | PUBLIC TRANSPORT INTERCHANGE |
| FB   | FOOTBRIDGE                              | RCP | REFUSE COLLECTION POINT      |
| LPG  | LIQUEFIED PETROLEUM GAS FILLING STATION | SPS | SEWAGE PUMPING STATION       |
| MVTS | MARINE VESSEL TRACKING SYSTEM           | SW  | SUBWAY                       |
| NBA  | NON-BUILDING AREA                       |     |                              |

## SCHEDULE OF USES AND AREAS

USES	NET SITE	AREA & %
	HECTARES	%
C COMMERCIAL		
RS SPECIAL RESIDENTIAL		
R1 RESIDENTIAL - ZONE 1		
R2 RESIDENTIAL - ZONE 2		
R3 RESIDENTIAL - ZONE 3		
G GOVERNMENT		
IC INSTITUTION OR COMMUNITY		
E EDUCATION		
RO REGIONAL OPEN SPACE		
DO DISTRICT OPEN SPACE		
LO LOCAL OPEN SPACE		
A AMENITY		
OU OTHER SPECIFIED USES		
CDA COMPREHENSIVE DEVELOPMENT AREA		
ROADS, JUNCTIONS, ETC.		
TOTAL DEVELOPMENT AREA	328.00	100.00
TOTAL AREA OF PLANNING AREA	328.00	100.00

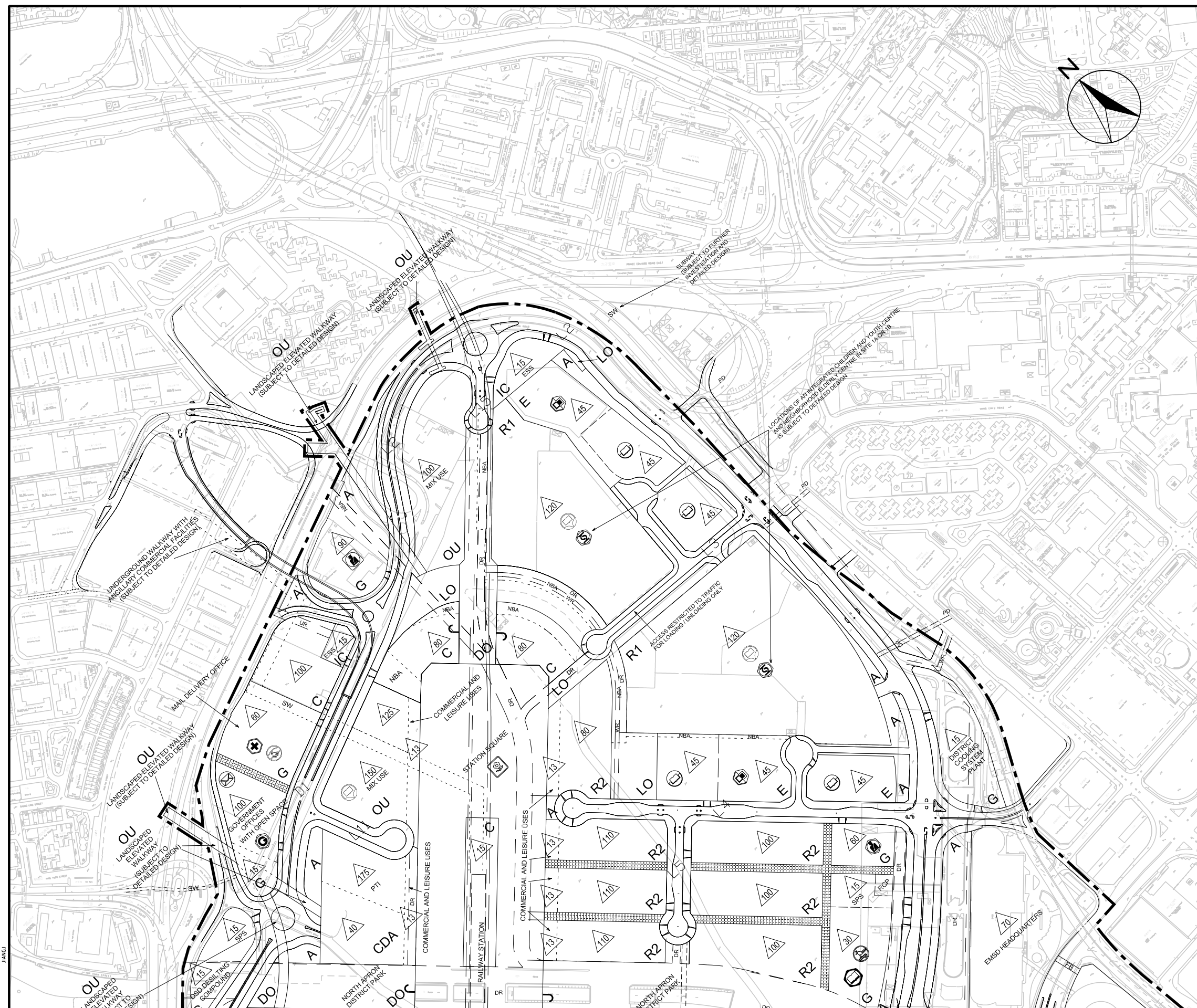
MAUNSELL | AECOM

Maunsell Consultants Asia Ltd

AGREEMENT NO. CE 35/2006 (CE)  
KAI TAK DEVELOPMENT ENGINEERING STUDY CUM DESIGN AND CONSTRUCTION OF ADVANCE WORKS-INVESTIGATION, DESIGN AND CONSTRUCTION  
IMPLEMENTATION REPORT

RECOMMENDED OUTLINE DEVELOPMENT PLAN (DATED MAY 2008)

SCALE	A3 1:25000	DATE	JUN 2008
CHECK	-	DRAWN	TLF
JOB NO.	60022408	DRAWING No.	1.1a
		REV	-



# NOTATION

- GOVERNMENT OFFICES
- POLICE HEADQUARTERS
- DIVISIONAL POLICE STATION
- SUB-DIVISIONAL FIRE STATION
- AMBULANCE DEPOT
- POST OFFICE
- LIBRARY
- COMMUNITY HALL
- SOCIAL WELFARE FACILITY
- SECONDARY SCHOOL
- PRIMARY SCHOOL
- KINDERGARTEN
- HOSPITAL
- POLYCLINIC / SPECIALIST CLINIC
- GENERAL CLINIC
- REGIONAL PARK
- TOWN PARK
- INDOOR RECREATION CENTRE
- CAR PARK
- BUS TERMINUS
- GREEN MINI BUS TERMINUS / PUBLIC LIGHT BUS TERMINUS
- PETROL FILLING STATION
- LIQUEFIED PETROLEUM GAS FILLING STATION

- PLANNING BOUNDARY
- ZONING BOUNDARY
- ELEVATED ROAD
- DEPRESSED ROAD
- TUNNEL
- PEDESTRIAN STREET
- CYCLE TRACK
- HERITAGE TRAIL
- RESERVE FOR RAILWAY AND STATION (UNDERGROUND) (SUBJECT TO FURTHER INVESTIGATION)
- POSSIBLE RESERVE FOR MONORAIL AND STATIONS (SUBJECT TO FURTHER INVESTIGATION AND FEASIBILITY STUDY)
- DRAINAGE RESERVE
- UTILITY RESERVE
- WATERWORK RESERVE
- MAXIMUM BUILDING HEIGHT (IN M ABOVE PD)
- PROPOSED LEVEL (IN M ABOVE PD)
- PEDESTRIAN CROSSING

- AMC ANIMAL MANAGEMENT CENTRE
- ESS ELECTRICITY SUBSTATION
- FB FOOTBRIDGE
- LPG LIQUEFIED PETROLEUM GAS FILLING STATION
- MVTS MARINE VESSEL TRACKING SYSTEM
- NBA NON-BUILDING AREA
- PFS PETROL FILLING STATION
- PTI PUBLIC TRANSPORT INTERCHANGE
- RCP REFUSE COLLECTION POINT
- SPS SEWAGE PUMPING STATION
- SW SUBWAY

# SCHEDULE OF USES AND AREAS

USES	NET SITE	AREA & %
	HECTARES	%
C COMMERCIAL		
RS SPECIAL RESIDENTIAL		
R1 RESIDENTIAL - ZONE 1		
R2 RESIDENTIAL - ZONE 2		
R3 RESIDENTIAL - ZONE 3		
G GOVERNMENT		
IC INSTITUTION OR COMMUNITY		
E EDUCATION		
RO REGIONAL OPEN SPACE		
DO DISTRICT OPEN SPACE		
LO LOCAL OPEN SPACE		
A AMENITY		
OU OTHER SPECIFIED USES		
CDA COMPREHENSIVE DEVELOPMENT AREA		
ROADS, JUNCTIONS, ETC.		
TOTAL DEVELOPMENT AREA	328.00	100.00
TOTAL AREA OF PLANNING AREA	328.00	100.00

AGREEMENT NO. CE 35/2006 (CE)

KAI TAK DEVELOPMENT ENGINEERING STUDY CUM DESIGN AND CONSTRUCTION OF ADVANCE WORKS-INVESTIGATION, DESIGN AND CONSTRUCTION

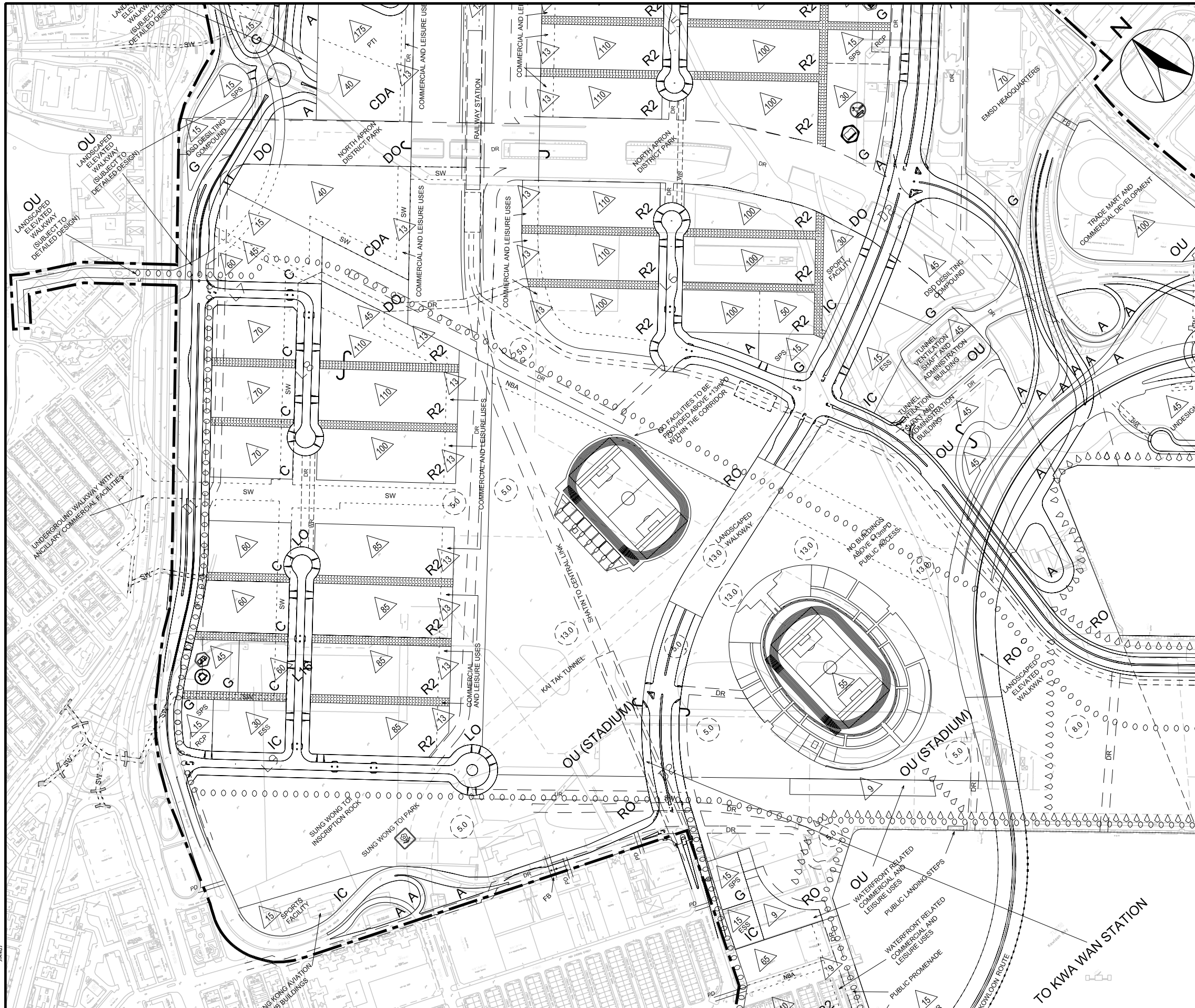
## RECOMMENDED OUTLINE DEVELOPMENT PLAN (DATED MAY 2008)

(SHEET 1 OF 7)

MAUNSELL AECOM

Maunsell Consultants Asia Ltd

SCALE	A3 1:5000	DATE	JUN. 2008
CHECK	-	DRAWN	TLF
JOB NO.	60022408	DRAWING No.	1.1a-A
		REV	-



# NOTATION

- GOVERNMENT OFFICES
- POLICE HEADQUARTERS
- DIVISIONAL POLICE STATION
- SUB-DIVISIONAL FIRE STATION
- AMBULANCE DEPOT
- POST OFFICE
- LIBRARY
- COMMUNITY HALL
- SOCIAL WELFARE FACILITY
- SECONDARY SCHOOL
- PRIMARY SCHOOL
- KINDERGARTEN
- HOSPITAL
- POLYCLINIC / SPECIALIST CLINIC
- GENERAL CLINIC
- REGIONAL PARK
- TOWN PARK
- INDOOR RECREATION CENTRE
- CAR PARK
- BUS TERMINUS
- GREEN MINI BUS TERMINUS / PUBLIC LIGHT BUS TERMINUS
- PETROL FILLING STATION
- LIQUEFIED PETROLEUM GAS FILLING STATION

- PLANNING BOUNDARY
- ZONING BOUNDARY
- ELEVATED ROAD
- DEPRESSED ROAD
- TUNNEL
- PEDESTRIAN STREET
- CYCLE TRACK
- HERITAGE TRAIL
- RESERVE FOR RAILWAY AND STATION (UNDERGROUND) (SUBJECT TO FURTHER INVESTIGATION)
- POSSIBLE RESERVE FOR MONORAIL AND STATIONS (SUBJECT TO FURTHER INVESTIGATION AND FEASIBILITY STUDY)
- DRAINAGE RESERVE
- UTILITY RESERVE
- WATERWORK RESERVE
- MAXIMUM BUILDING HEIGHT (IN M ABOVE PD)
- PROPOSED LEVEL (IN M ABOVE PD)
- PEDESTRIAN CROSSING

- AMC ANIMAL MANAGEMENT CENTRE
- ESS ELECTRICITY SUBSTATION
- FB FOOTBRIDGE
- LPG LIQUEFIED PETROLEUM GAS FILLING STATION
- MVTS MARINE VESSEL TRACKING SYSTEM
- NBA NON-BUILDING AREA
- PFS PETROL FILLING STATION
- PTI PUBLIC TRANSPORT INTERCHANGE
- RCP REFUSE COLLECTION POINT
- SPS SEWAGE PUMPING STATION
- SW SUBWAY

# SCHEDULE OF USES AND AREAS

USES	NET SITE	AREA & %
	HECTARES	%
C COMMERCIAL		
RS SPECIAL RESIDENTIAL		
R1 RESIDENTIAL - ZONE 1		
R2 RESIDENTIAL - ZONE 2		
R3 RESIDENTIAL - ZONE 3		
G GOVERNMENT		
IC INSTITUTION OR COMMUNITY		
E EDUCATION		
RO REGIONAL OPEN SPACE		
DO DISTRICT OPEN SPACE		
LO LOCAL OPEN SPACE		
A AMENITY		
OU OTHER SPECIFIED USES		
CDA COMPREHENSIVE DEVELOPMENT AREA		
ROADS, JUNCTIONS, ETC.		
TOTAL DEVELOPMENT AREA	328.00	100.00
TOTAL AREA OF PLANNING AREA	328.00	100.00

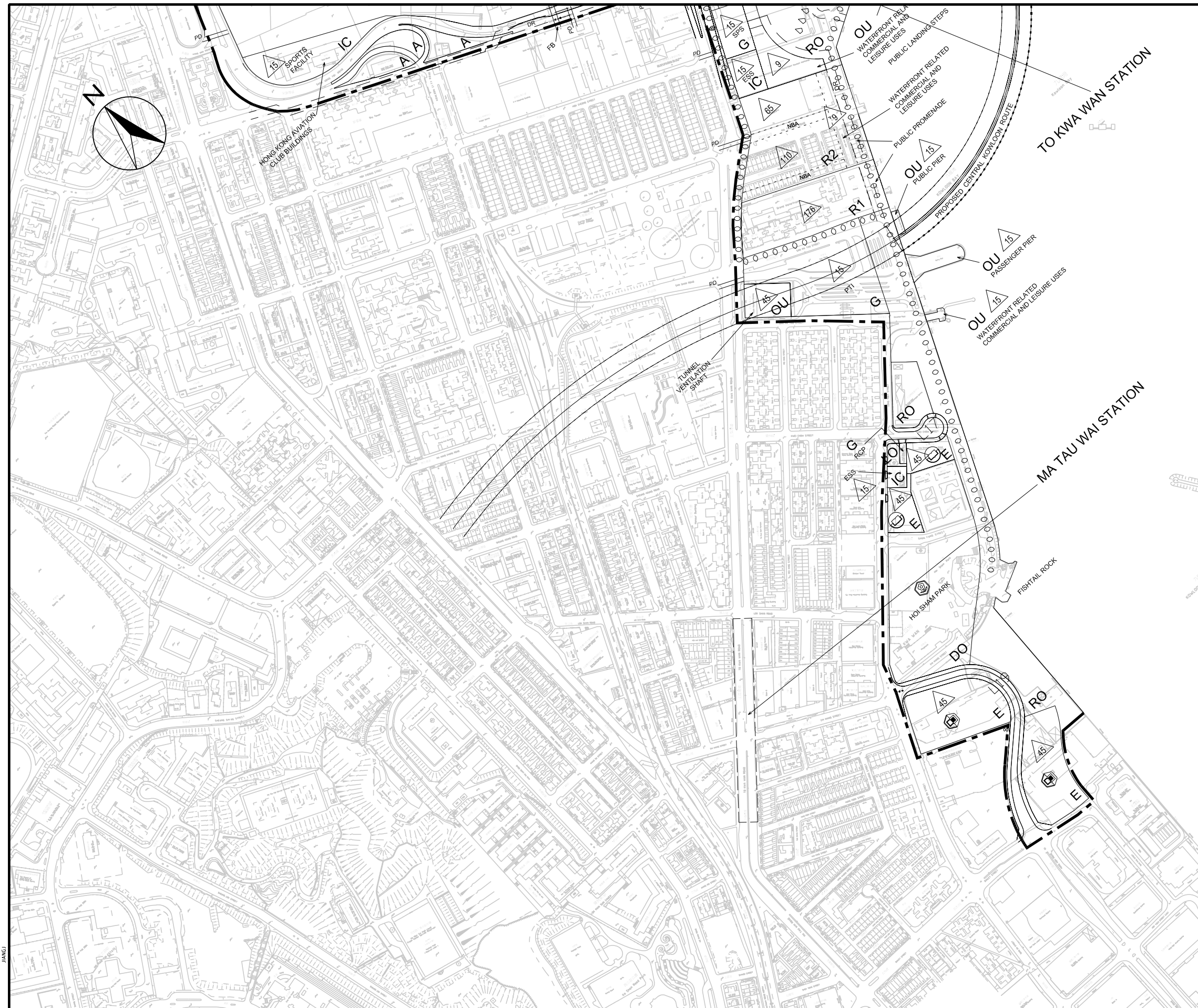
MAUNSELL AECOM  
Maunsell Consultants Asia Ltd

AGREEMENT NO. CE 35/2006 (CE)  
KAI TAK DEVELOPMENT ENGINEERING STUDY CUM DESIGN AND CONSTRUCTION OF ADVANCE WORKS-INVESTIGATION, DESIGN AND CONSTRUCTION

# RECOMMENDED OUTLINE DEVELOPMENT PLAN (DATED MAY 2008)

(SHEET 2 OF 7)

SCALE	A3 1:5000	DATE	JUN. 2008
CHECK	-	DRAWN	TLF
JOB NO.	60022408	DRAWING No.	1.1a-B
		REV	-



## NOTATION

- |                             |   |
|-----------------------------|---|
| GOVERNMENT OFFICES          | HOSPITAL  |
| POLICE HEADQUARTERS         | POLYCLINIC / SPECIALIST CLINIC                      |
| DIVISIONAL POLICE STATION   | GENERAL CLINIC                                      |
| SUB-DIVISIONAL FIRE STATION | REGIONAL PARK                                       |
| AMBULANCE DEPOT             | TOWN PARK   |
| POST OFFICE                 | INDOOR RECREATION CENTRE                            |
| LIBRARY                     | CAR PARK  |
| COMMUNITY HALL              | BUS TERMINUS  |
| SOCIAL WELFARE FACILITY     | GREEN MINI BUS TERMINUS / PUBLIC LIGHT BUS TERMINUS |
| SECONDARY SCHOOL            | PETROL FILLING STATION                              |
| PRIMARY SCHOOL              | LIQUEFIED PETROLEUM GAS FILLING STATION             |
| KINDERGARTEN                |   |

- |                   |   |
|-------------------|---|
| PLANNING BOUNDARY | RESERVE FOR RAILWAY AND STATION (UNDERGROUND) (SUBJECT TO FURTHER INVESTIGATION)                    |
| ZONING BOUNDARY   | POSSIBLE RESERVE FOR MONORAIL AND STATIONS (SUBJECT TO FURTHER INVESTIGATION AND FEASIBILITY STUDY) |
| ELEVATED ROAD     | DRAINAGE RESERVE  |
| DEPRESSED ROAD    | UTILITY RESERVE   |
| TUNNEL            | WATERWORK RESERVE   |
| PEDESTRIAN STREET | MAXIMUM BUILDING HEIGHT (IN M ABOVE PD)   |
| CYCLE TRACK       | PROPOSED LEVEL (IN M ABOVE PD)  |
| HERITAGE TRAIL    | PEDESTRIAN CROSSING   |

- |      |   |     |                              |
|------|---|-----|------------------------------|
| AMC  | ANIMAL MANAGEMENT CENTRE                | PFS | PETROL FILLING STATION       |
| ESS  | ELECTRICITY SUBSTATION                  | PTI | PUBLIC TRANSPORT INTERCHANGE |
| FB   | FOOTBRIDGE                              | RCP | REFUSE COLLECTION POINT      |
| LPG  | LIQUEFIED PETROLEUM GAS FILLING STATION | SPS | SEWAGE PUMPING STATION       |
| MVTS | MARINE VESSEL TRACKING SYSTEM           | SW  | SUBWAY                       |
| NBA  | NON-BUILDING AREA                       |     |                              |

## SCHEDULE OF USES AND AREAS

USES	NET SITE	AREA & %
	HECTARES	%
C COMMERCIAL		
RS SPECIAL RESIDENTIAL		
R1 RESIDENTIAL - ZONE 1		
R2 RESIDENTIAL - ZONE 2		
R3 RESIDENTIAL - ZONE 3		
G GOVERNMENT		
IC INSTITUTION OR COMMUNITY		
E EDUCATION		
RO REGIONAL OPEN SPACE		
DO DISTRICT OPEN SPACE		
LO LOCAL OPEN SPACE		
A AMENITY		
OU OTHER SPECIFIED USES		
CDA COMPREHENSIVE DEVELOPMENT AREA		
ROADS, JUNCTIONS, ETC.		
TOTAL DEVELOPMENT AREA	328.00	100.00
TOTAL AREA OF PLANNING AREA	328.00	100.00

AGREEMENT NO. CE 35/2006 (CE)

KAI TAK DEVELOPMENT ENGINEERING STUDY CUM DESIGN AND CONSTRUCTION OF ADVANCE WORKS-INVESTIGATION, DESIGN AND CONSTRUCTION

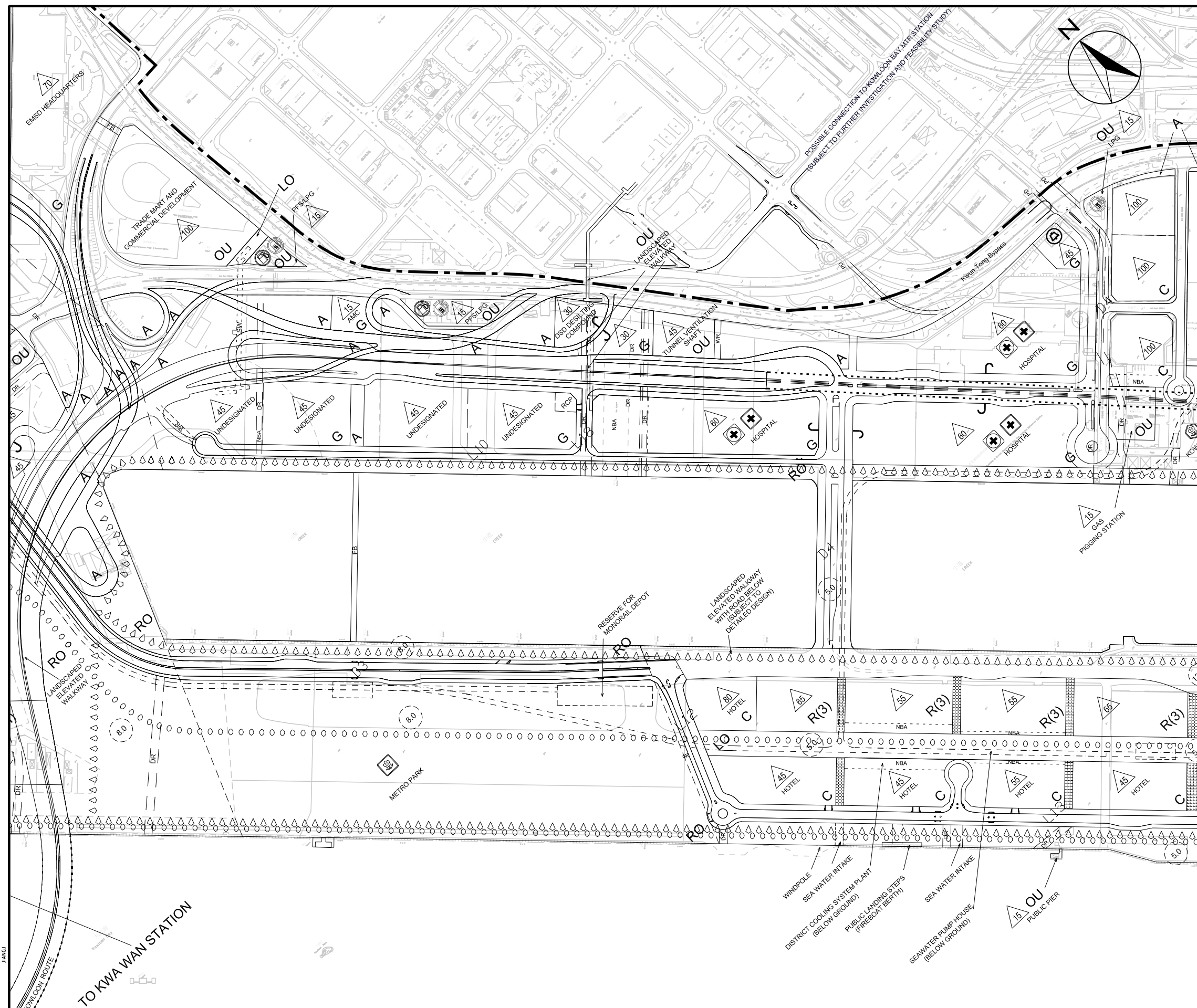
## RECOMMENDED OUTLINE DEVELOPMENT PLAN (DATED MAY 2008)

(SHEET 3 OF 7)

MAUNSELL | AECOM

Maunsell Consultants Asia Ltd

SCALE	A3 1:5000	DATE	JUN. 2008
CHECK	-	DRAWN	TLF
JOB NO.	60022408	DRAWING No.	1.1a-C
		REV	-



NOTATION

- GOVERNMENT OFFICES

POLICE HEADQUARTERS

DIVISIONAL POLICE STATION

SUB-DIVISIONAL FIRE STATION

AMBULANCE DEPOT

POST OFFICE

LIBRARY

COMMUNITY HALL

SOCIAL WELFARE FACILITY

SECONDARY SCHOOL

PRIMARY SCHOOL

KINDERGARTEN
- HOSPITAL

POLYCLINIC / SPECIALIST CLINIC

GENERAL CLINIC

REGIONAL PARK

TOWN PARK

INDOOR RECREATION CENTRE

CAR PARK

BUS TERMINUS

GREEN MINI BUS TERMINUS / PUBLIC LIGHT BUS TERMINUS

PETROL FILLING STATION

LIQUEFIED PETROLEUM GAS FILLING STATION
- PLANNING BOUNDARY

ZONING BOUNDARY

ELEVATED ROAD

DEPRESSED ROAD

TUNNEL

PEDESTRIAN STREET

CYCLE TRACK

HERITAGE TRAIL
- RESERVE FOR RAILWAY AND STATION (UNDERGROUND) (SUBJECT TO FURTHER INVESTIGATION)

POSSIBLE RESERVE FOR MONORAIL AND STATIONS (SUBJECT TO FURTHER INVESTIGATION AND FEASIBILITY STUDY)

DRAINAGE RESERVE

UTILITY RESERVE

WATERWORK RESERVE

MAXIMUM BUILDING HEIGHT (11M ABOVE PD)

PROPOSED LEVEL (11M ABOVE PD)

PEDESTRIAN CROSSING
- AMC

ANIMAL MANAGEMENT CENTRE

ESS

ELECTRICITY SUBSTATION

FB

FOOTBRIDGE

LPG

LIQUEFIED PETROLEUM GAS FILLING STATION

MVTS

MARINE VESSEL TRACKING SYSTEM

NBA

NON-BUILDING AREA
- PFS

PETROL FILLING STATION

PTI

PUBLIC TRANSPORT INTERCHANGE

RCP

REFUSE COLLECTION POINT

SPS

SEWAGE PUMPING STATION

SW

SUBWAY

SCHEDULE OF USES AND AREAS

USES	NET SITE	AREA & %
	HECTARES	%
C COMMERCIAL		
RS SPECIAL RESIDENTIAL		
R1 RESIDENTIAL - ZONE 1		
R2 RESIDENTIAL - ZONE 2		
R3 RESIDENTIAL - ZONE 3		
G GOVERNMENT		
IC INSTITUTION OR COMMUNITY		
E EDUCATION		
RO REGIONAL OPEN SPACE		
DO DISTRICT OPEN SPACE		
LO LOCAL OPEN SPACE		
A AMENITY		
OU OTHER SPECIFIED USES		
CDA COMPREHENSIVE DEVELOPMENT AREA		
ROADS, JUNCTIONS, ETC.		
TOTAL DEVELOPMENT AREA	328.00	100.00
TOTAL AREA OF PLANNING AREA	328.00	100.00

MAUNSELL | AECOM

Maunsell Consultants Asia Ltd

AGREEMENT NO. CE 35/2006 (CE)

KAI TAK DEVELOPMENT ENGINEERING STUDY CUM DESIGN AND CONSTRUCTION OF ADVANCE WORKS-INVESTIGATION, DESIGN AND CONSTRUCTION

RECOMMENDED OUTLINE DEVELOPMENT PLAN (DATED MAY 2008)

(SHEET 4 OF 7)

SCALE

A3 1:5000

DATE

JUN. 2008

CHECK

-

DRAWN

TLF

JOB NO.

60022408

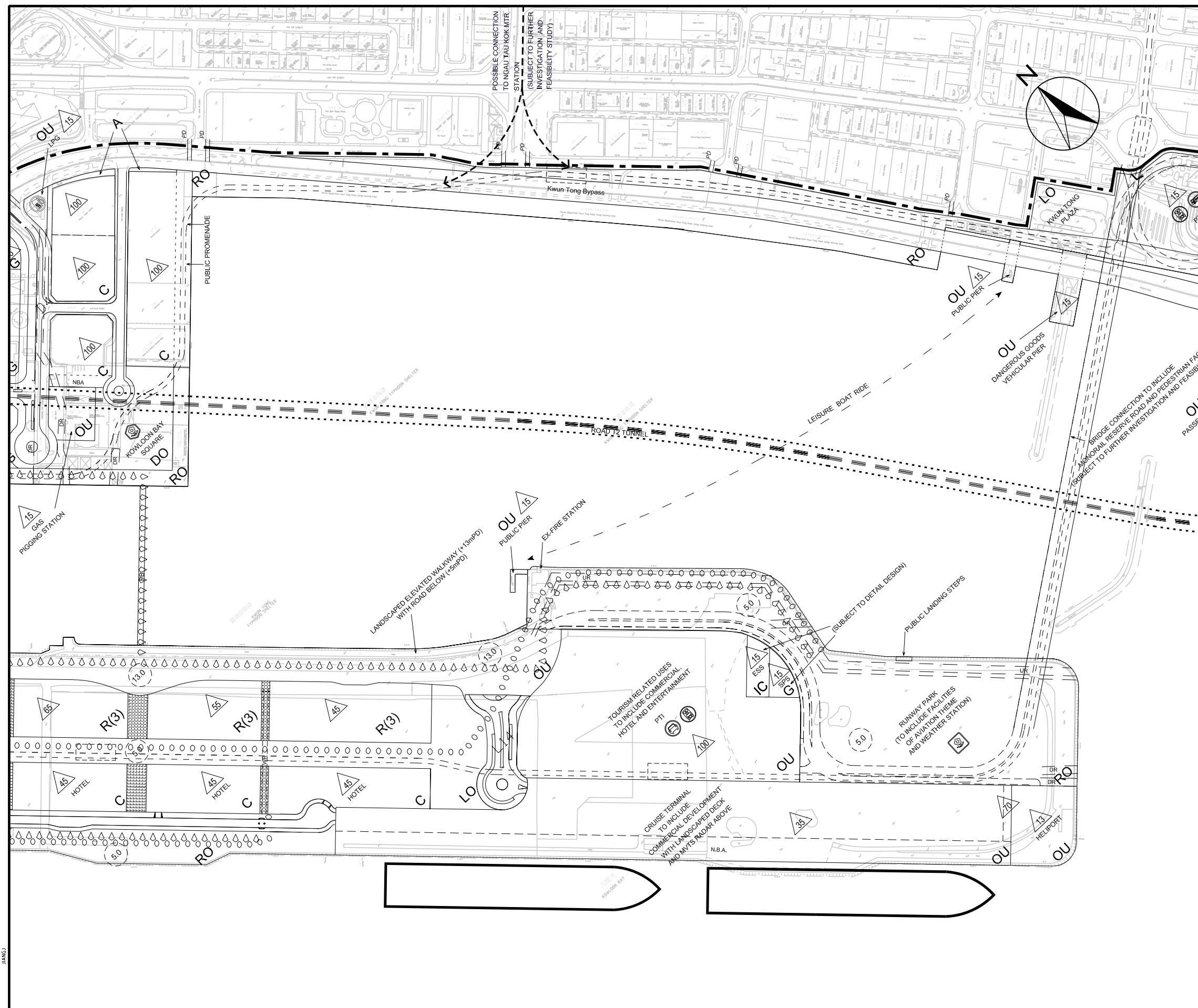
DRAWING No.

1.1a-D

REV

-

p \projects\60022408\DRAWING\REPORT\EIA\11a-D.dgn



## NOTATION

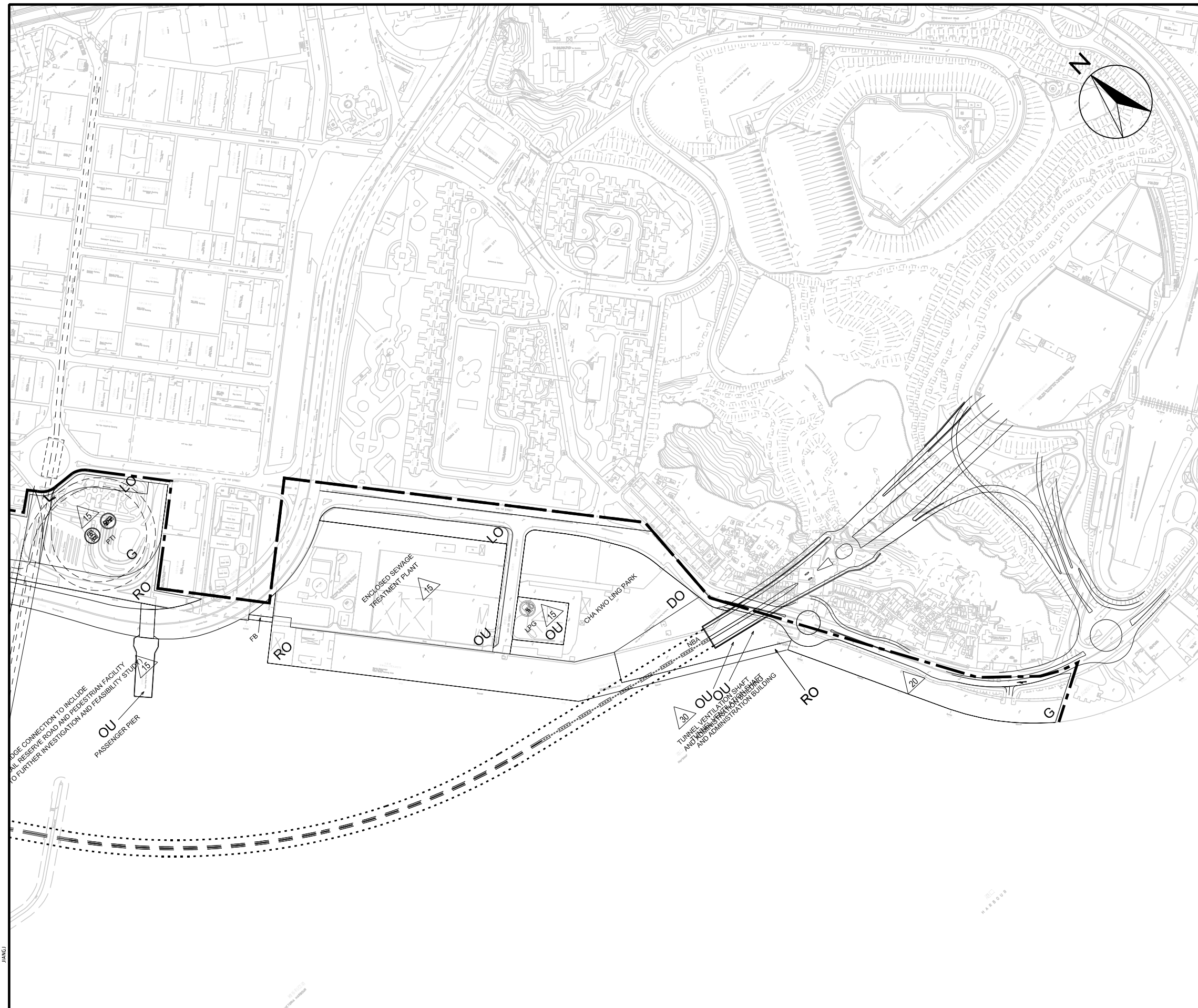
- |  |                             |  |   |
|--|-----------------------------|--|---|
|  | GOVERNMENT OFFICES          |  | HOSPITAL  |
|  | POLICE HEADQUARTERS         |  | POLYCLINIC / SPECIALIST CLINIC                      |
|  | DIVISIONAL POLICE STATION   |  | GENERAL CLINIC                                      |
|  | SUB-DIVISIONAL FIRE STATION |  | REGIONAL PARK                                       |
|  | AMBULANCE DEPOT             |  | TOWN PARK   |
|  | POST OFFICE                 |  | INDOOR RECREATION CENTRE                            |
|  | LIBRARY                     |  | CAR PARK  |
|  | COMMUNITY HALL              |  | BUS TERMINUS  |
|  | SOCIAL WELFARE FACILITY     |  | GREEN MINI BUS TERMINUS / PUBLIC LIGHT BUS TERMINUS |
|  | SECONDARY SCHOOL            |  | PETROL FILLING STATION                              |
|  | PRIMARY SCHOOL              |  | LIQUEFIED PETROLEUM GAS FILLING STATION             |
|  | KINDERGARTEN                |  |   |

- |  |                   |  |   |
|--|-------------------|--|---|
|  | PLANNING BOUNDARY |  | RESERVE FOR RAILWAY AND STATION (UNDERGROUND) (SUBJECT TO FURTHER INVESTIGATION)                    |
|  | ZONING BOUNDARY   |  | POSSIBLE RESERVE FOR MONORAIL AND STATIONS (SUBJECT TO FURTHER INVESTIGATION AND FEASIBILITY STUDY) |
|  | ELEVATED ROAD     |  | DRAINAGE RESERVE  |
|  | DEPRESSED ROAD    |  | UTILITY RESERVE   |
|  | TUNNEL            |  | WATERWORK RESERVE   |
|  | PEDESTRIAN STREET |  | MAXIMUM BUILDING HEIGHT (IN M ABOVE PD)   |
|  | CYCLE TRACK       |  | PROPOSED LEVEL (IN M ABOVE PD)  |
|  | HERITAGE TRAIL    |  | PEDESTRIAN CROSSING   |

- |      |   |     |                              |
|------|---|-----|------------------------------|
| AMC  | ANIMAL MANAGEMENT CENTRE                | PFS | PETROL FILLING STATION       |
| ESS  | ELECTRICITY SUBSTATION                  | PTI | PUBLIC TRANSPORT INTERCHANGE |
| FB   | FOOTBRIDGE                              | RCP | REFUSE COLLECTION POINT      |
| LPG  | LIQUEFIED PETROLEUM GAS FILLING STATION | SPS | SEWAGE PUMPING STATION       |
| MVTS | MARINE VESSEL TRACKING SYSTEM           | SW  | SUBWAY                       |
| NBA  | NON-BUILDING AREA                       |     |                              |

## SCHEDULE OF USES AND AREAS

USES	NET SITE	AREA & %
	HECTARES	%
C COMMERCIAL		
RS SPECIAL RESIDENTIAL		
R1 RESIDENTIAL - ZONE 1		
R2 RESIDENTIAL - ZONE 2		
R3 RESIDENTIAL - ZONE 3		
G GOVERNMENT		
IC INSTITUTION OR COMMUNITY		
E EDUCATION		
RO REGIONAL OPEN SPACE		
DO DISTRICT OPEN SPACE		
LO LOCAL OPEN SPACE		
A AMENITY		
OU OTHER SPECIFIED USES		
CDA COMPREHENSIVE DEVELOPMENT AREA		
ROADS, JUNCTIONS, ETC.		
TOTAL DEVELOPMENT AREA	328.00	100.00
TOTAL AREA OF PLANNING AREA	328.00	100.00



## NOTATION

- |                             |   |
|-----------------------------|---|
| GOVERNMENT OFFICES          | HOSPITAL  |
| POLICE HEADQUARTERS         | POLYCLINIC / SPECIALIST CLINIC                      |
| DIVISIONAL POLICE STATION   | GENERAL CLINIC                                      |
| SUB-DIVISIONAL FIRE STATION | REGIONAL PARK                                       |
| AMBULANCE DEPOT             | TOWN PARK   |
| POST OFFICE                 | INDOOR RECREATION CENTRE                            |
| LIBRARY                     | CAR PARK  |
| COMMUNITY HALL              | BUS TERMINUS  |
| SOCIAL WELFARE FACILITY     | GREEN MINI BUS TERMINUS / PUBLIC LIGHT BUS TERMINUS |
| SECONDARY SCHOOL            | PETROL FILLING STATION                              |
| PRIMARY SCHOOL              | LIQUEFIED PETROLEUM GAS FILLING STATION             |
| KINDERGARTEN                |   |

- |                   |   |
|-------------------|---|
| PLANNING BOUNDARY | RESERVE FOR RAILWAY AND STATION (UNDERGROUND) (SUBJECT TO FURTHER INVESTIGATION)                    |
| ZONING BOUNDARY   | POSSIBLE RESERVE FOR MONORAIL AND STATIONS (SUBJECT TO FURTHER INVESTIGATION AND FEASIBILITY STUDY) |
| ELEVATED ROAD     | DRAINAGE RESERVE  |
| DEPRESSED ROAD    | UTILITY RESERVE   |
| TUNNEL            | WATERWORK RESERVE   |
| PEDESTRIAN STREET | MAXIMUM BUILDING HEIGHT (IN M ABOVE PD)   |
| CYCLE TRACK       | PROPOSED LEVEL (IN M ABOVE PD)  |
| HERITAGE TRAIL    | PEDESTRIAN CROSSING   |

- |      |   |     |                              |
|------|---|-----|------------------------------|
| AMC  | ANIMAL MANAGEMENT CENTRE                | PFS | PETROL FILLING STATION       |
| ESS  | ELECTRICITY SUBSTATION                  | PTI | PUBLIC TRANSPORT INTERCHANGE |
| FB   | FOOTBRIDGE                              | RCP | REFUSE COLLECTION POINT      |
| LPG  | LIQUEFIED PETROLEUM GAS FILLING STATION | SPS | SEWAGE PUMPING STATION       |
| MVTS | MARINE VESSEL TRACKING SYSTEM           | SW  | SUBWAY                       |
| NBA  | NON-BUILDING AREA                       |     |                              |

## SCHEDULE OF USES AND AREAS

USES	NET SITE	AREA & %	
	HECTARES		%
C COMMERCIAL			
RS SPECIAL RESIDENTIAL			
R1 RESIDENTIAL - ZONE 1			
R2 RESIDENTIAL - ZONE 2			
R3 RESIDENTIAL - ZONE 3			
G GOVERNMENT			
IC INSTITUTION OR COMMUNITY			
E EDUCATION			
RO REGIONAL OPEN SPACE			
DO DISTRICT OPEN SPACE			
LO LOCAL OPEN SPACE			
A AMENITY			
OU OTHER SPECIFIED USES			
CDA COMPREHENSIVE DEVELOPMENT AREA			
ROADS, JUNCTIONS, ETC.			
TOTAL DEVELOPMENT AREA	328.00		100.00
TOTAL AREA OF PLANNING AREA	328.00		100.00

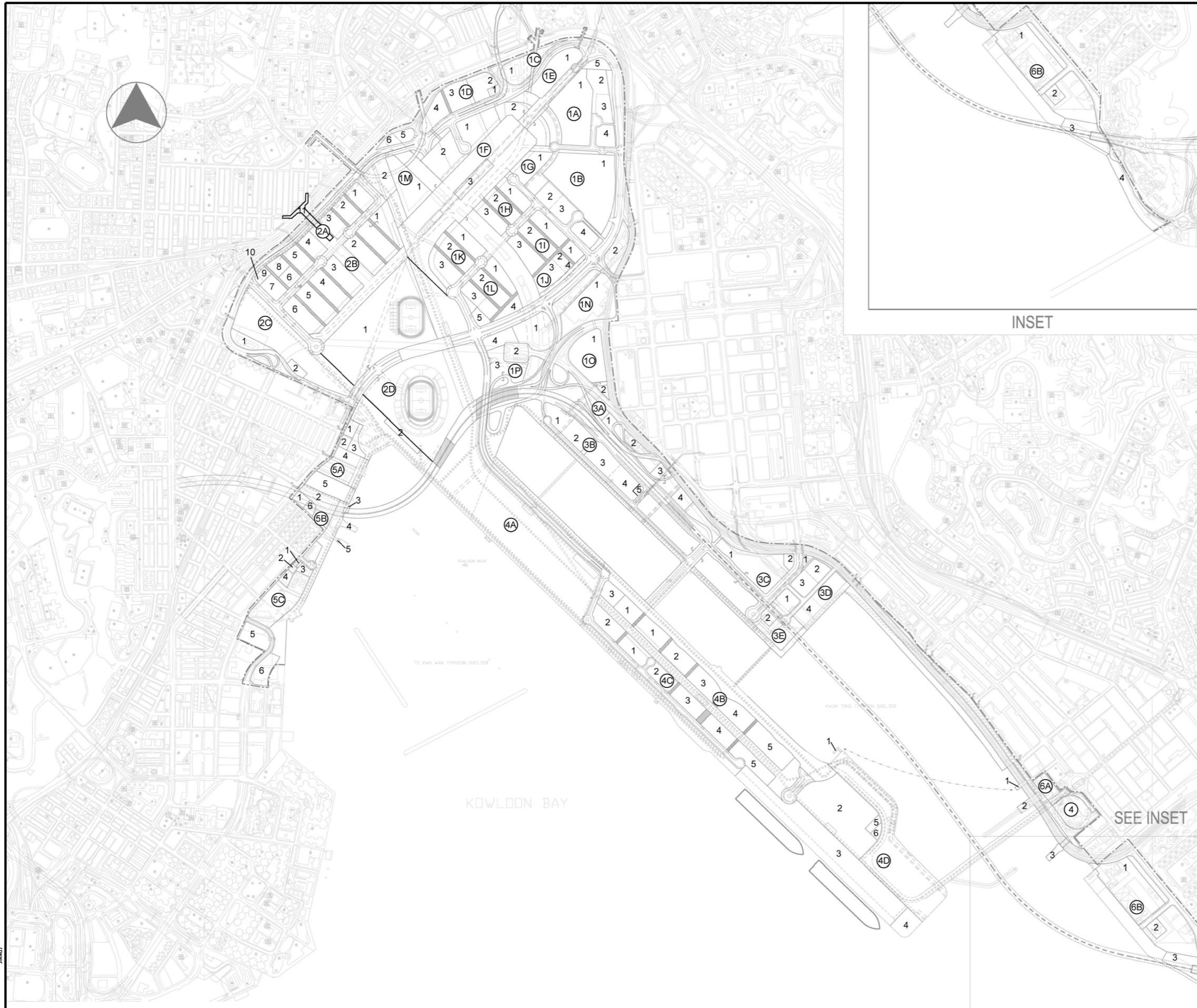
MAUNSELL | AECOM  
Maunsell Consultants Asia Ltd

AGREEMENT NO. CE 35/2006 (CE)  
KAI TAK DEVELOPMENT ENGINEERING STUDY CUM DESIGN AND CONSTRUCTION OF ADVANCE WORKS-INVESTIGATION, DESIGN AND CONSTRUCTION

## RECOMMENDED OUTLINE DEVELOPMENT PLAN (DATED MAY 2008)

(SHEET 6 OF 7)

SCALE	A3 1:5000	DATE	JUN. 2008
CHECK	-	DRAWN	TLF
JOB NO.	60022408	DRAWING No.	1.1a-F
		REV	-



## NOTATION

- |  |                             |  |   |
|--|-----------------------------|--|---|
|  | GOVERNMENT OFFICES          |  | HOSPITAL  |
|  | POLICE HEADQUARTERS         |  | POLYCLINIC / SPECIALIST CLINIC                      |
|  | DIVISIONAL POLICE STATION   |  | GENERAL CLINIC                                      |
|  | SUB-DIVISIONAL FIRE STATION |  | REGIONAL PARK                                       |
|  | AMBULANCE DEPOT             |  | TOWN PARK   |
|  | POST OFFICE                 |  | INDOOR RECREATION CENTRE                            |
|  | LIBRARY                     |  | CAR PARK  |
|  | COMMUNITY HALL              |  | BUS TERMINUS  |
|  | SOCIAL WELFARE FACILITY     |  | GREEN MINI BUS TERMINUS / PUBLIC LIGHT BUS TERMINUS |
|  | SECONDARY SCHOOL            |  | PETROL FILLING STATION                              |
|  | PRIMARY SCHOOL              |  | LIQUEFIED PETROLEUM GAS FILLING STATION             |
|  | KINDERGARTEN                |  |   |

- |  |                     |  |   |
|--|---------------------|--|---|
|  | PLANNING BOUNDARY   |  | RESERVE FOR RAILWAY AND STATION (UNDERGROUND) (SUBJECT TO FURTHER INVESTIGATION)                    |
|  | ZONING BOUNDARY     |  | POSSIBLE RESERVE FOR MONORAIL AND STATIONS (SUBJECT TO FURTHER INVESTIGATION AND FEASIBILITY STUDY) |
|  | ELEVATED ROAD       |  | DRAINAGE RESERVE  |
|  | DEPRESSED ROAD      |  | UTILITY RESERVE   |
|  | TUNNEL              |  | WATERWORK RESERVE   |
|  | PEDESTRIAN STREET   |  | MAXIMUM BUILDING HEIGHT (1M M ABOVE PD)   |
|  | CYCLE TRACK         |  | PROPOSED LEVEL (1M M ABOVE PD)  |
|  | HERITAGE TRAIL      |  |   |
|  | PEDESTRIAN CROSSING |  |   |

- |      |   |     |                              |
|------|---|-----|------------------------------|
| AMC  | ANIMAL MANAGEMENT CENTRE                | PFS | PETROL FILLING STATION       |
| LPG  | LIQUEFIED PETROLEUM GAS FILLING STATION | PTI | PUBLIC TRANSPORT INTERCHANGE |
| ESS  | ELECTRICITY SUBSTATION                  | RCP | REFUSE COLLECTION POINT      |
| FB   | FOOTBRIDGE                              | SPS | SEWAGE PUMPING STATION       |
| MVTS | MARINE VESSEL TRACKING SYSTEM           | SW  | SUBWAY                       |
| NBA  | NON-BUILDING AREA                       |     |                              |

## SCHEDULE OF USES AND AREAS

USES	NET SITE	AREA & %
	HECTARES	%
COMMERCIAL		
SPECIAL RESIDENTIAL		
RESIDENTIAL - ZONE 1		
RESIDENTIAL - ZONE 2		
RESIDENTIAL - ZONE 3		
GOVERNMENT		
INSTITUTION OR COMMUNITY		
EDUCATION		
REGIONAL OPEN SPACE		
DISTRICT OPEN SPACE		
LOCAL OPEN SPACE		
AMENITY		
OTHER SPECIFIED USES		
COMPREHENSIVE DEVELOPMENT AREA		
ROADS, JUNCTIONS, ETC.		
TOTAL DEVELOPMENT AREA	328.00	100.00
TOTAL AREA OF PLANNING AREA	328.00	100.00

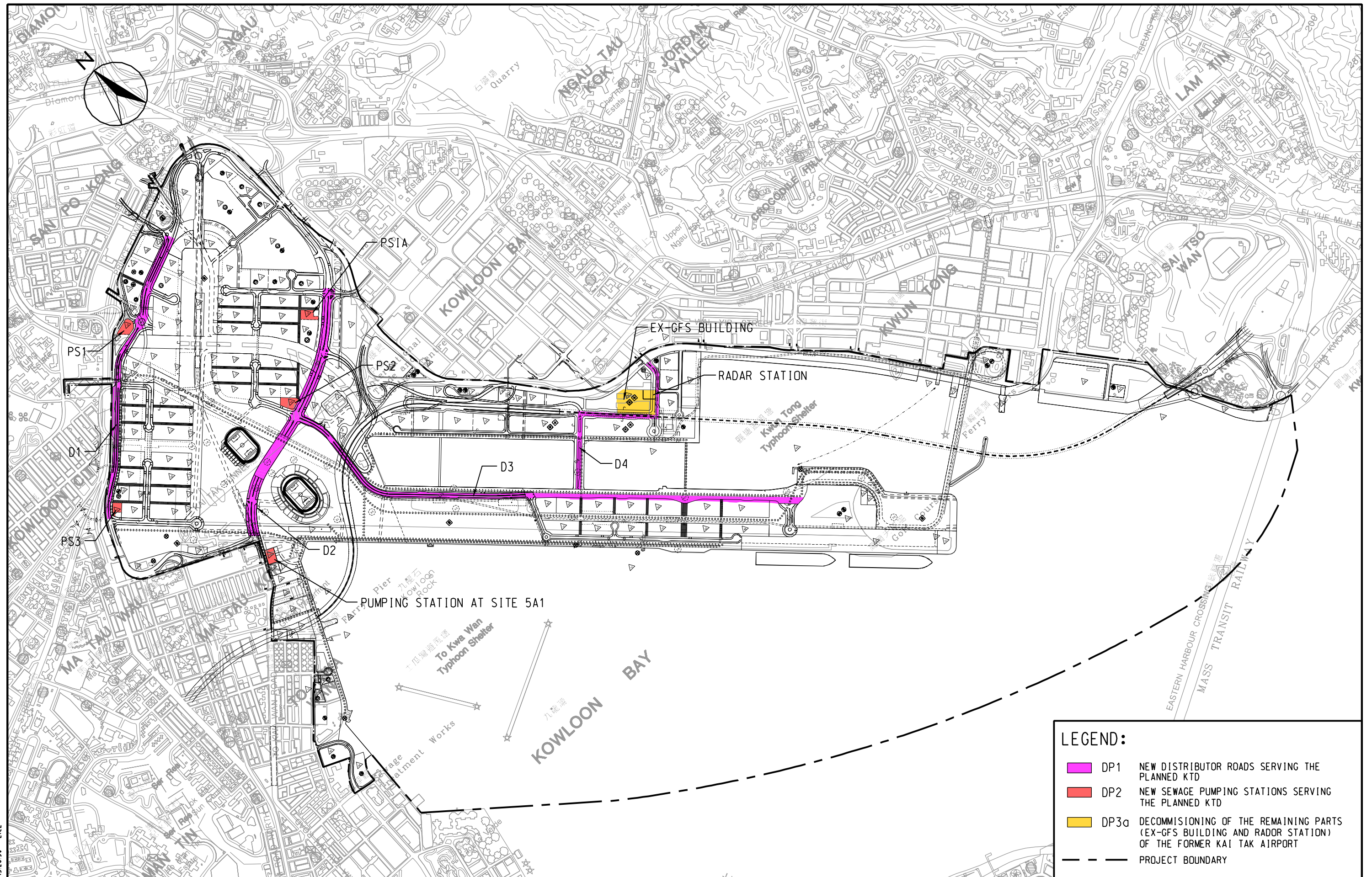
MAUNSELL AECOM  
Maunsell Consultants Asia Ltd

AGREEMENT NO. CE 35/2006 (CE)  
KAI TAK DEVELOPMENT ENGINEERING STUDY CUM DESIGN AND CONSTRUCTION OF ADVANCE WORKS-INVESTIGATION, DESIGN AND CONSTRUCTION

## RECOMMENDED OUTLINE DEVELOPMENT PLAN (DATED MAY 2008)

(SHEET 7 OF 7)

SCALE	A3 1:20000	DATE	JUN 2008
CHECK	-	DRAWN	J.J.
JOB No.	60022408	DRAWING No.	1.1a-G
		REV	-



DATE 2008-8-18 15:28:30 LIC2





MAUNSELL | AECOM

Maunsell Consultants Asia Ltd

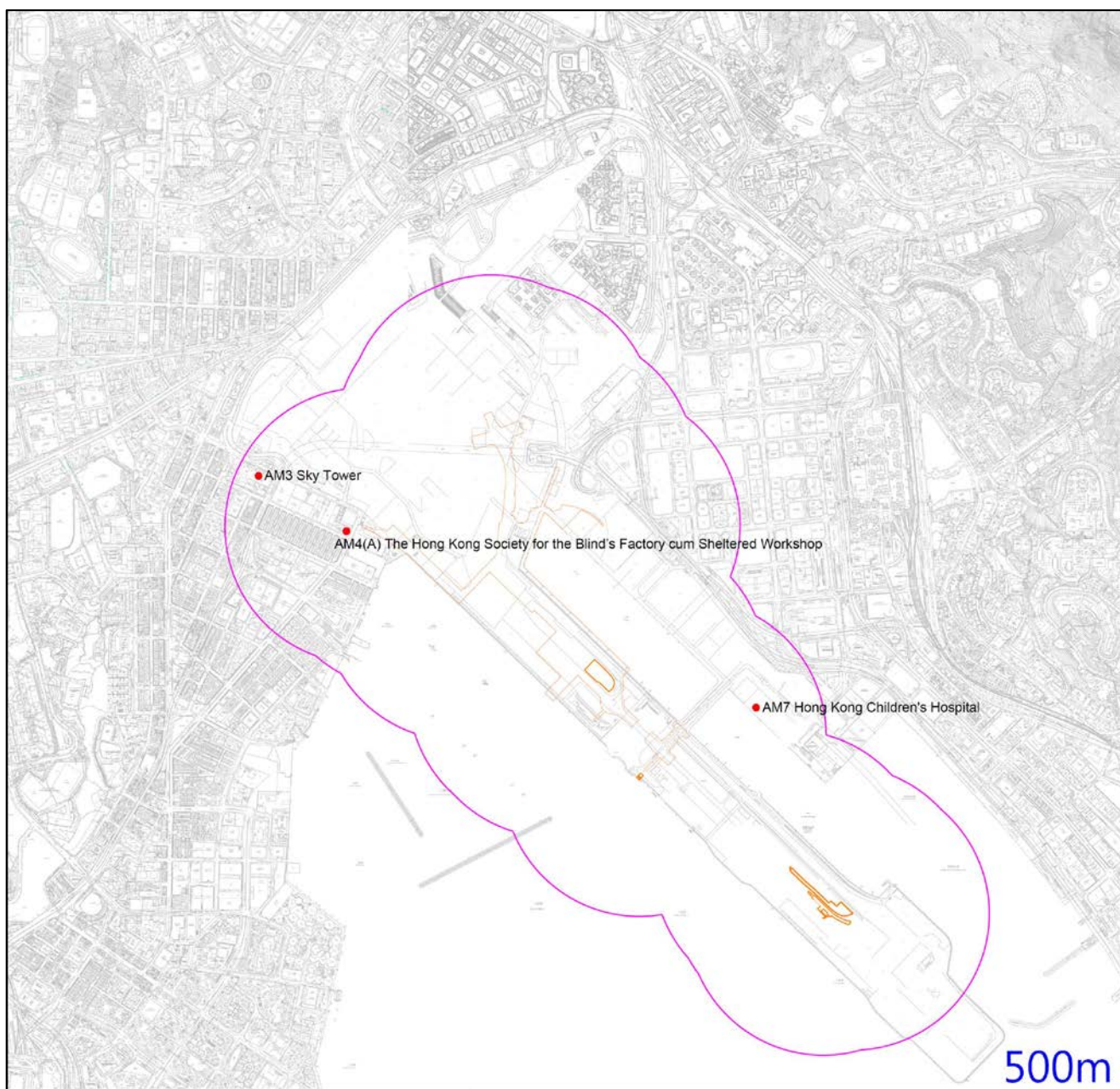
AGREEMENT NO. CE 35/2006 (CE)  
KAI TAK DEVELOPMENT ENGINEERING STUDY CUM DESIGN AND  
CONSTRUCTION OF ADVANCE WORKS-INVESTIGATION, DESIGN AND CONSTRUCTION

## DESIGNATED PROJECTS IN THIS EIA STUDY

LEGEND:

-  DP1 NEW DISTRIBUTOR ROADS SERVING THE PLANNED KTD  
 DP2 NEW SEWAGE PUMPING STATIONS SERVING THE PLANNED KTD  
 DP3a DECOMMISSIONING OF THE REMAINING PARTS (EX-GFS BUILDING AND RADAR STATION) OF THE FORMER KAI TAK AIRPORT  
 — — — PROJECT BOUNDARY

SCALE	A3 1:15000	DATE	OCT.2007
CHECK	-	DRAWN	LCR
JOB No.	60022503	DRAWING No.	1.2
			REV -





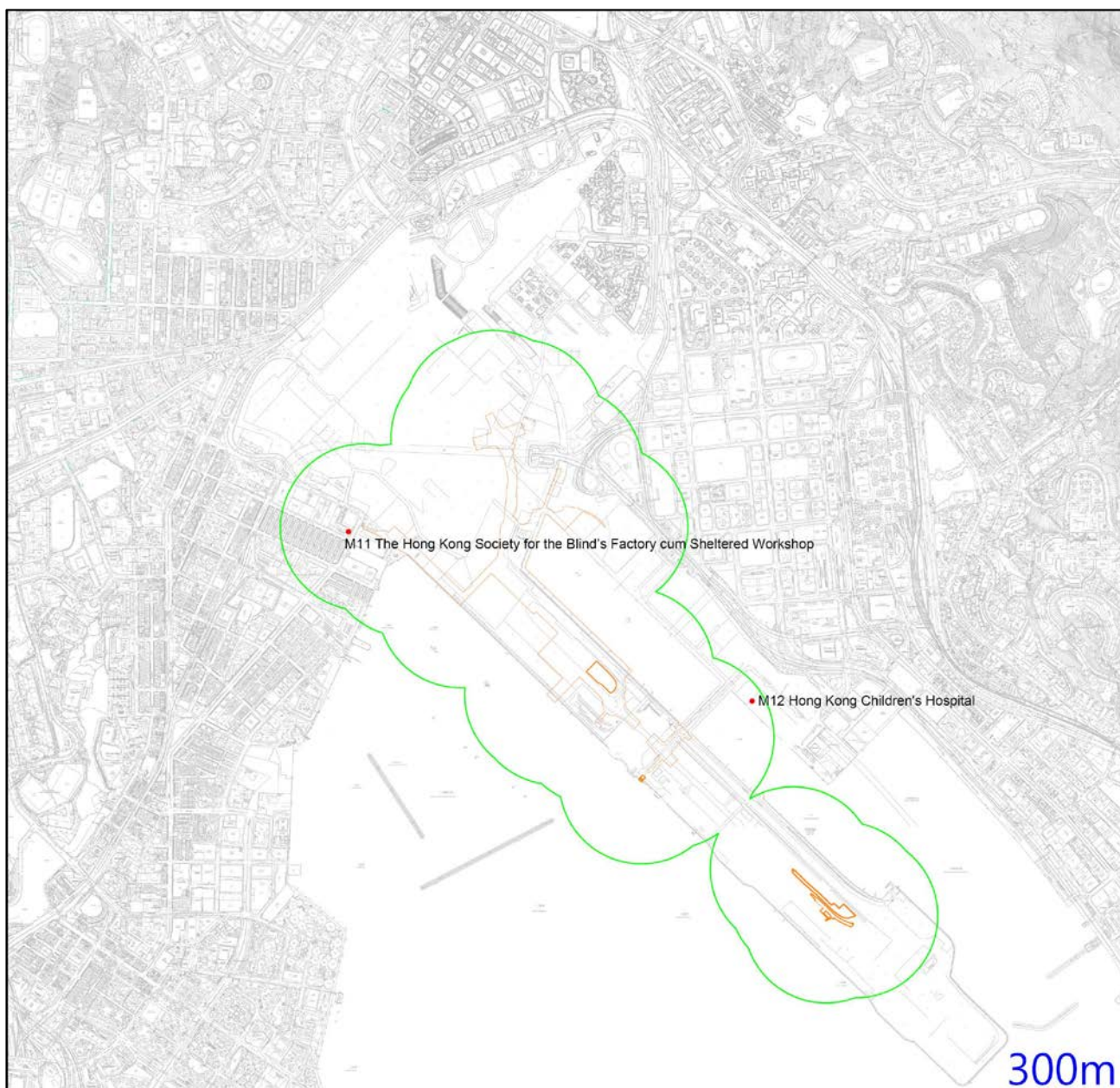
	Site boundary of the Project
	500m away from site boundary

Figure 2.1 - LOCATIONS OF AIR QUALITY MONITORING STATIONS





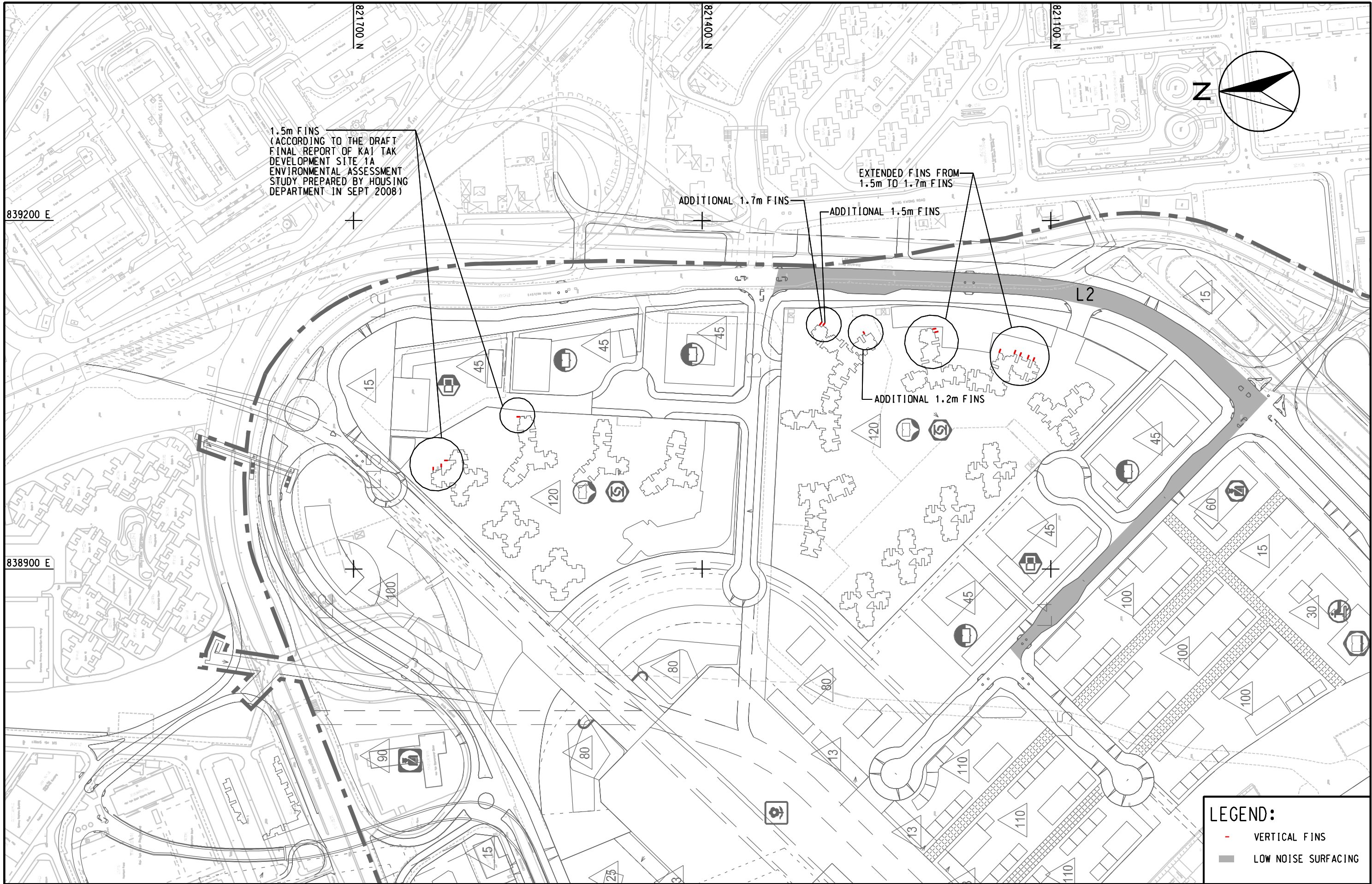
	Site boundary of the Project
	300m away from site boundary

Figure 2.2 - LOCATIONS OF NOISE MONITORING STATIONS



LEGEND:			
-	VERTICAL FINS		
■	LOW NOISE SURFACING		

MAUNSELL | AECOM

Maunsell Consultants Asia Ltd

AGREEMENT NO. CE 35/2006 (CE)  
KAI TAK DEVELOPMENT ENGINEERING STUDY CUM DESIGN AND  
CONSTRUCTION OF ADVANCE WORKS-INVESTIGATION, DESIGN AND CONSTRUCTION

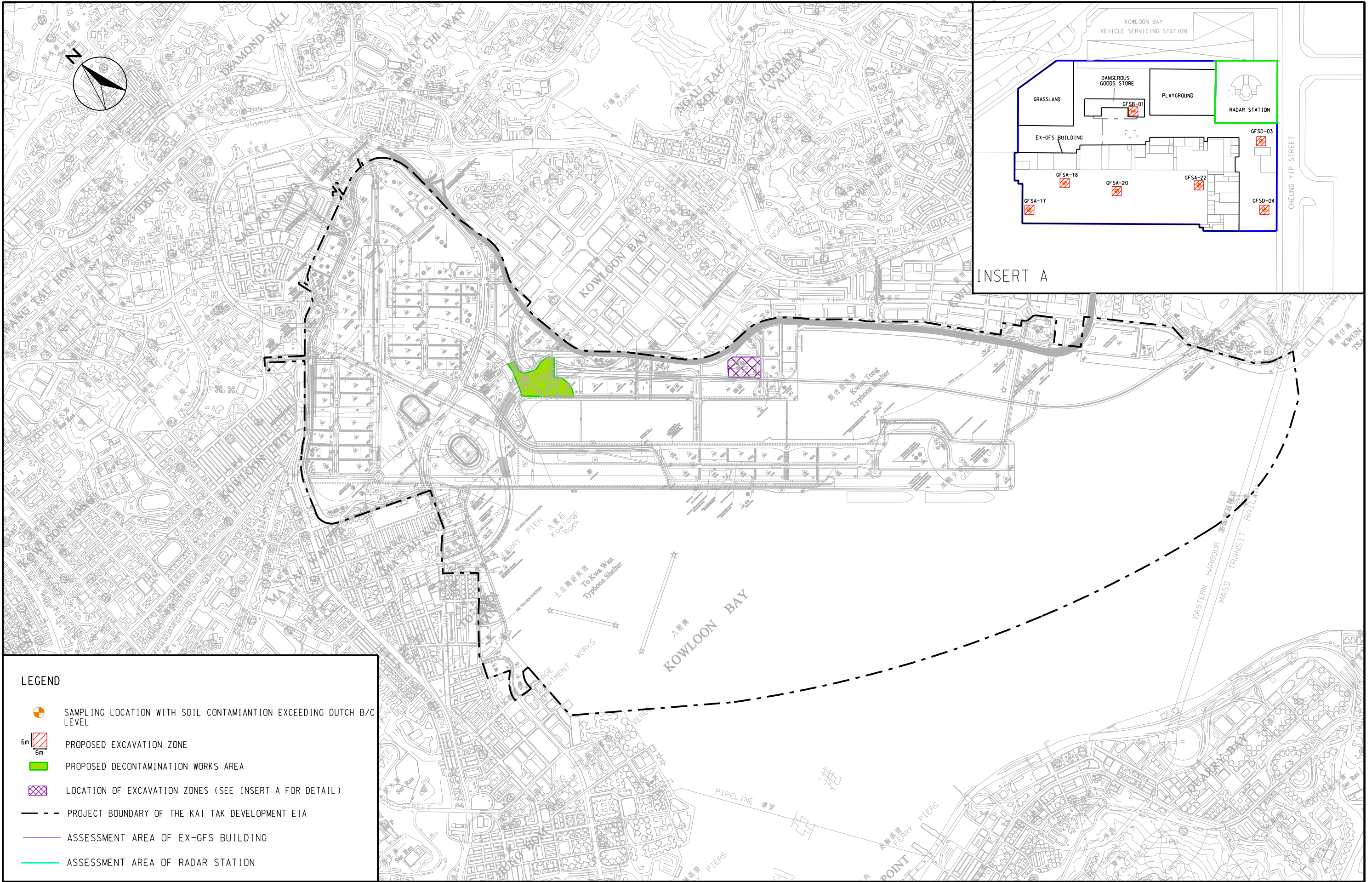
LOCATIONS OF DIRECT NOISE MITIGATION MEASURES

(SHEET 1 OF 2)

SCALE	A3 1:3000	DATE	MAY 2008
CHECK	-	DRAWN	LC
JOB No.	60022503	DRAWING No.	2.3
		REV	-

DATE 2008-11-18 17:44:45 XUCF

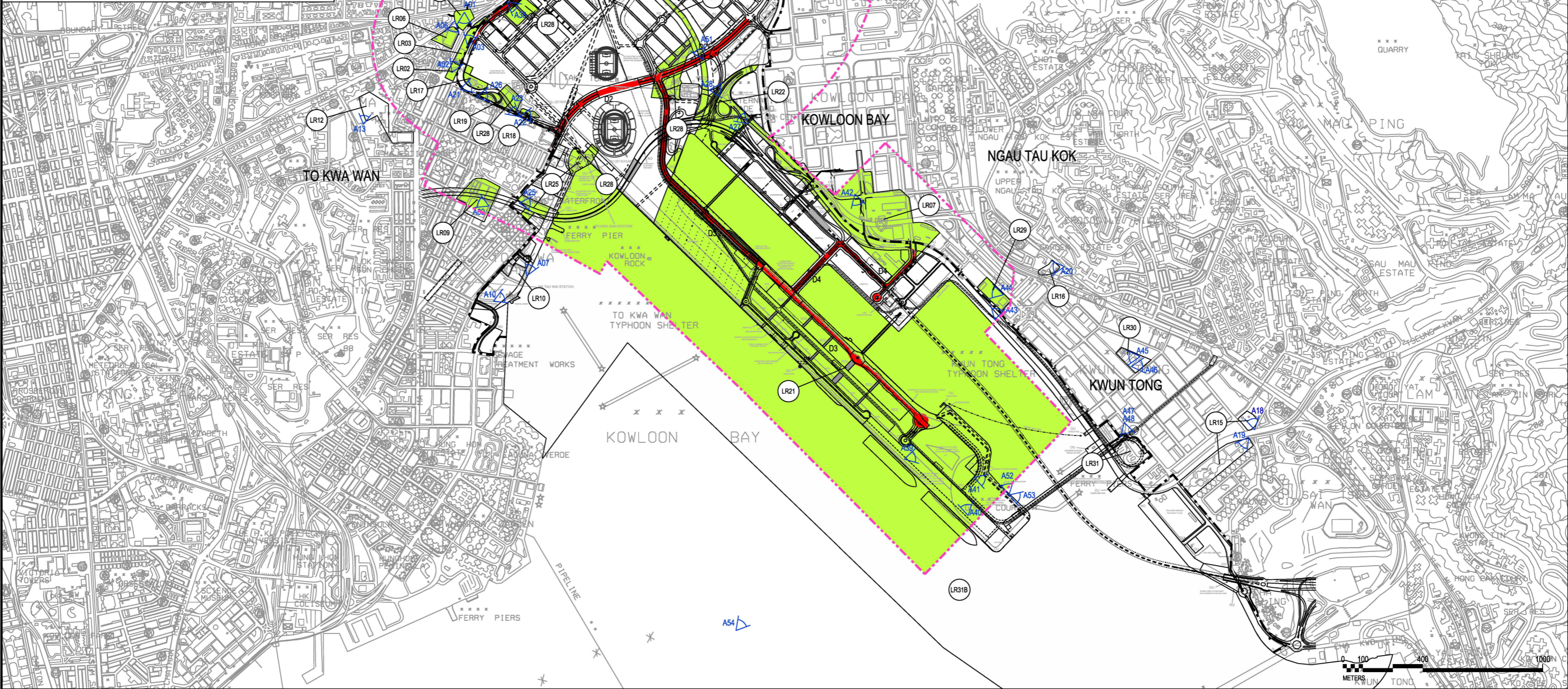




<b>MAUNSELL   AECOM</b> Maunsell Consultants Asia Ltd	AGREEMENT NO. CE 35/2006 (CE) KAI TAK DEVELOPMENT ENGINEERING STUDY CUM DESIGN AND CONSTRUCTION OF ADVANCE WORKS-INVESTIGATION, DESIGN AND CONSTRUCTION <b>PROPOSED DECONTAMINATION WORKS AREA</b>			
	SCALE	A3 1:18000	DATE	MAY 08
	CHECK	ELYC	DRAWN	POHM
	JOB No.	60022503	DRAWING No.	2.4
			REV	-

KEY FOR LANDSCAPE RESOURCES	
LR01	Olympic Garden
LR02	Sung Wong Toi Garden
LR03	Sung Wong Toi Playground
LR04A	Rest Garden near Nga Tsin Wai Road
LR04B	Amenity Areas near Sha Po Road
LR05	Shek Ku Lung Road Playground
LR06	Argyle Street Playground
LR07	Trees in Amenity Areas near Kai Fuk Road
LR08	Kai Tak East Playground
LR09	To Kwa Wan Recreation Ground
LR11	Kowloon Walled City Park and Carpenter Road Park
LR17	Trees near Aviation Club Buildings
LR18	Trees at the periphery of existing lot boundary along Sung Wong Toi Road
LR19	Trees in the Amenity Areas along Sung Weng Toi Road
LR20	Trees in Amenity Areas of the interchange near Kwun Tong Road
LR21	Existing trees along the runway
LR22	Trees in Amenity Areas near the Interchange in Kowloon Bay
LR23	Trees in Amenity Areas of San Po Kong Interchange
LR24	Trees in Amenity Area near Rhythm Garden
LR25	Trees near Grand Wasterfront
LR26	Trees in Amenity Areas of Choi Hung Road PTI
LR27	Trees in planned open space near Rhythm Garden
LR28	Trees in North Apron of Former Airport
LR29	Hoi Bun Road Park
LR31A	Kai Tak Nullah
LR31B	Victoria Harbour

LEGEND	
	ENGINEERING REVIEW STUDY AREA BOUNDARY
	LANDSCAPE IMPACT STUDY BOUNDARY FOR DP1 (500m)
	DP1-DISTRIBUTOR ROADS
	LANDSCAPE RESOURCES
	LANDSCAPE RESOURCES TAG
	PHOTO TASKING POINT AND PHOTO NO.



PLOT FILE BY : 26/11/2008

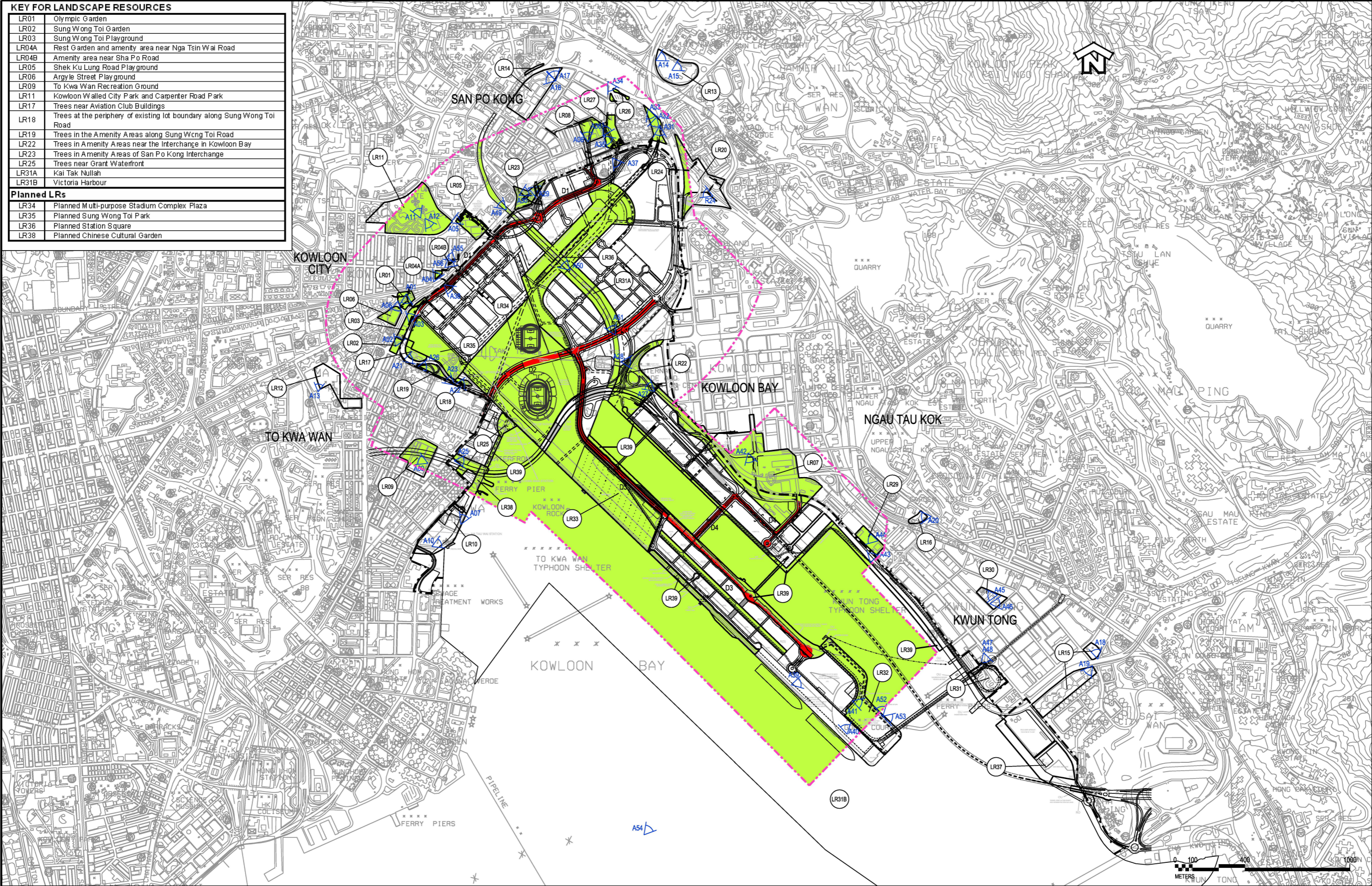
MAUNSELL | AECOM  
Maunsell Consultants Asia Ltd

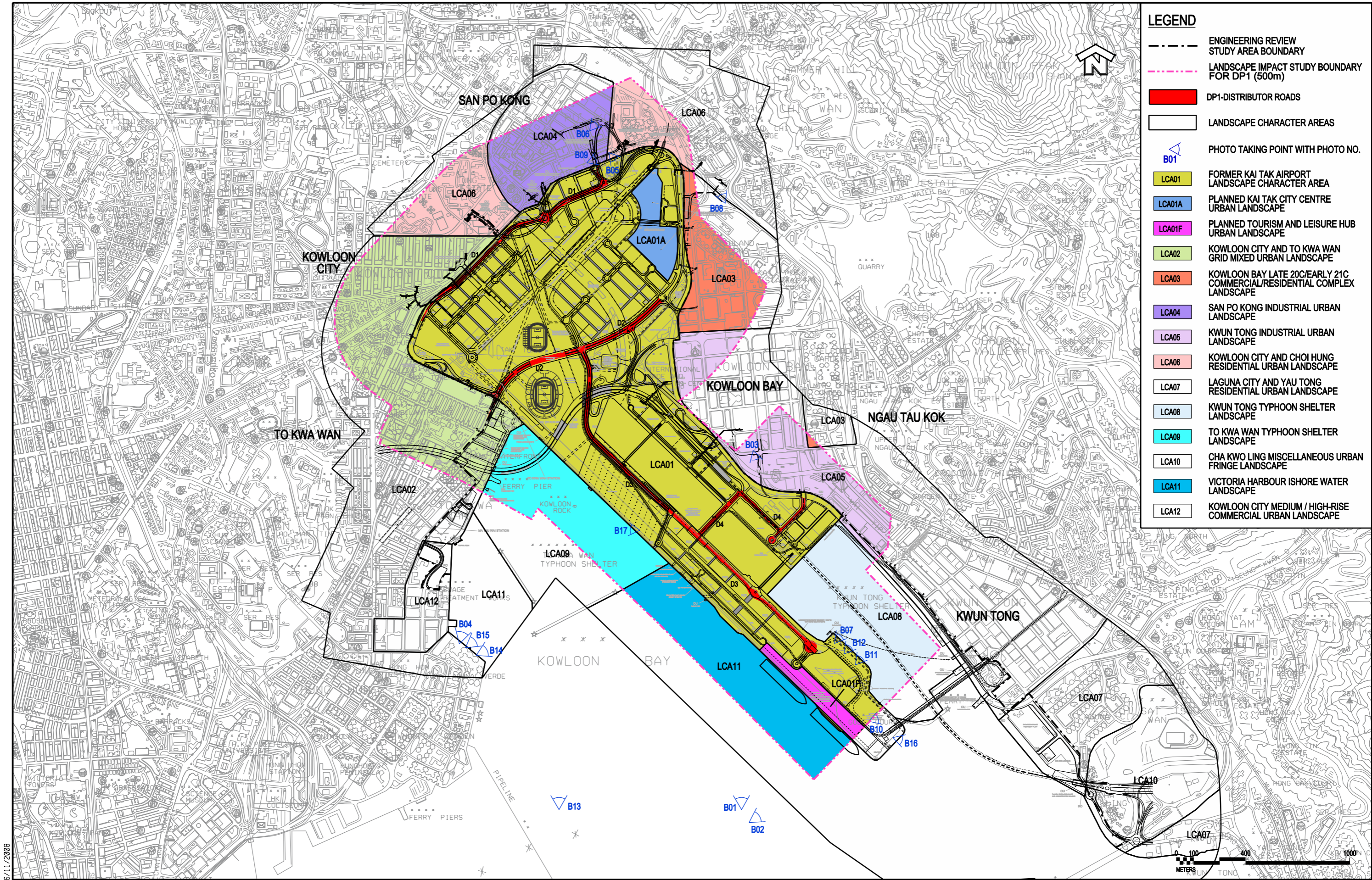
AGREEMENT NO. CE 35/2006 (CE)  
KAI TAK DEVELOPMENT ENGINEERING STUDY CUM DESIGN AND CONSTRUCTION OF ADVANCE WORKS-INVESTIGATION, DESIGN AND CONSTRUCTION

BASELINE LANDSCAPE RESOURCES WITH DP1 - DISTRIBUTOR ROADS OVERLAID DURING CONSTRUCTION

SCALE	A3 1:20000	DATE	MAY 2008
CHECK	JC	DRAWN	FL
JOB NO.	60022408	DRAWING NO.	FIGURE 2.4A
		REV	-

KEY FOR LANDSCAPE RESOURCES	
LR01	Olympic Garden
LR02	Sung Wong Toi Garden
LR03	Sung Wong Toi Playground
LR04A	Rest Garden and amenity area near Nga Tsin Wai Road
LR04B	Amenity area near Sha Po Road
LR05	Shek Ku Lung Road Playground
LR06	Argyle Street Playground
LR09	To Kwa Wan Recreation Ground
LR11	Kowloon Walled City Park and Carpenter Road Park
LR17	Trees near Aviation Club Buildings
LR18	Trees at the periphery of existing lot boundary along Sung Wong Toi Road
LR19	Trees in the Amenity Areas along Sung Wong Toi Road
LR22	Trees in Amenity Areas near the Interchange in Kowloon Bay
LR23	Trees in Amenity Areas of San Po Kong Interchange
LR25	Trees near Grant Waterfront
LR31A	Kai Tak Nullah
LR31B	Victoria Harbour
Planned LRs	
LR34	Planned Multi-purpose Stadium Complex Plaza
LR35	Planned Sung Wong Toi Park
LR36	Planned Station Square
LR38	Planned Chinese Cultural Garden





PLOT FILE BY : 26/11/2008

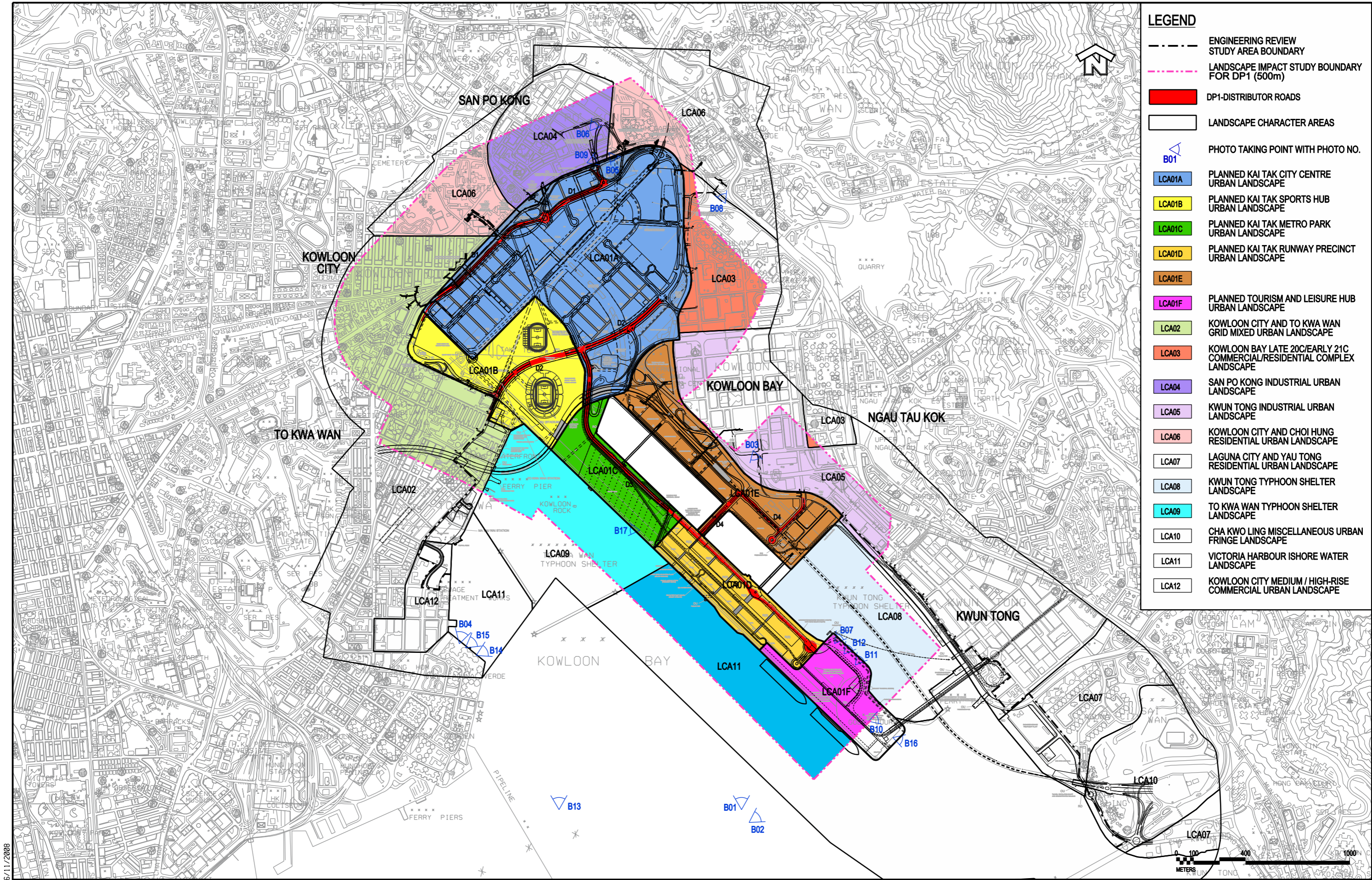
MAUNSELL | AECOM

Maunsell Consultants Asia Ltd

AGREEMENT NO. CE 35/2006 (CE)  
KAI TAK DEVELOPMENT ENGINEERING STUDY CUM DESIGN AND CONSTRUCTION OF ADVANCE WORKS- INVESTIGATION, DESIGN AND CONSTRUCTION

BASELINE LANDSCAPE CHARACTER AREAS WITH DP1 - DISTRIBUTOR ROAD OVERLAID DURING CONSTRUCTION

SCALE	A3 1:20000	DATE	MAY 2008
CHECK	JC	DRAWN	FL
JOB NO.	60022408	DRAWING NO.	FIGURE 2.5A
		REV	-



PLOT FILE BY : 26/11/2008

**MAUNSELL | AECOM**  
Maunsell Consultants Asia Ltd

AGREEMENT NO. CE 35/2006 (CE)  
KAI TAK DEVELOPMENT ENGINEERING STUDY CUM DESIGN AND CONSTRUCTION OF ADVANCE WORKS-INVESTIGATION, DESIGN AND CONSTRUCTION

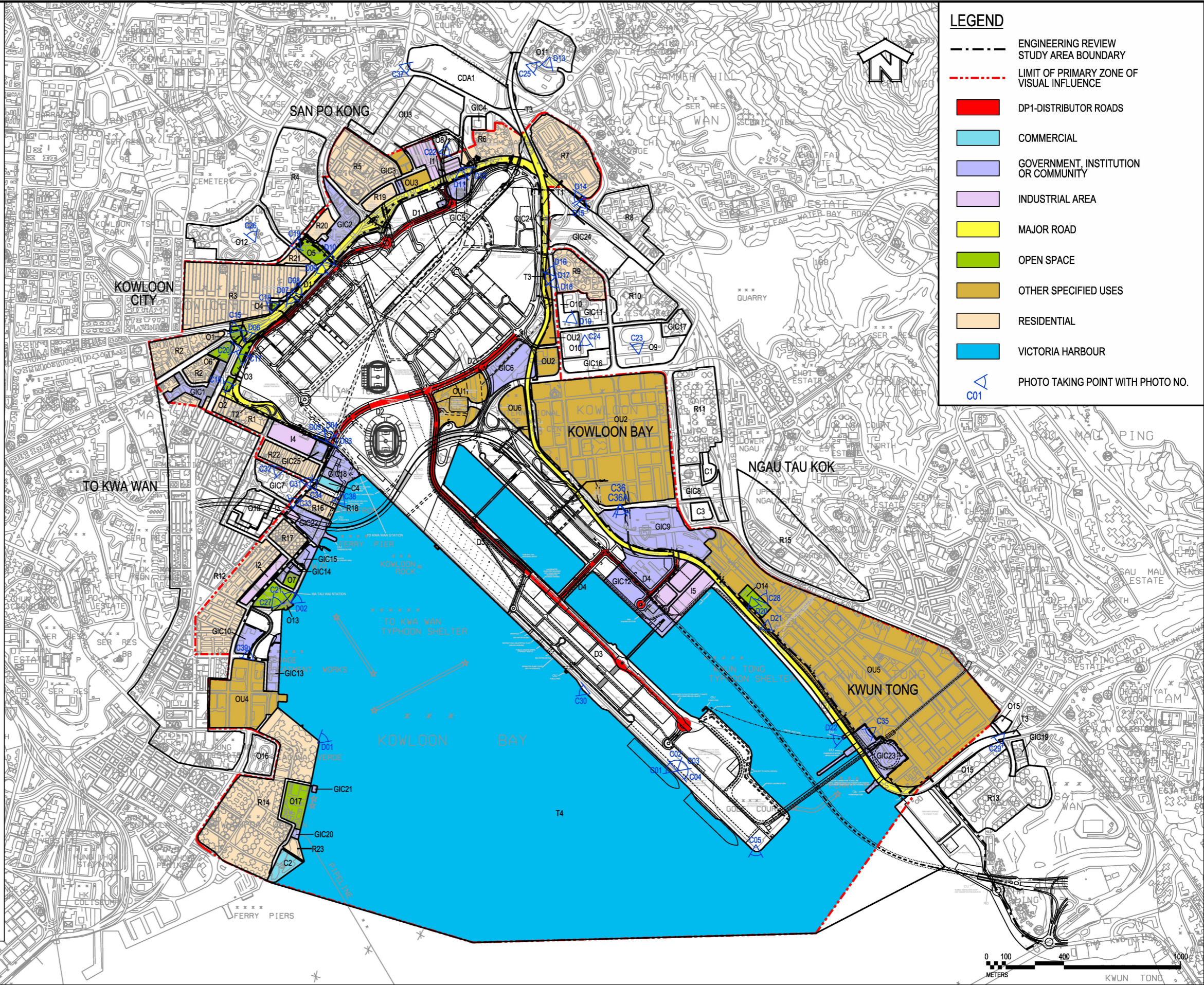
## BASELINE LANDSCAPE CHARACTER AREAS WITH DP1 - DISTRIBUTOR ROAD OVERLAID DURING OPERATION

SCALE	A3 1:20000	DATE	MAY 2008
CHECK	JC	DRAWN	FL
JOB NO.	60022408	DRAWING NO.	FIGURE 2.5B
		REV	-

D:\KAI TAK\DRAWING\EM&A\FIGURE 02-05-B0.DGN

PLOT FILE BY : 26/11/2008

Existing VSR	
C2	Harbour Plaza and Harbourfront
C4	Newport Centre (planned residential use under KTD)
GIC1	Evangel Hospital, Christian Alliance P.C. Lau Memorial International School, Notre Dame College, Holy Trinity Primary School, HK Planning Association Centre
GIC3	Cognitio College
GIC5	Kai Tak Operation Base and Existing Electricity Substation (same planned uses under KTD)
GIC6	EMSD Headquarter (same planned uses under KTD)
GIC9	Kowloon Bay Vehicle Inspection Centre, Vehicle Examination Centre, Water Supplies Department Kowloon East Regional Building, Kowloon Bay Transfer Station, Kowloon Bay Government Land Transport Agency Transport Pool
GIC10	Kei To Secondary School, Po Leung Kuk Ngan Po Ling College
GIC12	Kowloon Bay Vehicle Sewing Station, Public Works Central Laboratory Building (planned GIC use and open space under KTD)
GIC13	To Kwa Wan Sewage Treatment Works
GIC14	Holy Carpenter Primary School and Oblate Father's Primary School (same planned uses under KTD)
GIC15	To Kwa Wan Motor Vehicle Inspection Centre and the adjacent cargo working area along Long Yuet Street (planned open space under KTD)
GIC18	EMSD Workshops (planned sewage pumping station and open space under KTD)
GIC2	Ng Wah College, Lee Kau Yan Memorial School, Sir Robert Black Health Centre, Petrol Station
GIC20	Tai Wan Salt Water Pumping Station
GIC21	Police Operational Facility at Dyer Avenue
GIC22	Kowloon City Ferry Pier and bus terminal (planned ventilation shafts and waterfront promenade under KTD)
GIC23	Kwun Tong Public Pier, Kwun Tong Ferry Pier Square and adjacent bus terminal (same planned use under KTD)
GIC25	Hong Kong Society for the Blind Factory (planned CDA in operation stage)
I1	Industrial Buildings in San Po Kong (planned residential use in operation stage)
I2	Industrial buildings along Yuk Yat Street (planned residential use in operation stage)
I4	Industrial Development along Mok Cheong Street (planned CDA in operation stage)
I5	Industrial/Office Developments and Godowns at Cheung Yip Street (planned commercial use under KTD)
O1	Visitors at Olympic Garden
O2	Visitors at Sung Wong Toi Garden
O3	Visitors at Sung Wong Toi Playground
O4	Visitors at Rest Garden next to Nga Tsin Wai Road
O5	Visitors at Shek Ku Lung Road Playground
O6	Visitors at Argyll Street Playground
O7	Visitors at King Wan Street Playground (same planned use under KTD)
O13	Visitors at Hoi Sham Park (same planned use under KTD)
O14	Visitors at Hoi Bun Road Park
O17	Visitors at Tai Wan Shan Park & Tai Wan Shan Swimming Pool
OU1	Tunnel Administration Building (same planned use under KTD)
OU2	Business and Industrial Developments in Kowloon Bay (planned commercial use in operation stage)
OU3	Business and Industrial Developments in San Po Kong (planned commercial use in operation stage)
OU4	Business and Industrial Developments in Hung Hom (planned commercial use in operation stage)
OU5	Business and Industrial Developments in Kwun Tong (planned commercial use in operation stage)
OU6	Hong Kong International Trade and Exhibition Centre (same planned use under KTD)
R1	Sky Tower and adjacent residential developments along Sung Wong Toi Road
R2	Medium-rise Residential Development along Ma Tau Chung Road
R3	Regal Oriental Hotel and Low to Medium-rise Residential Development in Kowloon City
R5	Medium-rise Residential Development in San Po Kong
R6	Rhythm Garden
R7	Choi Hung Estate
R9	Richland Gardens
R12	Residential Development in To Kwa Wan
R14	Laguna Verde and Whampoa Garden
R16	Grand Waterfront (same planned use under KTD)
R17	Wylar Gardens
R18	Low-rise Residential Development adjacent to Grand Waterfront (same planned use under KTD)
R19	R(A) zone at King Fuk Street
R20	R(A) zone to the southeast of Tung Tau Estate
R21	Le Billionaire and adjacent R(A) Zone in Kowloon City
R22	Low-Rise Residential Development along Mok Cheong Street (planned CDA in operation stage)
R23	Harbourfront Landmark
T1	Motorists on Prince Edward Road East
T2	Motorists on carriageway and Pedestrians on Footpaths along Sung Wong Toi Road
T3	Motorists on Kwun Tong Bypass
T4	Travelers of Harbour Traffic



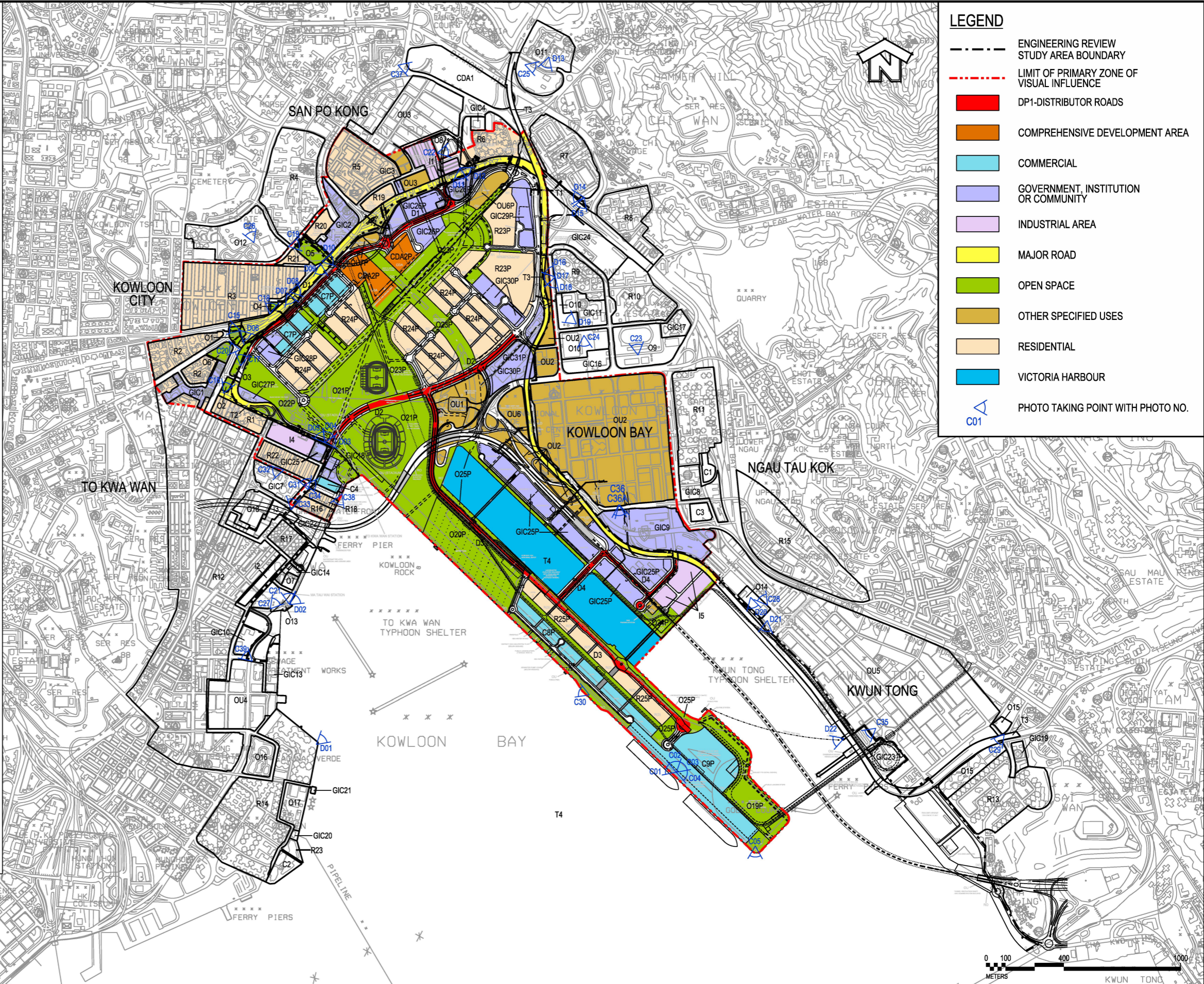
MAUNSELL | AECOM  
Maunsell Consultants Asia Ltd

AGREEMENT NO. CE 35/2006 (CE)  
KAI TAK DEVELOPMENT ENGINEERING STUDY CUM DESIGN AND CONSTRUCTION OF ADVANCE WORKS-INVESTIGATION, DESIGN AND CONSTRUCTION

## BASELINE KEY VSRs AND VIEWPOINTS AT LOCAL LEVEL WITH DP1 - DISTRIBUTOR ROAD OVERLAID DURING CONSTRUCTION

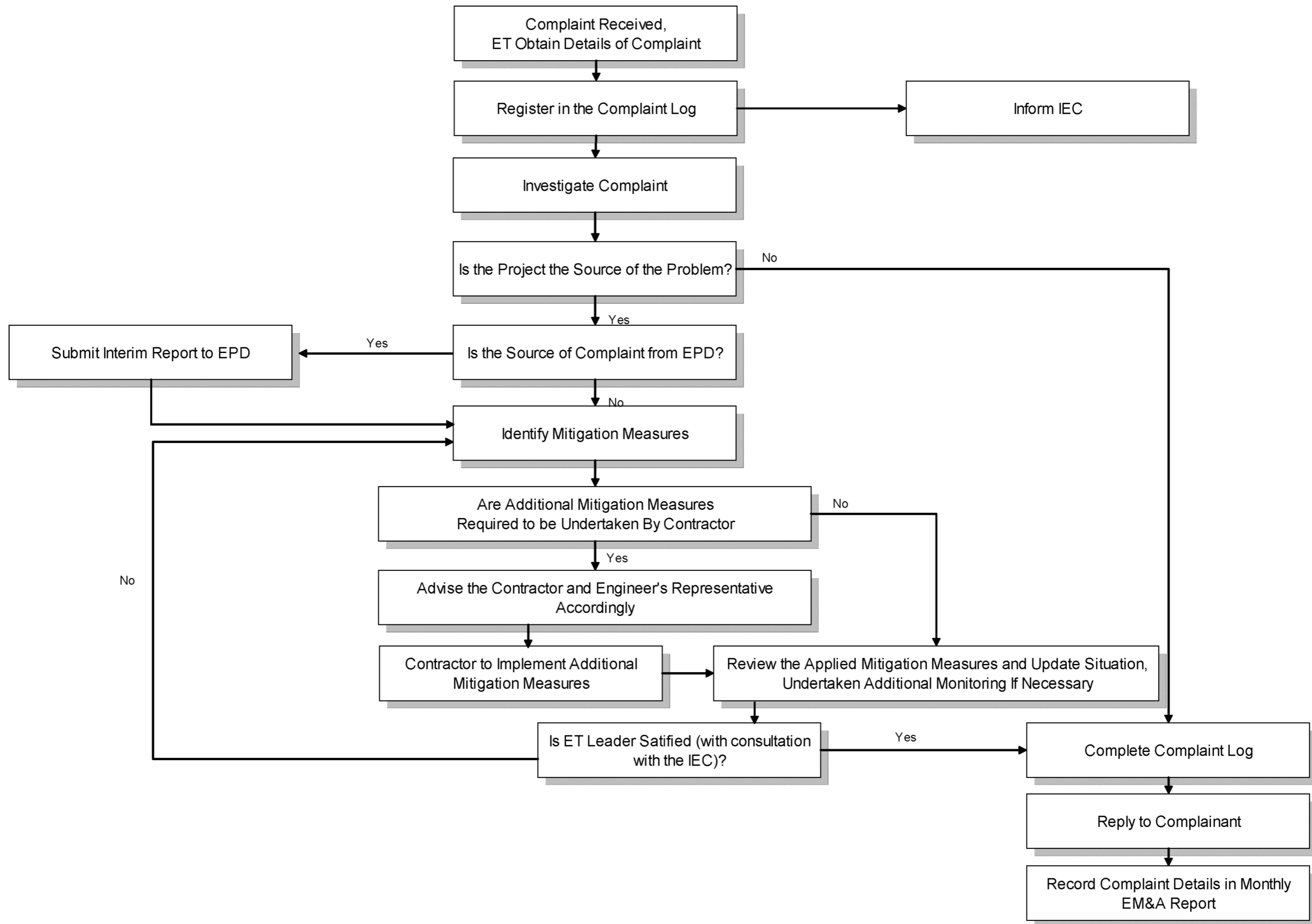
SCALE	A3 1:20000	DATE	MAY 2008
CHECK	JC	DRAWN	FL
JOB NO.	60022408	DRAWING NO.	FIGURE 2.6A
		REV	-

Existing VSR	
C4	Newport Centre (planned residential use under KTD)
GIC1	Evangel Hospital, Christian Alliance P.C. Lau Memorial International School, Notre Dame College, Holy Trinity Primary School, HK Planning Association Centre
GIC3	Cognitio College
GIC2	Ng Wah College, Lee Kau Yan Memorial School, Sir Robert Black Health Centre, Petrol Station
GIC18	EMSD Workshops (planned sewage pumping station and open space under KTD)
GIC25	Hong Kong Society for the Blind Factory (planned CDA in operation stage)
GIC9	Kowloon Bay Vehicle Inspection Centre, Vehicle Examination Centre, Water Supplies Department Kowloon East Regional Building, Kowloon Bay Transfer Station, Kowloon Bay Government Land Transport Agency Transport Pool
I1	Industrial Buildings in San Po Kong (planned residential use in operation stage)
I4	Industrial Development along Mok Cheong Street (planned CDA in operation stage)
I5	Industrial/Office Developments and Godowns at Cheung Yip Street (planned commercial use under KTD)
O1	Visitors at Olympic Garden
O2	Visitors at Sung Wong Toi Garden
O3	Visitors at Sung Wong Toi Playground
O4	Visitors at Rest Garden next to Nga Tsin Wai Road
O5	Visitors at Shek Ku Lung Road Playground
O6	Visitors at Argyle Street Playground
OU1	Tunnel Administration Building (same planned use under KTD)
OU2	Business and Industrial Developments in Kowloon Bay (planned commercial use in operation stage)
OU3	Business and Industrial Developments in San Po Kong (planned commercial use in operation stage)
OU6	Hong Kong International Trade and Exhibition Centre (same planned use under KTD)
R1	Sky Tower and adjacent residential developments along Sung Wong Toi Road
R16	Grand Waterfront (same planned use under KTD)
R18	Low-rise Residential Development adjacent to Grand Waterfront (same planned use under KTD)
R19	R(A) zone at King Fuk Street
R2	Medium-rise Residential Development along Ma Tau Chung Road
R20	R(A) zone to the southeast of Tung Tau Estate
R21	Le Billionaire and adjacent R(A) Zone in Kowloon City
R22	Low-Rise Residential Development along Mok Cheong Street (planned CDA in operation stage)
R3	Regal Oriental Hotel and Low to Medium-rise Residential Development in Kowloon City
R5	Medium-rise Residential Development in San Po Kong
R6	Rhythm Garden
T1	Motorists on Prince Edward Road East
T2	Motorists on carriageway and Pedestrians on Footpaths along Sung Wong Toi Road
T3	Motorists on Kwun Tong Bypass
Planned VSR	
R23P	Planned Residential Developments at Site 1A and 1B
R24P	Planned Residential Developments at Site 1H, II, IJ, IK, IL, and 2A
R25P	Planned Residential Development at Site 4B
C7P	Planned Commercial Developments at Site 2A
C8P	Planned Commercial Developments at Site 4C
C9P	Planned Cruise Terminal and Tourism Related Uses at Site 2 and 3
GIC25P	Planned GIC Developments at Site 3B, 3C
GIC26P	Planned GIC Developments at Site 1C, 1D
GIC27P	Planned GIC Developments at Site 2C
GIC28P	Planned GIC Developments at Site 2A
GIC29P	Planned GIC Developments at Site 1A
GIC30P	Planned GIC Developments at Site 1B
GIC31P	Planned GIC Developments at Site 1N
CDA2P	Planned CDA Developments at Kai Tak City Centre
O19P	Planned Runway Park
O20P	Planned Metro Park
O21P	Planned Multi-purpose Stadium Complex
O22P	Planned Sung Wong Toi Park
O23P	Planned Station Square
O24P	Planned Open Space at Site 3E
O25P	Planned Promenade at Runway Precinct
OU6P	Planned OU Development (Mixed Use) at Site 1E
OU7P	Planned OU Development at Site 1D



LEGEND	
---	ENGINEERING REVIEW STUDY AREA BOUNDARY
---	LIMIT OF PRIMARY ZONE OF VISUAL INFLUENCE
	DP1-DISTRIBUTOR ROADS
	COMPREHENSIVE DEVELOPMENT AREA
	COMMERCIAL
	GOVERNMENT, INSTITUTION OR COMMUNITY
	INDUSTRIAL AREA
	MAJOR ROAD
	OPEN SPACE
	OTHER SPECIFIED USES
	RESIDENTIAL
	VICTORIA HARBOUR
	PHOTO TAKING POINT WITH PHOTO NO.

PLOT FILE BY : 26/11/2008	MAUNSELL   AECOM Maunsell Consultants Asia Ltd	AGREEMENT NO. CE 35/2006 (CE) KAI TAK DEVELOPMENT ENGINEERING STUDY CUM DESIGN AND CONSTRUCTION OF ADVANCE WORKS-INVESTIGATION, DESIGN AND CONSTRUCTION  BASELINE KEY VSRs AND VIEWPOINTS AT LOCAL LEVEL WITH DP1 - DISTRIBUTOR ROAD OVERLAID DURING OPERATION		SCALE	A3 1:20000	DATE	MAY 2008
				CHECK	JC	DRAWN	FL
				JOB NO.	60022408	DRAWING NO.	FIGURE 2.6B
						REV	-



DATE 2008-8-18 13:22:40 XULP

**MAUNSELL | AECOM**  
Maunsell Consultants Asia Ltd

AGREEMENT NO. CE 35/2006 (CE)  
KAI TAK DEVELOPMENT ENGINEERING STUDY CUM DESIGN AND  
CONSTRUCTION OF ADVANCE WORKS-INVESTIGATION, DESIGN AND CONSTRUCTION  
**ENVIRONMENTAL COMPLAINT FLOW DIAGRAM**

SCALE	N.T.S	DATE	JUN 07
CHECK	KYTT	DRAWN	POHM
JOB No.	60022503	DRAWING No.	15.1
		REV	-

## ***Appendix A***

---

AEIAR-170/2013

## APPENDIX A IMPLEMENTATION SCHEDULE OF THE PROPOSED MITIGATION MEASURES

**Table 1 Implementation Schedule for Noise Measures**

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
S3.8	S2.3	<ul style="list-style-type: none"> <li>Provision of a landscaped deck along Roads D3A &amp; D4A.</li> </ul>	To reduce traffic noise impact at nearby NSRs	CEDD	Road D3A & D4A	Before population intake of Sites 4A1, 4B1, 4B2, 4B3, 4B4 & 4B5	EIAO-TM
S3.8	S2.3	<ul style="list-style-type: none"> <li>Provision of about 1090 m length of vertical noise barrier (connected to the deck) at Roads D3A &amp; D4A;</li> <li>Provision of about 60 m length of overhang vertical noise barrier (connected to the deck) at Road D4A; and</li> <li>Provision of staircases with noise barriers next to Sites 4A1 and 4B1</li> </ul> <p>It should be noted that the exact length of the mitigation measures would be subject to minor refinement during the detailed design stage.</p>	To reduce traffic noise impact at nearby NSRs	CEDD	Road D3A & D4A	Before population intake of Sites 4A1, 4B1, 4B2, 4B3, 4B4 & 4B5	EIAO-TM
S3.8	S2.3	Non-noise sensitive use areas within Sites 4A1 and 4B1.	To reduce traffic noise impact at nearby NSRs	LandsD / Future developer	Sites 4A1 and 4B1	Design & Construction Stages	EIAO-TM
S3.8	S2.3	Avoid sensitive façade with openable window facing Road D3A.	To reduce traffic noise impact at nearby NSRs	LandsD / Future developer	Sites 4A2, 4C1 4C2, 4C3, 4C4 & 4C5	Design & Construction Stages	EIAO-TM

**Table 2 Implementation Schedule for Air Quality Measures**

<b>EIA Ref.</b>	<b>EM&amp;A Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measure &amp; Main Concerns to address</b>	<b>Who to implement the measure?</b>	<b>Location of the measure</b>	<b>When to implement the measure?</b>	<b>What requirements or standards for the measure to achieve</b>
S4.8	S3.4	Control measures stipulated in the approved KTD Schedule 3 EIA Report should be strictly followed.	Minimize cumulative dust impact.	Contractor	Work site	Construction Stages	EIAO-TM
S4.8	S3.4	<ul style="list-style-type: none"> <li>Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize dust impacts.</li> <li>Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.</li> <li>Misting for the dusty material should be carried out before being loaded into the vehicle.</li> <li>Any vehicle with an open load carrying area should have properly fitted side and tail boards.</li> <li>Material having the potential to create dust should not be</li> </ul>	Minimize cumulative dust impact.	Contractor	Work site	Construction Stages	EIAO-TM, AQO

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
		<p>loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin.</p> <ul style="list-style-type: none"> <li>• The tarpaulin should be properly secured and should extend at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation.</li> <li>• The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways insider the site. On-site unpaved roads should be compacted and kept free of lose materials.</li> <li>• Vehicle washing facilities should be provided at every vehicle exit point.</li> <li>• The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.</li> <li>• Every main haul road should be scaled with concrete and kept</li> </ul>					

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
		clear of dusty materials or sprayed with water so as to maintain the entire road surface wet. <ul style="list-style-type: none"> <li>• Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides.</li> <li>• Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.</li> </ul>					

**Table 3 Implementation Schedule for Water Quality Measures**

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
S5.8	S4.4	<p><b>Construction Phase</b>  <u>Construction Site Run-off and General Construction Activities</u></p> <p>The site practices outlined in ProPECC PN 1/94 “Construction Site Drainage” should be followed as far as practicable to minimise surface run-off and the chance of erosion. Effluent discharged from the construction site should comply with the standards stipulated in the TM-DSS. The following measures are recommended to protect water quality and sensitive uses of the inland and coastal waters, and when properly implemented should be sufficient to adequately control site discharges so as to avoid water quality impacts</p> <ul style="list-style-type: none"> <li>• Surface run-off from construction sites should be discharged into storm drains via adequately designed sand/silt removal facilities such as sand traps, silt traps and sedimentation basins. Channels or earth bunds or</li> </ul>	To minimise water quality impacts from construction site run-off and general construction activities	Contractor	Work Sites	Construction Stages	EIAO-TM, WPCO, ProPECC PN 1/94, TM-DSS

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
		<p>sand bag barriers should be provided on site to properly direct stormwater to such silt removal facilities. Perimeter channels should be provided on site boundaries where necessary to intercept storm run-off from outside the site so that it will not wash across the site. Catchpits and perimeter channels should be constructed in advance of site formation works and earthworks.</p> <ul style="list-style-type: none"> <li>Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to prevent local flooding. Any practical options for the diversion and re-alignment of drainage should comply with both engineering and environmental requirements in order to provide adequate hydraulic capacity of all drains. Minimum distance of 100 m should be maintained between</li> </ul>					

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
		<p>the discharge points of construction site run-off and the existing saltwater intakes.</p> <ul style="list-style-type: none"> <li>Construction works should be programmed to minimize soil excavation works in rainy seasons (April to September). If excavation in soil cannot be avoided in these months or at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, temporary exposed slope surfaces should be covered e.g. by tarpaulin, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels should be provided (e.g. along the crest / edge of excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements should always be in place in such a way that adequate surface protection measures can be safely carried out well before the arrival of a</li> </ul>					

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
		<p>rainstorm.</p> <ul style="list-style-type: none"> <li>Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.</li> <li>Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.</li> <li>Open stockpiles of construction materials (e.g. aggregates, sand and fill material) on sites should be covered with tarpaulin or</li> </ul>					

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
		<p>similar fabric during rainstorms.</p> <ul style="list-style-type: none"> <li>Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system, and to prevent storm run-off from getting into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.</li> <li>Good site practices should be adopted to remove rubbish and litter from construction sites so as to prevent the rubbish and litter from spreading from the site area. It is recommended to clean the construction sites on a regular basis.</li> </ul>					
S5.8	S4.4	<p><i>Boring and Drilling Water</i></p> <p>Water used in ground boring and</p>	To minimise water quality impacts from construction site run-off	Contractor	Work Sites	Construction Stages	EIAO-TM, WPCO, ProPECC PN 1/94, TM-DSS

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
		drilling for site investigation or rock / soil anchoring should as far as practicable be re-circulated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.	and general construction activities				
S5.8	S4.4	<i>Wheel Washing Water</i>  All vehicles and plant should be cleaned before they leave a construction site to minimize the deposition of earth, mud, debris on roads. A wheel washing bay should be provided at every site exit if practicable and wash-water should have sand and silt settled out or removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road should be paved with backfall to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	To minimise water quality impacts from construction site run-off and general construction activities	Contractor	Work Sites	Construction Stages	EIAO-TM, WPCO, ProPECC PN 1/94, TM-DSS
S5.8	S4.4	<i>Acid Cleaning, Etching and Pickling Wastewater</i>  Acidic wastewater generated from acid cleaning, etching, pickling and	To minimise water quality impacts from construction site run-off and general construction activities	Contractor	Work Sites	Construction Stages	EIAO-TM, WPCO, ProPECC PN 1/94, TM-DSS

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
		similar activities should be neutralized to within the pH range of 6 to 10 before discharging into foul sewers.					
S5.8	S4.4	<p><i>Effluent Discharge</i></p> <p>There is a need to apply to EPD for a discharge licence for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge licence. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. Minimum distance of 100 m should be maintained between the discharge points of construction site effluent and the existing seawater intakes and the planned WSR mentioned in S5.3.1 as appropriate. The beneficial uses of the treated effluent for other on-site activities such as dust suppression, wheel washing and general cleaning etc., can minimise water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the</p>	To minimise water quality impacts from construction site run-off and general construction activities	Contractor	Work Sites	Construction Stages	EIAO-TM, WPCO, ProPECC PN 1/94, TM-DSS

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
		works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the relevant WPCO licence which is under the ambit of regional office (RO) of EPD.					
S5.8	S4.4	<p><u>Accidental Spillage</u></p> <p>Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation, should be observed and complied with for control of chemical wastes.</p> <p>Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control</p>	To minimise water quality impacts from construction site run-off and general construction activities	Contractor	Work Sites	Construction Stages	EIAO-TM, WPCO, WDO

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
		<p>these discharges.</p> <p>Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows:</p> <ul style="list-style-type: none"> <li>• Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport.</li> <li>• Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents.</li> <li>• Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.</li> </ul>					
S5.8	S4.4	<u>Sewage Effluent from Construction Workforce</u>	To minimise water quality impacts from	Contractor	Work Sites	Construction Stages	EIAO-TM, WPCO,

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
		<p>The construction workforce on site will generate sewage. It is recommended to provide sufficient chemical toilets in the works areas. A licensed waste collector should be deployed to clean the chemical toilets on a regular basis.</p> <p>Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the surrounding environment. Regular environmental audit of the construction site will provide an effective control of any malpractices and can encourage continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the project would not cause water pollution problem after undertaking all required measures.</p>	construction site run-off and general construction activities				
S5.8	S4.4	<p><b>Operation Phase</b></p> <p>A surface water drainage system will be provided to collect road runoff. The following measures are recommended to ensure road</p>	To minimise water quality impacts due to road run-off	Design & Construction Phases: CEDD Operation Phase: DSD	Road D3A & D4A	Design, Construction & Operation Stages	EIAO-TM, WPCO

<b>EIA Ref.</b>	<b>EM&amp;A Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measure &amp; Main Concerns to address</b>	<b>Who to implement the measure?</b>	<b>Location of the measure</b>	<b>When to implement the measure?</b>	<b>What requirements or standards for the measure to achieve</b>
		<p>runoff will comply with the standards stipulated in the TM for discharges into storm water drains:</p> <ul style="list-style-type: none"> <li>• The road drainage should be directed through silt traps in the gully inlets to remove silt and grit before entering the public storm water drainage system; and</li> <li>• The silt traps should be regularly cleaned and maintained in good working condition.</li> </ul>					

**Table 4 Implementation Schedule for Waste Management Measures**

<b>EIA Ref.</b>	<b>EM&amp;A Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measure &amp; Main Concerns to address</b>	<b>Who to implement the measure?</b>	<b>Location of the measure</b>	<b>When to implement the measure?</b>	<b>What requirements or standards for the measure to achieve</b>
S6.7	S5.2	<ul style="list-style-type: none"> <li>Prepare a Waste Management Plan, which becomes a part of the Environmental Management Plan, in accordance with the requirements stipulated in ETWB TC(W) No. 19/2005, approved by the Engineer/Supervising Officer of the Project based on current practices on construction sites</li> <li>Training of site personnel in site cleanliness, proper waste management and chemical waste handling procedures</li> <li>Provision of sufficient waste disposal points and regular collection for waste</li> <li>Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers</li> <li>Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors</li> <li>Separation of chemical wastes</li> </ul>	Good Site Practices and Waste Reduction Measures	Contractor	Work Sites	Construction Stages	Waste Disposal Ordinance (Cap. 354).  Waste Disposal (Chemical Waste) (General) Regulation  Land (Miscellaneous Provisions) Ordinance (Cap. 28)  ETWB TC(W) No. 19/2005

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
		for special handling and appropriate treatment					
S6.7	S5.2	<ul style="list-style-type: none"> <li>Sorting of demolition debris and excavated materials from demolition works to recover reusable/recyclable portions</li> <li>Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.</li> <li>Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force.</li> <li>Proper storage and site practices to minimise the potential for damage or contamination of construction materials.</li> <li>Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste.</li> <li>Training should be provided to workers about the concepts of</li> </ul>	Good Site Practices and Waste Reduction Measures	Contractor	Work Sites	Construction Stages	Waste Disposal Ordinance (Cap. 354).  Waste Disposal (Chemical Waste) (General) Regulation  Land (Miscellaneous Provisions) Ordinance (Cap. 28)

<b>EIA Ref.</b>	<b>EM&amp;A Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measure &amp; Main Concerns to address</b>	<b>Who to implement the measure?</b>	<b>Location of the measure</b>	<b>When to implement the measure?</b>	<b>What requirements or standards for the measure to achieve</b>
		site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycle.					

**Table 5 Implementation Schedule for Landscape and Visual Measures**

<b>EIA Ref.</b>	<b>EM&amp;A Ref.</b>	<b>Recommended Mitigation Measures</b>	<b>Objectives of the Recommended Measure &amp; Main Concerns to address</b>	<b>Who to implement the measure?</b>	<b>Location of the measure</b>	<b>When to implement the measure?</b>	<b>What requirements or standards for the measure to achieve</b>
S7.9	S6.5.1	<p>Construction Site Control</p> <p>CM1 - Minimized construction area and contractor's temporary works areas</p> <p>CM2- Control of night-time lighting and glare by hooding all lights</p> <p>CM3 - Erection of decorative mesh screens or construction hoardings around works areas in visually unobtrusive colours.</p> <p>CM4 - Reduction of construction period to practical minimum.</p> <p>CM5 - Limitation of / Ensuring no run-off into surrounding landscape and adjacent seawater areas</p> <p>CM6 - Temporary or advance landscape should be provided along the temporary access roads to the Cruise Terminal until such time as road D3 is open.</p>	Good site practices and to minimize landscape and visual impact	CEDD and its contractors	Work Sites	Construction Stages	EIAO-TM
S7.9	S6.5.1	Design and Construction of the Works, including Hard work and Soft work	To minimize landscape and visual impact	CEDD and its management and	Work Sites	Design Stage and Operation Stage	EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
		<p>OM1 - All above ground structures shall be sensitively designed with regard to the form, material and finishes and shall respond to the existing and planned urban context.</p> <p>OM2 - Streetscape elements shall be sensitively designed in a manner that responds to the existing and planned urban context.</p> <p>OM3 - Attractive soft landscape in areas adjoining any visible structures such as tall buffer screen tree/shrub/ climber planting, vertical greening and roof greening where appropriate should be incorporated so as to provide a visual softening and greening effect and soften hard engineering structures and facilities.</p> <p>OM4 - Structure, ornamental tree/shrub/climber planting should be provided along roadside amenity strips to enhance the townscape quality, where space is available.</p>		maintenance agents			

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Who to implement the measure?	Location of the measure	When to implement the measure?	What requirements or standards for the measure to achieve
		<p>OM5 - Appropriate design of street lighting to avoid glare and light pollution to surrounding areas.</p> <p>OM6 - Avoidance of excessive height and bulk of the associated landscaped deck to the central boulevard</p> <p>OM7 - Elegant engineering design, sensitive architectural and chromatic treatment and generous planting of the associated landscaped deck to the central boulevard. The form, color and surface detailing of these structures should be carefully considered to reduce their apparent height and bulk (visual weight).</p> <p>OM8 - Sensitive design of noise barriers &amp; enclosures with greening (screen planting/climbers/green roofs) and chromatic measures</p> <p>OM9 - Compensatory tree planting for felled trees</p>					

## ***Appendix A1***

---

### ***Implementation Schedule of the Recommended Mitigation Measures for New Distributor Roads Serving the Planned KTD***

**AEIAR-130/2009**

**Table A1.1 Implementation Schedule for Air Quality Measures**

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S3.2	8 times daily watering of the work site with active dust emitting activities.	Work site / during construction	Contractor		✓			EIAO-TM
S3.2	<p>Implementation of dust suppression measures stipulated in Air Pollution Control (Construction Dust) Regulation. The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimize cumulative dust impacts.</p> <p>Stockpiling site(s) should be lined with impermeable sheeting and banded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission.</p> <p>Misting for the dusty material should be carried out before being loaded into the vehicle.</p> <p>Any vehicle with an open load carrying area should have properly fitted side and tail boards.</p> <p>Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin.</p> <p>The tarpaulin should be properly secured and should extend at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation.</p> <p>The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways inside the site. On-site unpaved roads should be compacted and kept free of loose materials.</p> <p>Vehicle washing facilities should be provided at every</p>	Work site / during construction	Contractor		✓			EIAO-TM & Air Quality Objective

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	<p>vehicle exit point.</p> <p>The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores.</p> <p>Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet.</p> <p>Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides; and</p> <p>Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites.</p>							

\* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

**Table A1.2 Implementation Schedule for Noise Measures**

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S3.3	Use of quiet PME, movable barriers barrier for Asphalt Paver, Breaker, Excavator and Hand-held breaker and full enclosure for Air Compressor, Bar Bender, Concrete Pump, Generator and Water Pump.	Work Sites / Construction Period	Contractor		✓			EIAO-TM, NCO
S3.3	Good Site Practice: Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program. Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program. Mobile plant, if any, should be sited as far away from NSRs as possible. Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.	Work Sites / Construction Period	Contractor		✓			EIAO-TM, NCO
S3.3	Scheduling of Construction Works during School Examination Period	Construction site near to school / Examination Period	Contractor		✓			

\* Des - Design, C - Construction, O – Operation, and Dec – Decommissioning

Table A1.3 Implementation Schedule for Water Quality Measures

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S3.4	<p><b>Operational Phase</b></p> <p>A surface water drainage system should be provided to collect road runoff. It is recommended that the road drainage should be provided with adequately designed silt trap and oil interceptors, as necessary. The design of the operational stage mitigation measures for the road works shall take into account the guidelines published in ProPECC PN 5/93 "Drainage Plans subject to Comment by the EPD"</p>	Project site / during design and operational stages	CEDD	✓		✓		EIAO-TM, WPCO, ProPECC PN 5/93
S3.4	<p><b>Construction Phase</b></p> <p><u>Construction Runoff</u></p> <p>Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include:</p> <ul style="list-style-type: none"> <li>use of sediment traps</li> <li>adequate maintenance of drainage systems to prevent flooding and overflow</li> </ul>	Work Sites / during construction	Contractor		✓			EIAO-TM, WPCO, ProPECC PN 1/94

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S3.4	Construction site should be provided with adequately designed perimeter channel and pre-treatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94.	Work Sites / during construction	Contractor		✓			EIAO-TM, WPCO, ProPECC PN 1/94
S3.4	Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.	Work Sites / during construction	Contractor		✓			EIAO-TM, WPCO, ProPECC PN 1/94
S3.4	Sediment tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8 m <sup>3</sup> capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	Work Sites / during construction	Contractor		✓			EIAO-TM, WPCO, ProPECC PN 1/94

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S3.4	Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50 m <sup>3</sup> should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	Work Sites / during construction	Contractor		✓			EIAO-TM, WPCO, ProPECC PN 1/94
S3.4	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers.	Work Sites / during construction	Contractor		✓			EIAO-TM, WPCO, ProPECC PN 1/94
S3.4	Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events.	Work Sites / during construction	Contractor		✓			EIAO-TM, WPCO, ProPECC PN 1/94
S3.4	Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	Work Sites / during construction	Contractor		✓			EIAO-TM, WPCO, ProPECC PN 1/94

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S3.4	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and wash-water should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	Work Sites / during construction	Contractor		✓			EIAO-TM, WPCO, ProPECC PN 1/94
S3.4	<u>Drainage</u> It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There should be no direct discharge of effluent from the site into the sea.	Work Sites / during construction	Contractor		✓			EIAO-TM, WPCO, ProPECC PN 1/94
S3.4	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	Work Sites / during construction	Contractor		✓			EIAO-TM, WPCO, ProPECC PN 1/94

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S3.4	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters of the Victoria Harbour WCZ.	Work Sites / during construction	Contractor		✓			EIAO-TM, WPCO, ProPECC PN 1/94, WDO
S3.4	<u>Sewage Effluent</u> Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets should be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor should also be responsible for waste disposal and maintenance practices.	Work Sites / during construction	Contractor		✓			EIAO-TM, WPCO
S3.4	<u>Stormwater Discharges</u> Minimum distances of 100 m should be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes	Work Sites / during construction	Contractor		✓			EIAO-TM, WPCO, TM-DSS
S3.4	<u>Debris and Litter</u> In order to maintain water quality in acceptable conditions with regard to aesthetic quality, contractors should be required, under conditions of contract, to ensure that site management is optimised and that disposal of any solid materials, litter or wastes to marine waters does not occur	Work Sites / during construction	Contractor		✓			EIAO-TM, WPCO, WDO

\* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

**Table A1.4 Implementation Schedule for Waste Management Measures**

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S3.5	<p><b>Good Site Practices</b></p> <p>It is not anticipated that adverse waste management related impacts would arise, provided that good site practices are adhered to. Recommendations for good site practices during construction activities include:</p> <p>Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site</p> <p>Training of site personnel in proper waste management and chemical waste handling procedures</p> <p>Provision of sufficient waste disposal points and regular collection for disposal</p> <p>Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers</p> <p>A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites)</p>	Work Sites / during construction	Contractor					EIAO-TM, WDO

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S3.5	<p>Waste Reduction Measures</p> <p>Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:</p> <p>Sort C&amp;D waste from demolition of the remaining structures to recover recyclable portions such as metals</p> <p>Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal</p> <p>Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force</p> <p>Any unused chemicals or those with remaining functional capacity should be recycled</p> <p>Proper storage and site practices to minimise the potential for damage or contamination of construction materials</p>	Work Sites / during construction	Contractor					EIAO-TM, WDO

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	<p>Construction and Demolition Materials</p> <p>Mitigation measures and good site practices should be incorporated in the contract document to control potential environmental impact from handling and transportation of C&amp;D material. The mitigation measures include:</p> <p>Where it is unavoidable to have transient stockpiles of C&amp;D material within the Project work site pending collection for disposal, the transient stockpiles shall be located away from waterfront or storm drains as far as possible.</p> <p>Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric.</p> <p>Skip hoist for material transport should be totally enclosed by impervious sheeting.</p> <p>Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site.</p> <p>The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcore.</p> <p>The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle.</p> <p>All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet.</p>	Work sites / during construction	Contractor and Independent Environmental Checker					ETWB TCW No. 33/2002, 31/2004, 19/2005

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
	<p>The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading.</p> <p>When delivering inert C&amp;D material to public fill reception facilities, the material should consist entirely of inert construction waste and of size less than 250mm or other sizes as agreed with the Secretary of the Public Fill Committee. In order to monitor the disposal of the surplus C&amp;D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system as stipulated in the ETWB TCW No. 31/2004 "Trip Ticket System for Disposal of Construction and Demolition Materials" should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work. An Independent Environmental Checker should be responsible for auditing the results of the system.</p>	Work sites / during construction	Contractor and Independent Environmental Checker					ETWB TCW No. 33/2002, 31/2004, 19/2005
S3.5	<p>Chemical Waste</p> <p>After use, chemical wastes (for example, cleaning fluids, solvents, lubrication oil and fuel) should be handled according to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Spent chemicals should be collected by a licensed collector for disposal at the CWTf or other licensed facility, in accordance with the <i>Waste Disposal (Chemical Waste) (General) Regulation</i></p>	Work Sites / during construction	Contractor					<p>Waste Disposal (Chemical Waste) (General) Regulation</p> <p>Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes</p>

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S3.5	<p>General Refuse</p> <p>General refuse should be stored in enclosed bins or compaction units separate from C&amp;D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&amp;D material. Effective collection and storage methods (including enclosed and covered area) of site wastes would be required to prevent waste materials from being blown around by wind, wastewater discharge by flushing or leaching into the marine environment, or creating odour nuisance or pest and vermin problem</p>	Work Sites / during construction	Contractor					<p>Waste Disposal Ordinance</p> <p>Water Pollution Control Ordinance</p>

\* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

**Table A1.5 Implementation Schedule for Land Contamination Measures**

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S3.6.57	For any excavation works conducted at Radar Station and ex-GFS building,  As the risk due to dermal contact with groundwater by site workers is uncertain, it is recommended that personnel protective equipment (PPE) be used by site workers as a mitigation measure.	Radar Station and ex-GFS building	Contractor					
S3.6.58	For EMSD Kowloon Bay Vehicle Maintenance Workshop  EMSD as the current occupant should conduct a land contamination assessment and complete the necessary remediation according to the relevant guidelines prior to future handing over the site to the Government for construction of the proposed Road D4.	EMSD Kowloon Bay Vehicle Maintenance Workshop / Prior to construction of Road D4	EMSD					<ul style="list-style-type: none"> <li>“Guidance Note for Contaminated Land Assessment and Remediation”</li> <li>“Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management”</li> <li>“Guidance Notes for Investigation and Remediation of</li> </ul>

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
								Contaminated Sites of Petrol Filling Stations, Boatyards and Car Repair /Dismantling Workshop“ .

\* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

**Table A1.6 Implementation Schedule for Landscape and Visual Impacts**

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines
				Des	C	O	Dec	
S3.8.12	<p>Construction Phase</p> <p>All existing trees should be carefully protected during construction.</p> <p>Trees unavoidably affected by the works should be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees should be agreed prior to commencement of the work.</p> <p>Control of night-time lighting.</p> <p>Erection of decorative screen hoarding.</p>	Works area / During Construction Phase	Contractor	✓	✓			EIAO-TM
S3.8.13	<p>Operation Phase</p> <p>Compensatory tree planting should be incorporated into the proposed projects where trees are affected.</p> <p>Tall buffer screen tree / shrub / climber planting should be incorporated to soften hard engineering structures and facilities.</p> <p>Sensitive streetscape design should be incorporated along all new roads to reflect the new urban development in Kai Tak.</p> <p>Structure, ornamental tree / shrub / climber planting should be provided along roadside amenity strips and central dividers to enhance the townscape quality, where space is available.</p> <p>Aesthetically pleasing design as regard to the form, material and finishes should be incorporated to all buildings, engineering structures and associated infrastructure facilities.</p>	Project area / During Design stage and Operation Phase	CEDD	✓		✓		EIAO-TM

\* Des - Design, C - Construction, O - Operation, and Dec - Decommissioning

***Appendix B***  
***Data Record Sheet***

---

## APPENDIX B1 Data Record Sheet for TSP Monitoring

Monitoring Location		
Details of Location		
Sampler Identification		
Date & Time of Sampling		
Elapsed-time	Start (min.)	
Meter Reading	Stop (min.)	
Total Sampling Time (min.)		
Weather Conditions		Sunny / Fine / Cloudy / Rainy
Site Conditions		
Initial Flow Rate, Qsi	Pi (mmHg)	
	Ti ( C)	
	Hi (in.)	
	Qsi (Std. m <sup>3</sup> )	
Final Flow Rate, Qsf	Pf (mmHg)	
	Tf ( C)	
	Hf (in.)	
	Qsf (Std. m <sup>3</sup> )	
Average Flow Rate (Std. m <sup>3</sup> )		
Total Volume (Std. m <sup>3</sup> )		
Filter Paper Identification No.		
Initial Wt. of Filter Paper (g)		
Final Wt. of Filter Paper (g)		
Measured TSP Level ( g/m <sup>3</sup> )		
Other Dust Emission Source(s) Observed		
Remarks /Other Observations		

	<u>Name &amp; Designation</u>	<u>Signature</u>	<u>Date</u>
Field Operator:	_____	_____	_____
Laboratory Staff:	_____	_____	_____
Checked by:	_____	_____	_____

**APPENDIX B2 Construction Noise Monitoring Field Record Sheet**

Monitoring Location		
Description of Location		
Date of Monitoring		
Measurement Start Time (hh:mm)		
Measurement Time Length (min.)		
Noise Meter Model/Identification		
Calibrator Model/Identification		
Measurement Results	L <sub>90</sub> (dB(A))	
	L <sub>10</sub> (dB(A))	
	L <sub>eq</sub> (dB(A))	
Major Construction Noise Source(s) During Monitoring		
Other Noise Source(s) During Monitoring		
Remarks / Other Observations		

	<u>Name &amp; Designation</u>	<u>Signature</u>	<u>Date</u>
Recorded by:	_____	_____	_____
Checked by:	_____	_____	_____

## APPENDIX B3 Water Quality Monitoring Data Record Sheet

Monitoring Station	
Date	
Weather Condition	<b>Sunny / Fine / Cloudy / Rainy</b>
Sea Condition	<b>Calm / Moderate / Rough</b>
Tide Mode	<b>High Tide / Low Tide</b>
Start Time (hh:mm)	
Water Depth which sample is collected (m)	
pH	
Temperature (°C)	
Salinity (ppt)	
Turbidity (NTU)	
Sample Identification	
DO (mg/l)	
DO Saturation (%)	
Remarks / Other Observations	

	<u>Name &amp; Designation</u>	<u>Signature</u>	<u>Date</u>
Recorded by:	_____	_____	_____
Checked by:	_____	_____	_____
Laboratory Staff:	_____	_____	_____

### Notes:

- 1 The *E.coli* results are to be entered once they are available from the laboratory.
- 2 *In-situ* measurements shall be deployed at the designated location twice. The difference between the two consecutive measurements shall be within the range of 25%. If the difference is larger than 25%, the measurement shall be carried out again until the two consecutive readings agree to within 25%.

## APPENDIX B4 Odour Patrol Record Sheet

General Information	
Monitoring Station	
Date	
Weather	
Temperature	
Humidity	

ID	Location	Time	Odour Intensity		Odour Characteristics	Wind Direction	Wind Speed	Remarks
			OI-1	OI-2				

Note:

Odour intensity is to be divided into 5 levels which are ranked in the descending order as follows:

- 0 - Not detected. No odour perceived or an odour so weak that it can not be easily characterised or described;
- 1 - Slight Identifiable odour, and slight chance to have odour nuisance;
- 2 - Moderate Identifiable odour, and moderate chance to have odour nuisance;
- 3 - Strong Identifiable, likely to have odour nuisance;
- 4 - Extreme Severe odour, and unacceptable odour level.

**OI-1 & OI-2: Odour intensity detected by panel member 1 & 2**

Name & Designation

Signature

Date

Recorded by:

Checked by:

## ***Appendix C***

---

### ***Sample Template for the Interim Notification***

## Appendix C Sample Template for the Interim Notification

### Incident Report on Action Level or Limit Level Non-compliance

Project	
Date	
Time	
Monitoring Location	
Parameter	
Action & Limit Levels	
Measured Level	
Possible reason for Action or Limit Level Non-compliance	
Actions taken / to be taken	
Remarks	

Prepared by: \_\_\_\_\_

Designation: \_\_\_\_\_

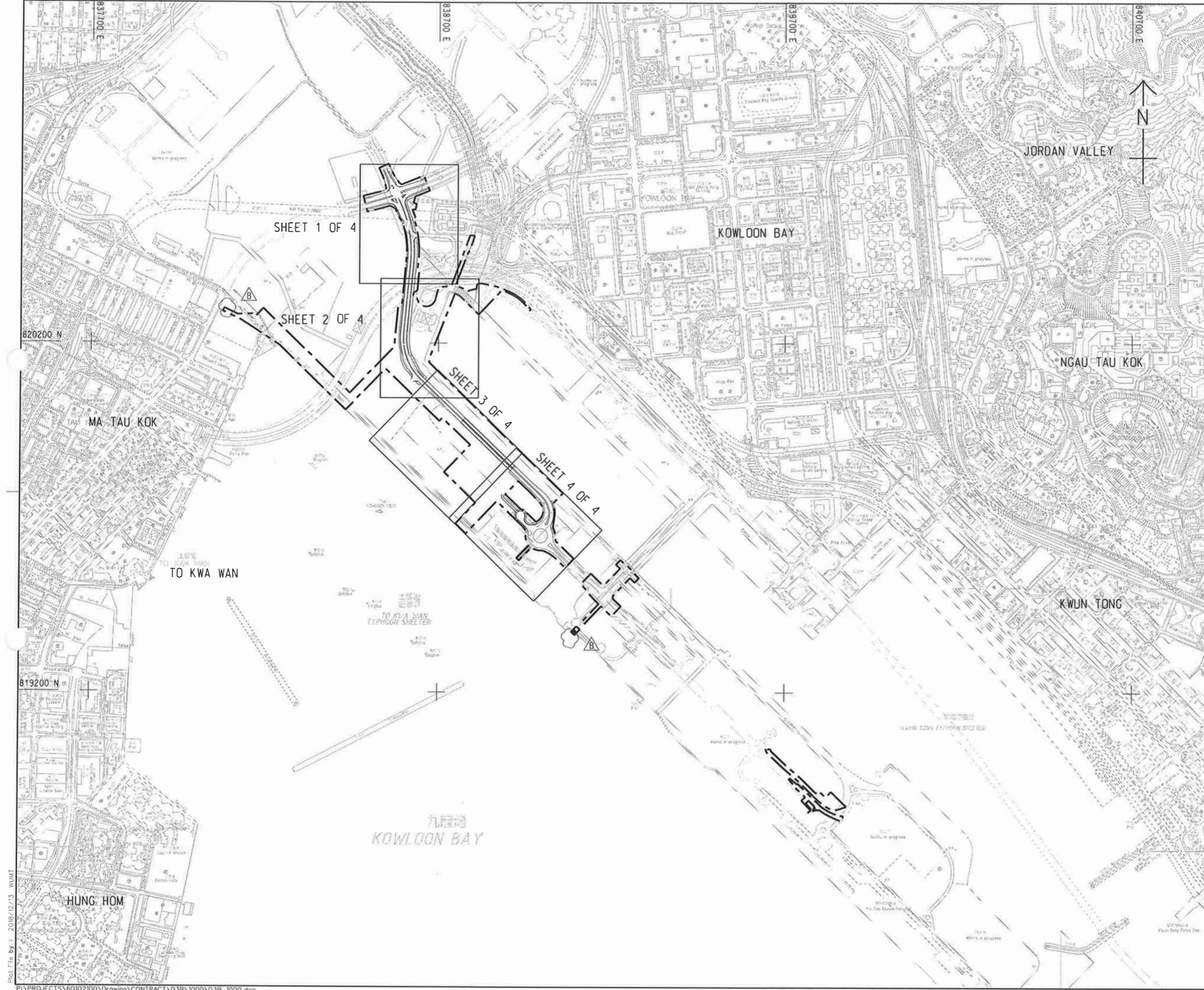
Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## ***Appendix D***

---

### ***Key Location Plan of ED/2018/01***



**LEGEND:**

--- SITE BOUNDARY

**Revision Table:**

REV.	DESCRIPTION	DATE	BY	CHECKED
B	TENDER ADDENDUM NO. 4	DEC. 18	CE	
A	TENDER ADDENDUM NO. 1	DEC. 18	CE	
-	TENDER DRAWING	SEP. 18	CE	

**CE** Civil Engineering and Development Department

**KAI TAK DEVELOPMENT**

KAI TAK DEVELOPMENT - STAGE 4 INFRASTRUCTURE AT THE FORMER RUNWAY AND SOUTH APRON

**KEY PLAN & LOCATION PLAN**

**AECOM**

DRGNO. 60102100/D3B/1000R

DESIGNED BY: WMT

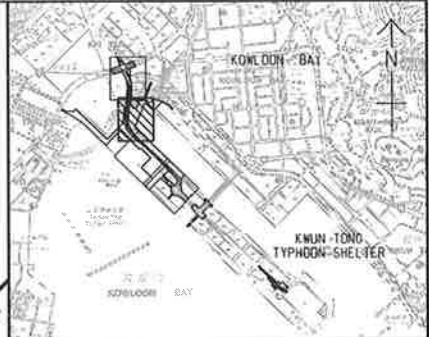
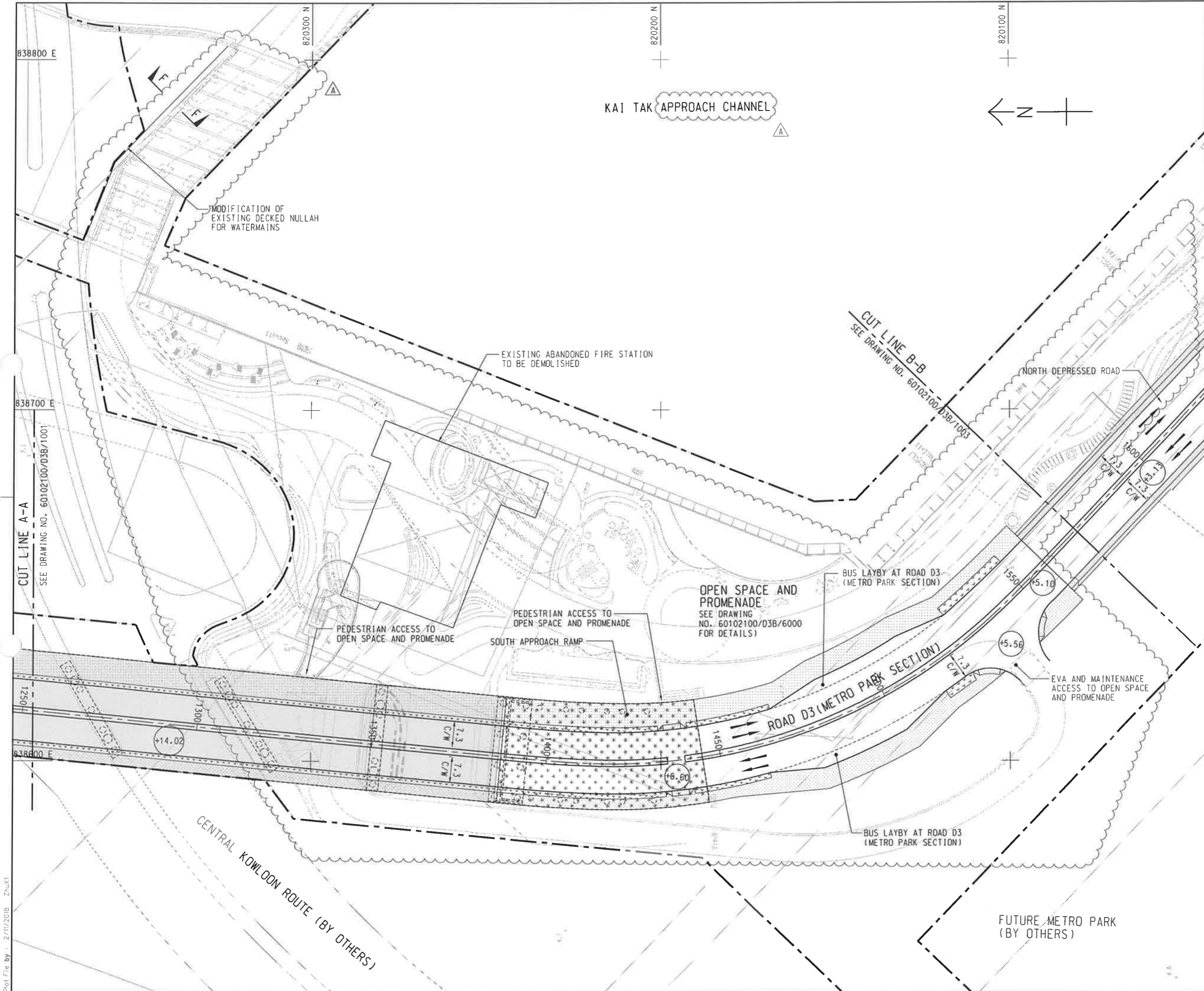
STATUS: 100%

SCALE: 1:1000

UNIT: METRES

© COPYRIGHT RESERVED





**KEY PLAN**  
 SCALE A1 1 : 30000  
 A3 1 : 60000

**NOTE:**  
 1. FOR NOTES AND LEGEND REFER TO DRAWING NO. 60102100/D3B/1001.

A	TENDER ADDENDUM NO. 1	CCTC VAY	OCT. 18
-	TENDER DRAWING	CCTC VAY	SEP. 18
REV.	DESCRIPTION	DATE	

**CEDD** 土木工程拓展署  
 Civil Engineering and Development Department

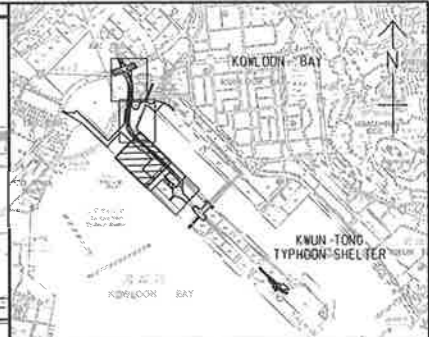
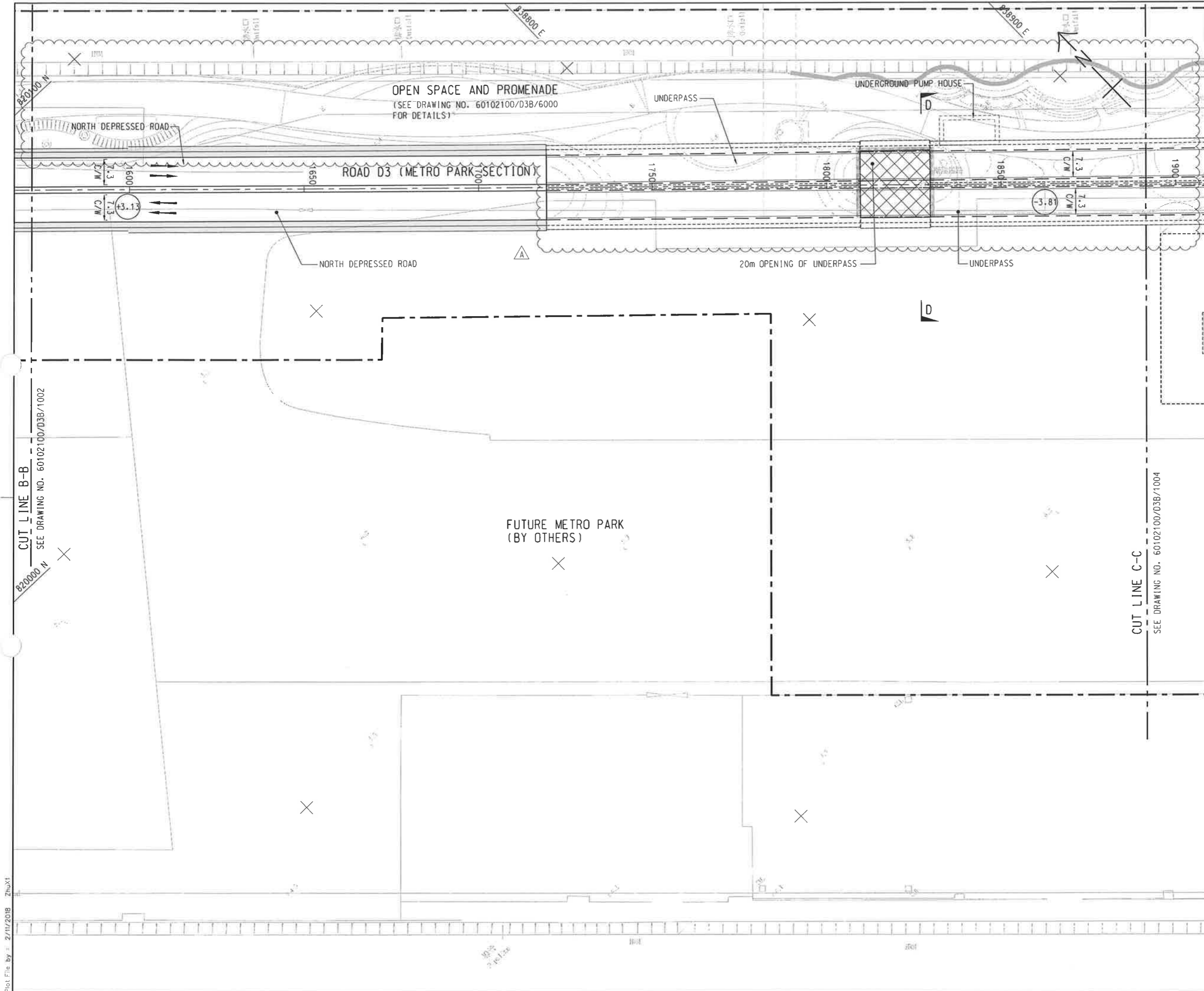
**KAI TAK DEVELOPMENT**  
 KAI TAK DEVELOPMENT - STAGE 4 INFRASTRUCTURE AT THE FORMER RUNWAY AND SOUTH APRON

**GENERAL LAYOUT**  
 SHEET 2 OF 4

**AECOM**

DRG. NO. 圖紙編號	60102100/D3B/1002A
DESIGNED BY 設計人	CONTRACT NO. 合約編號
DRAWN BY 繪圖人	STATUS 階段
SCALE 比例	ED/2018/01
DIMENSIONS ARE IN 尺寸單位	APPROVED BY 核准人
METRES	1 W/LH

© COPYRIGHT RESERVED  
 版權所有



KEY PLAN  
SCALE A1 1 : 30000  
A3 1 : 60000

NOTE:  
1. FOR NOTES AND LEGEND REFER TO DRAWING NO. 60102100/D3B/1001.

A	TENDER ADDENDUM NO. 1	CCTC VAY	OCT. 18
-	TENDER DRAWING	CCTC VAY	SEP. 18
REV.	DESCRIPTION	DATE	DATE

CEDD 土木工程拓展署  
Civil Engineering and  
Development Department

KAI TAK DEVELOPMENT

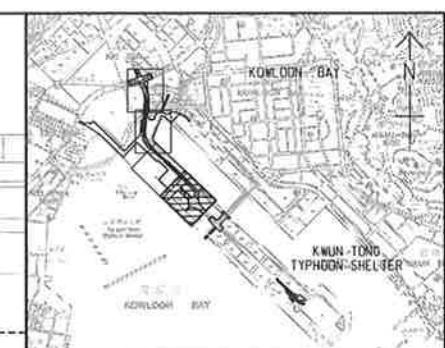
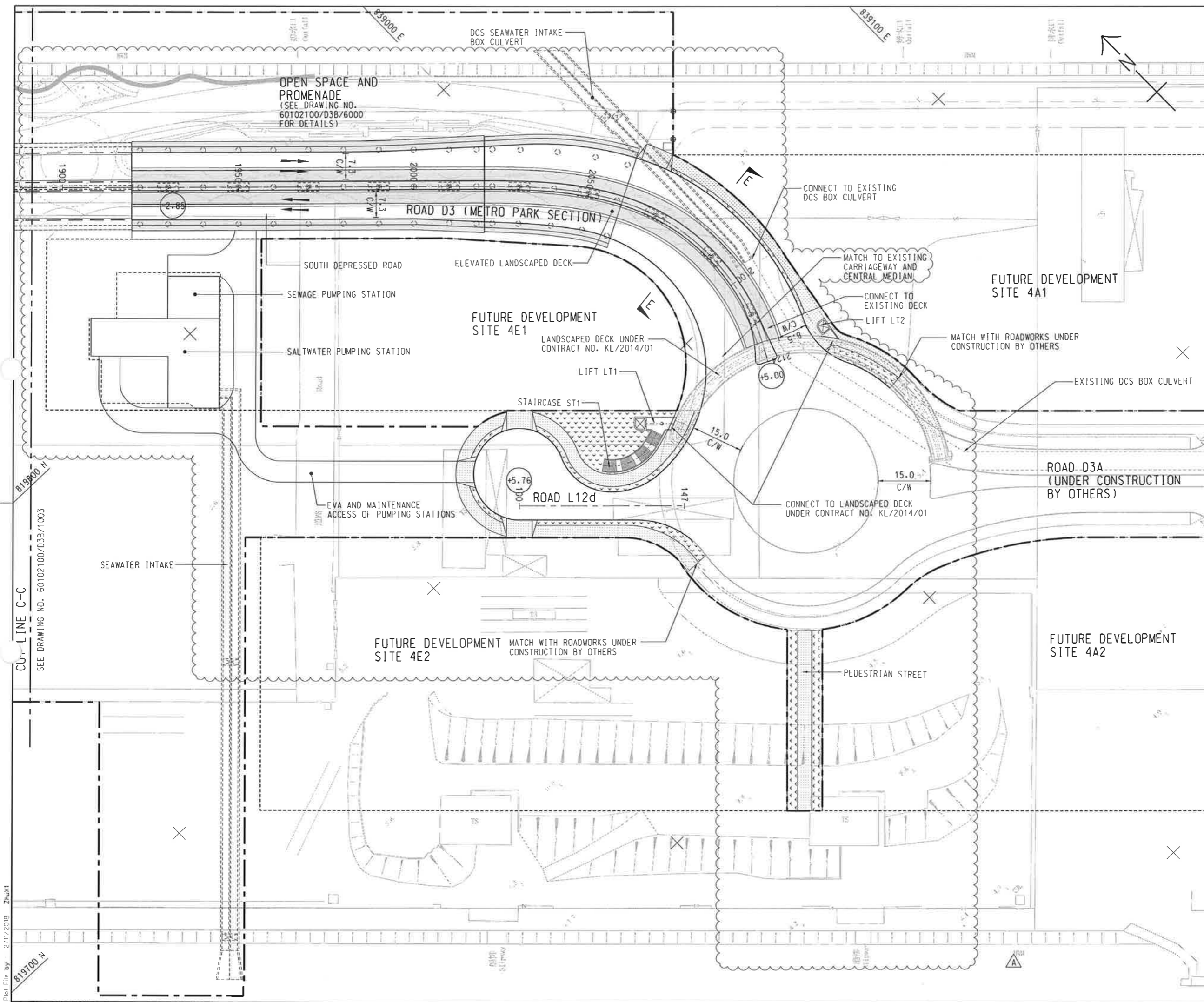
KAI TAK DEVELOPMENT -  
STAGE 4 INFRASTRUCTURE AT  
THE FORMER RUNWAY AND SOUTH APRON

GENERAL LAYOUT  
SHEET 3 OF 4

AECOM

DRGNO. 圖紙編號	60102100/D3B/1003A
DESIGNED BY 設計	CONTRACT NO. 合約編號
DRAWN BY 繪圖	STATUS 階段
SCALE 比例	DATE 日期
DIMENSIONS ARE IN 尺寸單位	METRES

Plot File by 2/11/2018 ZhuX1



KEY PLAN  
SCALE A1 1 : 30000  
A3 1 : 60000

NOTE:  
1. FOR NOTES AND LEGEND REFER TO DRAWING NO. 60102100/D3B/1001.

A	TENDER ADDENDUM NO. 1	CCTC VAY	OCT. 18
-	TENDER DRAWING	CCTC VAY	SEP. 18
REV.	DESCRIPTION	DATE	DATE
01	ISSUED FOR TENDER	18/09/18	18/09/18

CEDD 土木工程拓展署  
Civil Engineering and Development Department

KAI TAK DEVELOPMENT

KAI TAK DEVELOPMENT -  
STAGE 4 INFRASTRUCTURE AT  
THE FORMER RUNWAY AND SOUTH APRON

GENERAL LAYOUT

SHEET 4 OF 4

AECOM

DRG. NO. 圖紙編號	60102100/D3B/1004A
DESIGNED BY 設計	CONTRACT NO. 合約編號
DRAWN BY 繪圖	STATUS 階段
SCALE 比例	DATE 日期
DIMENSIONS ARE IN 尺寸單位	METRES

© COPYRIGHT RESERVED  
版權所有

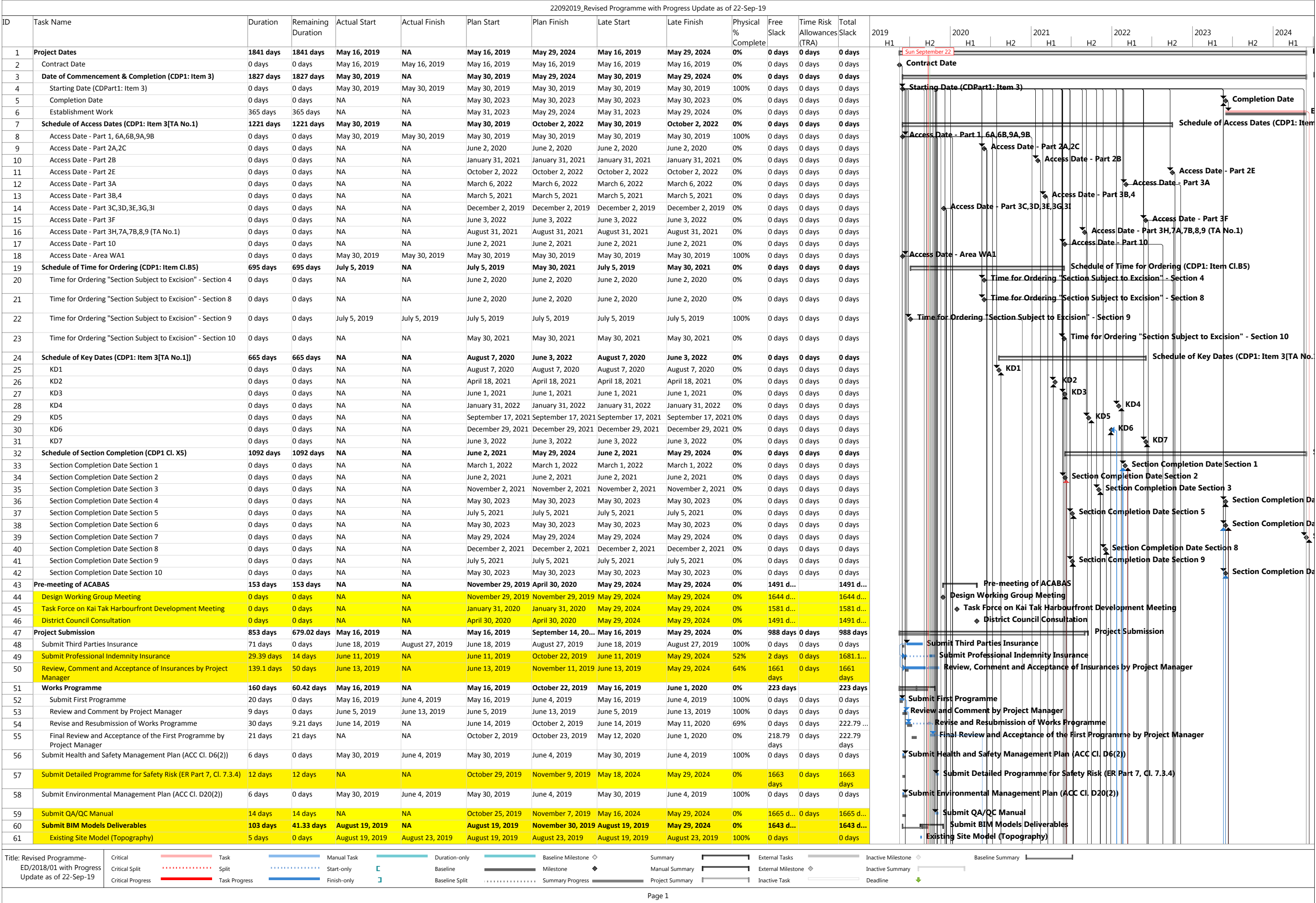
Plot File by : 2/11/2018 ZhuX1

p:\projects\60102100\drawing\contract\3b\1000\D3B\_1004.dgn

## ***Appendix E***

---

***Accepted Programme of ED/2018/01***



22092019_Revised Programme with Progress Update as of 22-Sep-19																										
ID	Task Name	Duration	Remaining Duration	Actual Start	Actual Finish	Plan Start	Plan Finish	Late Start	Late Finish	Physical % Complete	Free Slack	Time Risk Allowances (TRA)	Total Slack	2019	2020	2021	2022	2023	2024							
														H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1		
62	Existing Underground Utilities (UU) Model	5 days	0 days	August 26, 2019	August 30, 2019	August 26, 2019	August 30, 2019	August 26, 2019	August 30, 2019	100%	0 days		0 days		Sun September 22											
63	3D Digital Survey For Existing Conditions	28 days	4.8 days	September 2, 2019	NA	September 2, 2019	September 30, 2019	September 2, 2019	May 29, 2024	83%	1703 d...		1703 d...													
64	3D Photogrammetry Model	46 days	40.02 days	September 16, 2019	NA	September 16, 2019	November 2, 2019	September 16, 2019	May 29, 2024	13%	1670.9...		1670.9...													
65	AIP Model	18 days	1.08 days	September 6, 2019	NA	September 6, 2019	September 24, 2019	September 6, 2019	May 29, 2024	94%	1709.9...		1709.9...													
66	Interfacing Contract Model	15 days	1.05 days	September 9, 2019	NA	September 9, 2019	September 24, 2019	September 9, 2019	May 29, 2024	93%	1709.9...		1709.9...													
67	Monthly Updated BIM Model	0 days	0 days	NA	NA	October 31, 2019	October 31, 2019	October 31, 2019	October 31, 2019	0%	0 days		0 days													
68	4D Model Linked Up with Programme	0 days	0 days	NA	NA	October 31, 2019	October 31, 2019	October 31, 2019	October 31, 2019	0%	0 days		0 days													
69	Construction Method Simulation (CMS) in 3D Model	0 days	0 days	NA	NA	November 30, 2019	November 30, 2019	November 30, 2019	November 30, 2019	0%	0 days		0 days													
70	BIM Deliverables Schedule	77 days	77 days	August 16, 2019	NA	August 16, 2019	October 31, 2019	August 16, 2019	October 31, 2019	0%	0 days		0 days													
71	Establish BIM Team	0 days	0 days	August 16, 2019	August 16, 2019	August 16, 2019	August 16, 2019	August 16, 2019	August 16, 2019	100%	0 days		0 days													
72	BIM Execution Plan	0 days	0 days	August 16, 2019	August 16, 2019	August 16, 2019	August 16, 2019	August 16, 2019	August 16, 2019	100%	0 days		0 days													
73	BIM Submission Schedule	0 days	0 days	August 16, 2019	August 16, 2019	August 16, 2019	August 16, 2019	August 16, 2019	August 16, 2019	100%	0 days		0 days													
74	BIM 360 License	0 days	0 days	August 31, 2019	August 31, 2019	August 31, 2019	August 31, 2019	August 31, 2019	August 31, 2019	100%	0 days		0 days													
75	BIM/Drawing Management Software System	0 days	0 days	August 31, 2019	August 31, 2019	August 31, 2019	August 31, 2019	August 31, 2019	August 31, 2019	100%	0 days		0 days													
76	CDE Setup	0 days	0 days	September 9, 2019	September 9, 2019	September 9, 2019	September 9, 2019	September 9, 2019	September 9, 2019	100%	0 days		0 days													
77	Clash Report Format	0 days	0 days	September 9, 2019	September 9, 2019	September 9, 2019	September 9, 2019	September 9, 2019	September 9, 2019	100%	0 days		0 days													
78	Monthly Report Format	0 days	0 days	September 9, 2019	September 9, 2019	September 9, 2019	September 9, 2019	September 9, 2019	September 9, 2019	100%	0 days		0 days													
79	Quality Assurance Plan for BIM	0 days	0 days	September 30, 2019	September 30, 2019	September 30, 2019	September 30, 2019	September 30, 2019	September 30, 2019	100%	0 days		0 days													
80	BIM Training Plan	0 days	0 days	September 30, 2019	September 30, 2019	September 30, 2019	September 30, 2019	September 30, 2019	September 30, 2019	100%	0 days		0 days													
81	BIM Training Schedule for CIC Training	0 days	0 days	September 30, 2019	September 30, 2019	September 30, 2019	September 30, 2019	September 30, 2019	September 30, 2019	100%	0 days		0 days													
82	4 Sets of BIM Software, Hardware and Server	0 days	0 days	NA	NA	October 31, 2019	October 31, 2019	October 31, 2019	October 31, 2019	0%	0 days		0 days													
83	Monthly BIM Progress Report	0 days	0 days	NA	NA	October 31, 2019	October 31, 2019	October 31, 2019	October 31, 2019	0%	0 days		0 days													
84	Monthly Clash Report	0 days	0 days	NA	NA	October 31, 2019	October 31, 2019	October 31, 2019	October 31, 2019	0%	0 days		0 days													
85	BIM Object Libraries	0 days	0 days	NA	NA	October 31, 2019	October 31, 2019	October 31, 2019	October 31, 2019	0%	0 days		0 days													
86	Temporary Traffic Management	839 days	682.35 days	May 30, 2019	NA	May 30, 2019	September 14, 20...	May 30, 2019	May 29, 2024	0%	988 days		988 days													
87	Submit Traffic Engineering Consultant and TTM Team Leader (PS1.16(3))	14 days	0 days	May 30, 2019	June 12, 2019	May 30, 2019	June 12, 2019	May 30, 2019	June 12, 2019	100%	0 days	0 days	0 days													
88	Submit Road Closure Implementation Plan (PS1.14A(2)) within 14d after acceptance of Works Programme	14 days	14 days	NA	NA	November 1, 2019	November 14, 2019	May 16, 2024	May 29, 2024	0%	1658 days	0 days	1658 days													
89	Submit EP Mgt System Co-ordinator (PS Cl. 1.18N(2))	7 days	0 days	May 30, 2019	June 5, 2019	May 30, 2019	June 5, 2019	May 30, 2019	June 5, 2019	100%	0 days	0 days	0 days													
90	Approve of EP Co-ordinator by Project Manager (PS Cl. 1.18N(2))	14 days	0 days	June 6, 2019	June 19, 2019	June 6, 2019	June 19, 2019	June 6, 2019	June 19, 2019	100%	0 days	0 days	0 days													
91	Submit UU detection equipment for Supervisor approval (PS Cl. 1.25A(1))	7 days	0 days	May 30, 2019	June 5, 2019	May 30, 2019	June 5, 2019	May 30, 2019	June 5, 2019	100%	0 days	0 days	0 days													
92	Submit & obtain approval: site office's location and layout plan (PS Cl. 1.45(11)) (7d submission + 14d approval)	31 days	10 days	May 30, 2019	NA	May 30, 2019	October 2, 2019	May 30, 2019	May 29, 2024	100%	1701 days	0 days	1701 days													
93	Submit Site survey record (PS Cl.1.47(7))	34 days	0 days	May 30, 2019	July 2, 2019	May 30, 2019	July 2, 2019	May 30, 2019	July 2, 2019	100%	0 days	0 days	0 days													
94	Submit & obtain approval: fencing & hoarding plan (PS Cl. 1.48(10))	5 days	5 days	NA	NA	October 2, 2019	October 6, 2019	November 4, 2019	November 8, 2019	0%	1 day	0.5 days	33 days													
95	Submit site facilities (PS Cl. 1.50S)	65 days	0 days	May 30, 2019	August 2, 2019	May 30, 2019	August 2, 2019	May 30, 2019	August 2, 2019	100%	0 days	0 days	0 days													
96	Submit security system (PS Cl. 1.53A(5))	36 days	0 days	May 30, 2019	July 4, 2019	May 30, 2019	July 4, 2019	May 30, 2019	July 4, 2019	100%	0 days	0 days</														

22092019_Revised Programme with Progress Update as of 22-Sep-19																								
ID	Task Name	Duration	Remaining Duration	Actual Start	Actual Finish	Plan Start	Plan Finish	Late Start	Late Finish	Physical % Complete	Free Slack	Time Risk Allowances (TRA)	Total Slack	2019		2020		2021		2022		2023		2024
														H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1
120	VCAB (Draft)	45 days	0 days	September 4, 2019	October 18, 2019	September 4, 2019	October 18, 2019	September 4, 2019	October 18, 2019	100%	0 days	2 days	0 days											
121	Address Committee's comments	15 days	15 days	NA	NA	October 19, 2019	November 2, 2019	October 22, 2019	November 5, 2019	0%	0 days	2 days	3 days											
122	VCAB (Final)	15 days	15 days	NA	NA	November 3, 2019	November 17, 2019	November 6, 2019	November 20, 2019	0%	0 days	2 days	3 days											
123	Durability Assessment Report (Draft)	60 days	0 days	May 30, 2019	July 28, 2019	May 30, 2019	July 28, 2019	May 30, 2019	July 28, 2019	0%	0 days	3 days	0 days											
124	Address Comments	30 days	0 days	July 29, 2019	August 27, 2019	July 29, 2019	August 27, 2019	July 29, 2019	August 27, 2019	0%	0 days	2 days	0 days											
125	Durability Assessment Report (Final)	30 days	4 days	August 28, 2019	NA	August 28, 2019	September 26, 2019	August 28, 2019	November 20, 2019	0%	52 days	2 days	55 days											
126	Landscape Mitigation Plan	20 days	20 days	NA	NA	November 18, 2019	December 7, 2019	November 21, 2019	December 10, 2019	0%	3 days	3 days	3 days											
127	Site Investigation	209 days	116.69 days	June 1, 2019	NA	June 1, 2019	December 26, 2019	June 1, 2019	January 10, 2020	0%	15 days		15 days											
128	Ground Investigation Proposal (Draft)	56 days	0 days	June 1, 2019	July 26, 2019	June 1, 2019	July 26, 2019	June 1, 2019	July 26, 2019	100%	0 days	1 days	0 days											
129	Submit & endorse by Gov. Depts and PM	6 days	0 days	July 27, 2019	August 1, 2019	July 27, 2019	August 1, 2019	July 27, 2019	August 1, 2019	100%	0 days	1 days	0 days											
130	Ground Investigation Proposal (Final)	25 days	25 days	August 2, 2019	NA	August 2, 2019	October 17, 2019	August 2, 2019	November 29, 2019	0%	0 days	1 days	43 days											
131	Submit and endorse by Gov. Depts and PM	14 days	14 days	NA	NA	October 18, 2019	October 31, 2019	November 30, 2019	December 13, 2019	0%	28 days	1 days	43 days											
132	Supervise the SI Carry Out on Site	90 days	46 days	August 10, 2019	NA	August 10, 2019	November 7, 2019	August 10, 2019	November 22, 2019	49%	0 days	4 days	15 days											
133	Submit SI Report(Draft) for Comment	21 days	21 days	NA	NA	November 8, 2019	November 28, 2019	November 23, 2019	December 13, 2019	0%	0 days	1 days	15 days											
134	Submit and endorse SI Report(Final) by Project Manager	28 days	28 days	NA	NA	November 29, 2019	December 26, 2019	December 14, 2019	January 10, 2020	0%	15 days	1 days	15 days											
135	Lifts (LT1 to LT4), Staircase and Associated Works	278 days	269.21 days	September 12, 20...	NA	September 12, 20...	June 15, 2020	September 12, 2019	June 19, 2020	0%	0 days		4 days											
136	Prepare AIP and ICE certification (Draft)	60 days	49 days	September 12, 2019	NA	September 12, 2019	November 10, 2019	September 12, 2019	November 14, 2019	18%	0 days	3 days	4 days											
137	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	November 11, 2019	January 9, 2020	December 5, 2019	February 2, 2020	0%	0 days	0.5 days	24 days											
138	Prepare AIP and ICE certification (Final)	10 days	10 days	NA	NA	January 10, 2020	January 19, 2020	February 3, 2020	February 12, 2020	0%	20 days	0 days	24 days											
139	Prepare DDA and ICE certification (Draft)	90 days	90 days	NA	NA	November 11, 2019	February 8, 2020	November 15, 2019	February 12, 2020	0%	0 days	4 days	4 days											
140	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	February 9, 2020	April 8, 2020	February 13, 2020	April 12, 2020	0%	0 days	3 days	4 days											
141	Prepare DDA for and ICE certification (Final)	15 days	15 days	NA	NA	April 9, 2020	April 23, 2020	April 13, 2020	April 27, 2020	0%	0 days	1 days	4 days											
142	Submit & endorse by PM and Statutory Authorities/Gov. Dept	53 days	53 days	NA	NA	April 24, 2020	June 15, 2020	April 28, 2020	June 19, 2020	0%	0 days	3 days	4 days											
143	Noise barrier fronting to 4B5 at Rd D3A & Bus Lay By	222 days	222 days	NA	NA	November 11, 2019	June 19, 2020	November 18, 2019	June 26, 2020	0%	0 days		7 days											
144	Prepare AIP and ICE certification (Draft)	50 days	50 days	NA	NA	November 11, 2019	December 30, 2019	November 18, 2019	January 6, 2020	0%	0 days	2 days	7 days											
145	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	December 31, 2019	February 28, 2020	January 11, 2020	March 10, 2020	0%	0 days	0.5 days	11 days											
146	Prepare AIP and ICE certification (Final)	14 days	14 days	NA	NA	February 29, 2020	March 13, 2020	March 11, 2020	March 24, 2020	0%	4 days	0 days	11 days											
147	Prepare DDA and ICE certification (Draft)	78 days	78 days	NA	NA	December 31, 2019	March 17, 2020	January 7, 2020	March 24, 2020	0%	0 days	4 days	7 days											
148	Submit & endorse by PM and Statutory Authorities/Gov. Dept	40 days	40 days	NA	NA	March 18, 2020	April 26, 2020	March 25, 2020	May 3, 2020	0%	0 days	2 days	7 days											
149	Prepare DDA for and ICE certification (Final)	14 days	14 days	NA	NA	April 27, 2020	May 10, 2020	May 4, 2020	May 17, 2020	0%	0 days	1 days	7 days											
150	Submit & endorse by PM and Statutory Authorities/Gov. Dept	40 days	40 days	NA	NA	May 11, 2020	June 19, 2020	May 18, 2020	June 26, 2020	0%	0 days	1 days	7 days											
151	Decking for Underpass (Rd L14)	390 days	390 days	NA	NA	May 11, 2020	June 4, 2021	May 23, 2020	June 16, 2021	0%	0 days		12 days											
152	Prepare AIP and ICE certification (Draft)	60 days	60 days	NA	NA	May 11, 2020	July 9, 2020	May 23, 2020	July 21, 2020	0%	0 days	3 days	12 days											
153	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	July 10, 2020	September 7, 2020	August 23, 2020	October 21, 2020	0%	0 days	0.5 days	44 days											
154	Prepare AIP and ICE certification (Final)	14 days	14 days	NA	NA	September 8, 2020	September 21, 2020	October 22, 2020	November 4, 2020	0%	0 days	0 days	44 days											
155	Prepare DDA and ICE certification (Draft)	90 days	90 days	NA	NA	September 22, 2020	December 20, 2020	November 5, 2020	February 2, 2021	0%	0 days	1 day	44 days											
156	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	December 21, 2020	February 18, 2021	February 3, 2021	April 3, 2021	0%	0 days	0.5 days	44 days											
157	Prepare DDA for and ICE certification (Final)	14 days	14 days	NA	NA	February 19, 2021	March 4, 2021	April 4, 2021	April 17, 2021	0%	0 days	0 days	44 days											
158	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	March 5, 2021	May 3, 2021	April 18, 2021	June 16, 2021	0%	32 days	0 days	44 days											
159																								

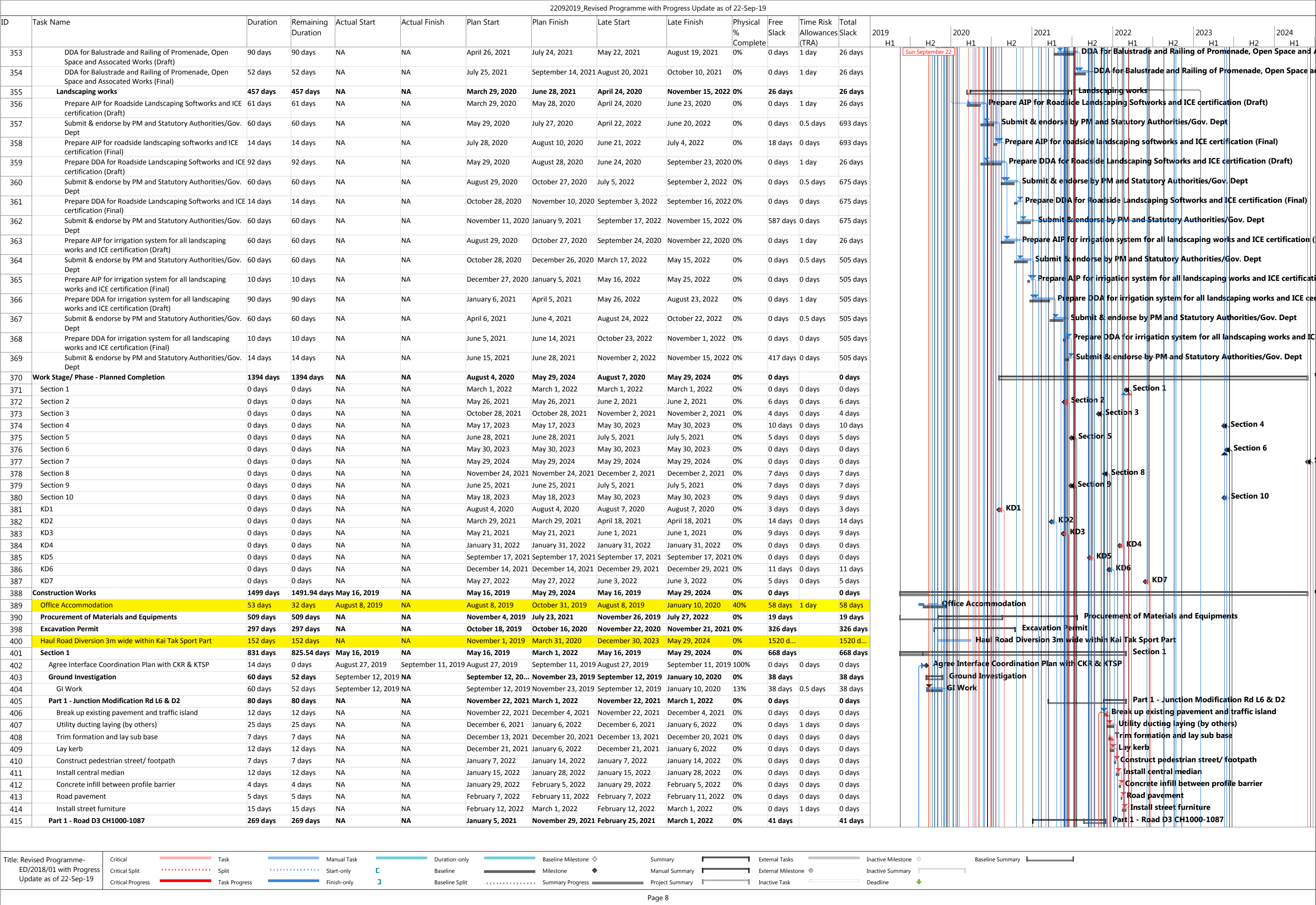
[illegible]

22092020_Revised Programme with Progress Update as of 22-Sep-19																														
ID	Task Name	Duration	Remaining Duration	Actual Start	Actual Finish	Plan Start	Plan Finish	Late Start	Late Finish	Physical % Complete	Free Slack	Time Risk Allowances (TRA)	Total Slack																	
														2019	H1	H2	2020	H1	H2	2021	H1	H2	2022	H1	H2	2023	H1	H2	2024	H1
222	Submit & endorse by PM and Statutory Authorities/Gov. Dept	14 days	14 days	NA	NA	June 26, 2020	July 9, 2020	November 8, 2021	November 21, 2021	0%	500 days	0 days	500 days				Sun September 22													
223	AIP for Roadworks - Roadworks other than at-grade Road D3 and Road L12d (Draft)	60 days	60 days	NA	NA	December 11, 2019	February 8, 2020	July 16, 2020	September 13, 2020	0%	0 days	1 day	218 days																	
224	AIP for Roadworks - Roadworks other than at-grade Road D3 and Road L12d (Final)	38 days	38 days	NA	NA	February 9, 2020	March 17, 2020	August 24, 2021	September 30, 2021	0%	52 days	0.5 days	562 days																	
225	DDA for Roadworks - Roadworks other than at-grade Road D3 and Road L12d (Draft)	90 days	90 days	NA	NA	February 9, 2020	May 8, 2020	July 3, 2021	September 30, 2021	0%	0 days	1 day	510 days																	
226	DDA for Roadworks - Roadworks other than at-grade Road D3 and Road L12d (Final)	52 days	52 days	NA	NA	May 9, 2020	June 29, 2020	October 1, 2021	November 21, 2021	0%	510 days	0.5 days	510 days																	
227	Seawater & DCS Intake Box Culverts	253 days	199.53 days	August 13, 2019	NA	August 13, 2019	April 21, 2020	August 13, 2019	April 21, 2020	0%	0 days	0 days	0 days																	
228	Prepare AIP and ICE certification (Draft)	60 days	19 days	August 13, 2019	NA	August 13, 2019	October 11, 2019	August 13, 2019	October 11, 2019	68%	0 days	3 days	0 days																	
229	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	October 12, 2019	December 10, 2019	October 12, 2019	December 10, 2019	0%	0 days	3 days	0 days																	
230	Prepare AIP and ICE certification (Final)	15 days	15 days	NA	NA	December 11, 2019	December 25, 2019	December 11, 2019	December 25, 2019	0%	0 days	1 days	0 days																	
231	Prepare DDA and ICE certification (Draft)	135 days	94 days	August 13, 2019	NA	August 13, 2019	December 25, 2019	August 13, 2019	December 25, 2019	30%	0 days	1 days	0 days																	
232	Submit & endorse by PM and Statutory Authorities/Gov. Dept	66 days	66 days	NA	NA	December 26, 2019	February 29, 2020	December 26, 2019	February 29, 2020	0%	0 days	3 days	0 days																	
233	Prepare DDA for and ICE certification (Final)	14 days	14 days	NA	NA	March 1, 2020	March 14, 2020	March 1, 2020	March 14, 2020	0%	0 days	0 days	0 days																	
234	Submit & endorse by PM and Statutory Authorities/Gov. Dept	38 days	38 days	NA	NA	March 15, 2020	April 21, 2020	March 15, 2020	April 21, 2020	0%	0 days	2 days	0 days																	
235	Rising Main	215 days	215 days	NA	NA	December 8, 2019	July 9, 2020	December 8, 2019	July 9, 2020	0%	0 days	0 days	0 days																	
236	Prepare AIP and ICE certification (Draft)	60 days	60 days	NA	NA	December 8, 2019	February 5, 2020	December 8, 2019	February 5, 2020	0%	0 days	3 days	0 days																	
237	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	February 6, 2020	April 5, 2020	February 21, 2020	April 20, 2020	0%	0 days	0.5 days	15 days																	
238	Prepare AIP and ICE certification (Final)	20 days	20 days	NA	NA	April 6, 2020	April 25, 2020	April 21, 2020	May 10, 2020	0%	15 days	0 days	15 days																	
239	Prepare DDA and ICE certification (Draft)	90 days	90 days	NA	NA	December 8, 2019	March 6, 2020	December 8, 2019	March 6, 2020	0%	0 days	4 days	0 days																	
240	Submit & endorse by PM and Statutory Authorities/Gov. Dept	55 days	55 days	NA	NA	March 7, 2020	April 30, 2020	March 7, 2020	April 30, 2020	0%	0 days	3 days	0 days																	
241	Prepare DDA and ICE certification (Final)	10 days	10 days	NA	NA	May 1, 2020	May 10, 2020	May 1, 2020	May 10, 2020	0%	0 days	0 days	0 days																	
242	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	May 11, 2020	July 9, 2020	May 11, 2020	July 9, 2020	0%	0 days	3 days	0 days																	
243	Stormwater and Sewage Drainage Works	442 days	442 days	NA	NA	December 8, 2019	February 21, 2021	March 18, 2020	June 2, 2021	0%	84 days	0 days	101 days																	
244	Prepare AIP for Bidge D3 and ICE certification (Draft)	60 days	60 days	NA	NA	December 8, 2019	February 5, 2020	March 18, 2020	May 16, 2020	0%	0 days	1 day	101 days																	
245	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	February 6, 2020	April 5, 2020	August 17, 2020	October 15, 2020	0%	0 days	0.5 days	193 days																	
246	Prepare AIP for Bidge D3 and ICE certification (Final)	10 days	10 days	NA	NA	April 6, 2020	April 15, 2020	October 16, 2020	October 25, 2020	0%	0 days	0 days	193 days																	
247	Prepare DDA for Bidge D3 and ICE certification (Draft)	90 days	90 days	NA	NA	April 16, 2020	July 14, 2020	October 26, 2020	January 23, 2021	0%	0 days	1 day	193 days																	
248	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	July 15, 2020	September 12, 2020	January 24, 2021	March 24, 2021	0%	0 days	0.5 days	193 days																	
249	Prepare DDA for Bidge D3 and ICE certification (Final)	10 days	10 days	NA	NA	September 13, 2020	September 22, 2020	March 25, 2021	April 3, 2021	0%	0 days	0 days	193 days																	
250	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	September 23, 2020	November 21, 2020	April 4, 2021	June 2, 2021	0%	176 days	0 days	193 days																	
251	Prepare AIP for Underpass, Depressed Road and ICE certification (Draft)	60 days	60 days	NA	NA	February 6, 2020	April 5, 2020	May 17, 2020	July 15, 2020	0%	0 days	1 day	101 days																	
252	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	April 6, 2020	June 4, 2020	August 17, 2020	October 15, 2020	0%	0 days	0.5 days	133 days																	
253	Prepare AIP for Underpass, Depressed Road and ICE certification (Final)	10 days	10 days	NA	NA	June 5, 2020	June 14, 2020	October 16, 2020	October 25, 2020	0%	0 days	0 days	133 days																	
254	Prepare DDA for Underpass, Depressed Road and ICE certification (Draft)	90 days	90 days	NA	NA	June 15, 2020	September 12, 2020	October 26, 2020	January 23, 2021	0%	0 days	1 day	133 days																	
255	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	September 13, 2020	November 11, 2020	January 24, 2021	March 24, 2021	0%	0 days	0.5 days	133 days																	
256	Prepare DDA for Underpass, Depressed Road and ICE certification (Final)	10 days	10 days	NA	NA	November 12, 2020	November 21, 2020	March 25, 2021	April 3, 2021	0%	0 days	0 days	133 days																	
257	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	November 22, 2020	January 20, 2021	April 4, 2021	June 2, 2021	0%	116 days	0 days	133 days																	
258	AIP for Water Works - Road L12d (Draft)	60 days	60 days	NA	NA	April 6, 2020	June 4, 2020	July 16, 2020	September 13, 2020	0%	0 days	1 day	101 days																	
259	AIP for Water Works - Road L12d (Final)	38 days	38 days	NA	NA	June 5, 2020	July 12, 2020	March 5, 2021	April 11, 2021	0%	52 days	0.5 days	273 days																	
260	DDA for Water Works - Road L12d (Draft)	90 days	90 days	NA	NA	June 5, 2020	September 2, 2020	January 12, 2021	April 11, 2021	0%	0 days	1 day	221 days																	
261	DDA for Water Works - Road L12d (Final)	52 days	52 days	NA	NA	September 3, 2020	October 24, 2020	April 12, 2021	June 2, 2021	0%	204 days	1 day	221 days																	
262	AIP for Water Works - Waterfront Promenade and at grade Open Space (Draft)	60 days	60 days	NA	NA	June 5, 2020	August 3, 2020	September 14, 2020	November 12, 2020	0%	0 days	1 day	101 days																	
263	AIP for Water Works - Waterfront Promenade and at grade Open Space (Final)	38 days	38 days	NA	NA	August 4, 2020	September 10, 2020	March 5, 2021	April 11, 2021	0%	52 days	0.5 days	213 days																	
264	DDA for Water Works - Waterfront Promenade and at grade Open Space (Draft)	90 days	90 days	NA	NA	August 4, 2020	November 1, 2020	January 12, 2021	April 11, 2021	0%	0 days	1 day	161 days																	
265	DDA for Water Works - Waterfront Promenade and at grade Open Space (Final)	52 days	52 days	NA	NA	November 2, 2020	December 23, 2020	April 12, 2021	June 2, 2021	0%	144 days	1 day	161 days																	
266	AIP for Water Works - Remaining water works (Draft)	60 days	60 days	NA	NA	August 4, 2020	October 2, 2020	November 13, 2020	January 11, 2021	0%	0 days	1 day	101 days																	
267	AIP for Water Works - Remaining water works (Final)	38 days	38 days	NA	NA	October 3, 2020	November 9, 2020	March 5, 2021	April 11, 2021	0%	52 days	0.5 days	153 days																	
Title: Revised Programme-ED/2018/01 with Progress Update as of 22-Sep-19		<div><div><div><div>Critical</div><div>Critical Split</div><div>Critical Progress</div></div><div><div>Task</div><div>Split</div><div>Task Progress</div></div></div><div><div>Manual Task</div><div>Start-only</div><div>Finish-only</div></div><div><div>Duration-only</div><div>Baseline</div><div>Baseline Split</div></div><div><div>Baseline Milestone</div><div>Milestone</div><div>Summary Progress</div></div><div><div>Summary</div><div>Manual Summary</div><div>Project Summary</div></div><div><div>External Tasks</div><div>External Milestone</div><div>Inactive Task</div></div><div><div>Inactive Milestone</div><div>Inactive Summary</div><div>Deadline</div></div><div><div>Baseline Summary</div></div></div>																												
Page 5																														

22092019_Revised Programme with Progress Update as of 22-Sep-19																														
ID	Task Name	Duration	Remaining Duration	Actual Start	Actual Finish	Plan Start	Plan Finish	Late Start	Late Finish	Physical % Complete	Free Slack	Time Risk Allowances (TRA)	Total Slack																	
268	DDA for Water Works - Remaining water works (Draft)	90 days	90 days	NA	NA	October 3, 2020	December 31, 2020	January 12, 2021	April 11, 2021	0%	0 days	1 day	101 days	2019	H1	H2	2020	H1	H2	2021	H1	H2	2022	H1	H2	2023	H1	H2	2024	H1
269	DDA for Water Works - Remaining water works (Final)	52 days	52 days	NA	NA	January 1, 2021	February 21, 2021	April 12, 2021	June 2, 2021	0%	84 days	1 day	101 days																	
270	Water Works	442 days	442 days	NA	NA	October 17, 2019	December 31, 2020	May 1, 2020	July 16, 2021	0%	197 days		197 days																	
271	Prepare AIP for Bridge D3 and ICE certification (Draft)	60 days	60 days	NA	NA	October 17, 2019	December 15, 2019	May 1, 2020	June 29, 2020	0%	0 days	1 day	197 days																	
272	Submit & endorse by PM and Statutory Authorities/Gov. Dept	28 days	28 days	NA	NA	December 16, 2019	January 12, 2020	October 28, 2020	November 24, 2020	0%	0 days	0.5 days	317 days																	
273	Prepare AIP for Bridge D3 and ICE certification (Final)	14 days	14 days	NA	NA	January 13, 2020	January 26, 2020	November 25, 2020	December 8, 2020	0%	0 days	0 days	317 days																	
274	Prepare DDA for Bridge D3 and ICE certification (Draft)	90 days	90 days	NA	NA	January 27, 2020	April 25, 2020	December 9, 2020	March 8, 2021	0%	0 days	1 day	317 days																	
275	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	April 26, 2020	June 24, 2020	March 9, 2021	May 7, 2021	0%	0 days	0.5 days	317 days																	
276	Prepare DDA for Dridge D3 and ICE certification (Final)	10 days	10 days	NA	NA	June 25, 2020	July 4, 2020	May 8, 2021	May 17, 2021	0%	0 days	0 days	317 days																	
277	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	July 5, 2020	September 2, 2020	May 18, 2021	July 16, 2021	0%	268 days	0 days	317 days																	
278	Prepare AIP for Underpass, Depressed Road and ICE certification (Draft)	60 days	60 days	NA	NA	December 16, 2019	February 13, 2020	June 30, 2020	August 28, 2020	0%	0 days	1 day	197 days																	
279	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	February 14, 2020	April 13, 2020	September 30, 2020	November 28, 2020	0%	0 days	0.5 days	229 days																	
280	Prepare AIP for Underpass, Depressed Road and ICE certification (Final)	10 days	10 days	NA	NA	April 14, 2020	April 23, 2020	November 29, 2020	December 8, 2020	0%	0 days	0	229 days																	
281	Prepare DDA for Underpass, Depressed Road and ICE certification (Draft)	90 days	90 days	NA	NA	April 24, 2020	July 22, 2020	December 9, 2020	March 8, 2021	0%	0 days	1 day	229 days																	
282	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	July 23, 2020	September 20, 2020	March 9, 2021	May 7, 2021	0%	0 days	0.5 days	229 days																	
283	Prepare DDA for Underpass, Depressed Road and ICE certification (Final)	10 days	10 days	NA	NA	September 21, 2020	September 30, 2020	May 8, 2021	May 17, 2021	0%	0 days	0 days	229 days																	
284	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	October 1, 2020	November 29, 2020	May 18, 2021	July 16, 2021	0%	180 days	0 days	229 days																	
285	AIP for Water Works - Road L12d (Draft)	60 days	60 days	NA	NA	February 14, 2020	April 13, 2020	August 29, 2020	October 27, 2020	0%	0 days	1 day	197 days																	
286	AIP for Water Works - Road L12d (Final)	38 days	38 days	NA	NA	April 14, 2020	May 21, 2020	April 18, 2021	May 25, 2021	0%	52 days	0.5 days	369 days																	
287	DDA for Water Works - Road L12d (Draft)	90 days	90 days	NA	NA	April 14, 2020	July 12, 2020	February 25, 2021	May 25, 2021	0%	0 days	1 day	317 days																	
288	DDA for Water Works - Road L12d (Final)	52 days	52 days	NA	NA	July 13, 2020	September 2, 2020	May 26, 2021	July 16, 2021	0%	268 days	1 day	317 days																	
289	AIP for Water Works - Waterfront Promenade and at grade Open Space (Draft)	60 days	60 days	NA	NA	April 14, 2020	June 12, 2020	October 28, 2020	December 26, 2020	0%	0 days	1 day	197 days																	
290	AIP for Water Works - Waterfront Promenade and at grade Open Space (Final)	38 days	38 days	NA	NA	June 13, 2020	July 20, 2020	April 18, 2021	May 25, 2021	0%	52 days	0.5 days	309 days																	
291	DDA for Water Works - Waterfront Promenade and at grade Open Space (Draft)	90 days	90 days	NA	NA	June 13, 2020	September 10, 2020	February 25, 2021	May 25, 2021	0%	0 days	1 day	257 days																	
292	DDA for Water Works - Waterfront Promenade and at grade Open Space (Final)	52 days	52 days	NA	NA	September 11, 2020	November 1, 2020	May 26, 2021	July 16, 2021	0%	208 days	1 day	257 days																	
293	AIP for Water Works - Remaining water works (Draft)	60 days	60 days	NA	NA	June 13, 2020	August 11, 2020	December 27, 2020	February 24, 2021	0%	0 days	1 day	197 days																	
294	AIP for Water Works - Remaining water works (Final)	38 days	38 days	NA	NA	August 12, 2020	September 18, 2020	April 18, 2021	May 25, 2021	0%	52 days	0.5 days	249 days																	
295	DDA for Water Works - Remaining water works (Draft)	90 days	90 days	NA	NA	August 12, 2020	November 9, 2020	February 25, 2021	May 25, 2021	0%	0 days	1 day	197 days																	
296	DDA for Water Works - Remaining water works (Final)	52 days	52 days	NA	NA	November 10, 2020	December 31, 2020	May 26, 2021	July 16, 2021	0%	148 days	1 day	197 days																	
297	Pumping Stations, Box Culverts and Intake Structures	505 days	409.17 days	May 30, 2019	NA	May 30, 2019	October 15, 2020	May 30, 2019	February 10, 2022	0%	340 days		483 days																	
298	Prepare AIP for Structures and ICE certification (Draft)	61 days	0 days	May 30, 2019	July 29, 2019	May 30, 2019	July 29, 2019	May 30, 2019	July 29, 2019	100%	0 days	1 day	0 days																	
299	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	5 days	July 30, 2019	NA	July 30, 2019	September 27, 2019	July 30, 2019	September 15, 2021	92%	0 days	0.5 days	719 days																	
300	Prepare AIP for Structures and ICE certification (Final)	14 days	14 days	NA	NA	September 28, 2019	October 11, 2019	September 16, 2021	September 29, 2021	0%	18 days	0 days	719 days																	
301	Prepare DDA for Structures and ICE certification (Draft)	92 days	37 days	July 30, 2019	NA	July 30, 2019	October 29, 2019	July 30, 2019	May 30, 2020	0%	0 days	1 day	214 days																	
302	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	October 30, 2019	December 28, 2019	September 30, 2021	November 28, 2021	0%	0 days	0.5 days	701 days																	
303	Prepare DDA for Structures and ICE certification (Final)	14 days	14 days	NA	NA	December 29, 2019	January 11, 2020	November 29, 2021	December 12, 2021	0%	0 days	0 days	701 days																	
304	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	January 12, 2020	March 11, 2020	December 13, 2021	February 10, 2022	0%	558 days	0 days	701 days																	
305	Prepare AIP for E&M and ICE certification (Draft)	60 days	5 days	July 30, 2019	NA	July 30, 2019	September 27, 2019	July 30, 2019	May 30, 2020	0%	0 days	1 day	246 days																	
306	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	September 28, 2019	November 26, 2019	April 27, 2021	June 25, 2021	0%	0 days	0.5 days	577 days																	
307	Prepare AIP for E&M and ICE certification (Final)	10 days	10 days	NA	NA	November 27, 2019	December 6, 2019	June 26, 2021	July 5, 2021	0%	0 days	0 days	577 days																	
308	Prepare DDA for E&M and ICE certification (Draft)	90 days	90 days	NA	NA	December 7, 2019	March 5, 2020	July 6, 2021	October 3, 2021	0%	0 days	1 day	577 days																	
309	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	March 6, 2020	May 4, 2020	October 4, 2021	December 2, 2021	0%	0 days	0.5 days	577 days																	
310	Prepare DDA for E&M and ICE certification (Final)	10 days	10 days	NA	NA	May 5, 2020	May 14, 2020	December 3, 2021	December 12, 2021	0%	0 days	0 days	577 days																	
Title: Revised Programme-ED/2018/01 with Progress Update as of 22-Sep-19		Critical	Task	Manual Task	Duration-only	Baseline Milestone	Summary	External Tasks	Inactive Milestone	Baseline Summary																				
Critical Split		Split	Start-only	Baseline	Milestone	Manual Summary	External Milestone	Inactive Summary																						
Critical Progress		Task Progress	Finish-only	Baseline Split	Summary Progress	Project Summary	Inactive Task	Deadline																						

Page 6

22092019_Revised Programme with Progress Update as of 22-Sep-19																																						
ID	Task Name	Duration	Remaining Duration	Actual Start	Actual Finish	Plan Start	Plan Finish	Late Start	Late Finish	Physical % Complete	Free Slack	Time Risk Allowances (TRA)	Total Slack	2019		2020		2021		2022		2023		2024														
														H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1														
311	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	May 15, 2020	July 13, 2020	December 13, 2021	February 10, 2022	0%	434 days	0 days	577 days		Sun September 22																							
312	AIP for Box Culvert and Intake Structures (Draft)	60 days	60 days	NA	NA	October 30, 2019	December 28, 2019	May 31, 2020	July 29, 2020	0%	0 days	1 day	214 days																									
313	AIP for Box Culvert and Intake Structures (Final)	38 days	38 days	NA	NA	December 29, 2019	February 4, 2020	November 13, 2021	December 20, 2021	0%	52 days	0.5 days	685 days																									
314	DDA for Box Culvert and Intake Structures (Draft)	90 days	90 days	NA	NA	December 29, 2019	March 27, 2020	July 30, 2020	October 27, 2020	0%	0 days	1 day	214 days																									
315	DDA for Box Culvert and Intake Structures (Final)	52 days	52 days	NA	NA	March 28, 2020	May 18, 2020	December 21, 2021	February 10, 2022	0%	490 days	1 day	633 days																									
316	AIP for Remaining Works (Draft)	60 days	60 days	NA	NA	March 28, 2020	May 26, 2020	October 28, 2020	December 26, 2020	0%	0 days	1 day	214 days																									
317	AIP for Remaining Works (Final)	38 days	38 days	NA	NA	May 27, 2020	July 3, 2020	November 13, 2021	December 20, 2021	0%	52 days	0.5 days	535 days																									
318	DDA for Remaining Works (Draft)	90 days	90 days	NA	NA	May 27, 2020	August 24, 2020	September 22, 2021	December 20, 2021	0%	0 days	1 day	483 days																									
319	DDA for Remaining Works (Final)	52 days	52 days	NA	NA	August 25, 2020	October 15, 2020	December 21, 2021	February 10, 2022	0%	340 days	1 day	483 days																									
320	Elevated Landscape Deck Staircase & Associated Work	302 days	173.99 days	May 30, 2019	NA	May 30, 2019	March 26, 2020	May 30, 2019	May 5, 2020	0%	40 days		40 days																									
321	Prepare AIP and ICE certification (Draft)	96 days	0 days	May 30, 2019	September 2, 2019	May 30, 2019	September 2, 2019	May 30, 2019	September 2, 2019	100%	0 days	3 days	0 days																									
322	Submit & endorse by PM and Statutory Authorities/Gov. Dept	18 days	0 days	September 3, 2019	September 20, 2019	September 3, 2019	September 20, 2019	September 3, 2019	September 20, 2019	100%	0 days	1 days	0 days																									
323	Prepare AIP and ICE certification (Final)	14 days	0 days	August 29, 2019	September 11, 2019	August 29, 2019	September 11, 2019	August 29, 2019	September 11, 2019	100%	0 days	0 days	0 days																									
324	Prepare DDA and ICE certification (Draft)	52 days	46.9 days	September 14, 2019	NA	September 14, 2019	November 13, 2019	September 14, 2019	December 9, 2019	10%	0 days	1 day	26 days																									
325	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	November 14, 2019	January 12, 2020	December 24, 2019	February 21, 2020	0%	0 days	0.5 days	40 days																									
326	Prepare DDA for and ICE certification (Final)	14 days	14 days	NA	NA	January 13, 2020	January 26, 2020	February 22, 2020	March 6, 2020	0%	0 days	0 days	40 days																									
327	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	January 27, 2020	March 26, 2020	March 7, 2020	May 5, 2020	0%	0 days	0 days	40 days																									
328	Waterfront Promenade and At-grade Open Space	671 days	671 days	NA	NA	November 14, 2019	September 14, 20...	December 10, 2019	October 10, 2021	0%	0 days		26 days																									
329	Prepare AIP for Observation Deck with Lift and Staircase and ICE certification (Draft)	61 days	61 days	NA	NA	November 14, 2019	January 13, 2020	December 10, 2019	February 8, 2020	0%	0 days	1 day	26 days																									
330	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	January 14, 2020	March 13, 2020	March 17, 2021	May 15, 2021	0%	0 days	0.5 days	428 days																									
331	Prepare AIP for Observation Deck with Lift and Staircaseand ICE certification (Final)	14 days	14 days	NA	NA	March 14, 2020	March 27, 2020	May 16, 2021	May 29, 2021	0%	18 days	0 days	428 days																									
332	Prepare DDA for Observation Deck with Lift and Staircase and ICE certification (Draft)	92 days	92 days	NA	NA	January 14, 2020	April 14, 2020	February 9, 2020	May 10, 2020	0%	0 days	1 day	26 days																									
333	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	April 15, 2020	June 13, 2020	May 30, 2021	July 28, 2021	0%	0 days	0.5 days	410 days																									
334	Prepare DDA for Observation Deck with Lift and Staircase and ICE certification (Final)	14 days	14 days	NA	NA	June 14, 2020	June 27, 2020	July 29, 2021	August 11, 2021	0%	0 days	0 days	410 days																									
335	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	June 28, 2020	August 26, 2020	August 12, 2021	October 10, 2021	0%	384 days	0 days	410 days																									
336	Prepare AIP for Remaining Works at Waterfront Promenade and ICE certification (Draft)	60 days	60 days	NA	NA	January 14, 2020	March 13, 2020	September 24, 2020	November 22, 2020	0%	0 days	1 day	254 days																									
337	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	March 14, 2020	May 12, 2020	December 25, 2020	February 22, 2021	0%	0 days	0.5 days	286 days																									
338	Prepare AIP for Remaining Works at Waterfront Promenade and ICE certification (Final)	10 days	10 days	NA	NA	May 13, 2020	May 22, 2020	February 23, 2021	March 4, 2021	0%	0 days	0 days	286 days																									
339	Prepare DDA for Remaining Works at Waterfront Promenade and ICE certification (Draft)	90 days	90 days	NA	NA	May 23, 2020	August 20, 2020	March 5, 2021	June 2, 2021	0%	0 days	1 day	286 days																									
340	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	August 21, 2020	October 19, 2020	June 3, 2021	August 1, 2021	0%	0 days	0.5 days	286 days																									
341	Prepare DDA for Remaining Works at Waterfront Promenade and ICE certification (Final)	10 days	10 days	NA	NA	October 20, 2020	October 29, 2020	August 2, 2021	August 11, 2021	0%	0 days	0 days	286 days																									
342	Submit & endorse by PM and Statutory Authorities/Gov. Dept	60 days	60 days	NA	NA	October 30, 2020	December 28, 2020	August 12, 2021	October 10, 2021	0%	260 days	0 days	286 days																									
343	AIP for Cladding Desing of Landscape Deck, Lifts and associated Works (Draft)	60 days	60 days	NA	NA	October 28, 2020	December 26, 2020	November 23, 2020	January 21, 2021	0%	0 days	1 day	26 days																									
344	AIP for Cladding Desing of Landscape Deck, Lifts and associated Works (Final)	38 days	38 days	NA	NA	December 27, 2020	February 2, 2021	July 13, 2021	August 19, 2021	0%	52 days	0.5 days	198 days																									
345	DDA for Cladding Desing of Landscape Deck, Lifts and associated Works (Draft)	90 days	90 days	NA	NA	December 27, 2020	March 26, 2021	May 22, 2021	August 19, 2021	0%	0 days	1 day	146 days																									
346	DDA for Cladding Desing of Landscape Deck, Lifts and associated Works (Final)	52 days	52 days	NA	NA	March 27, 2021	May 17, 2021	August 20, 2021	October 10, 2021	0%	120 days	1 day	146 days																									
347	AIP for Water Works - Waterfront Promenade and at grade Open Space (Draft)	60 days	60 days	NA	NA	December 27, 2020	February 24, 2021	January 22, 2021	March 22, 2021	0%	0 days	1 day	26 days																									
348	AIP for Water Works - Waterfront Promenade and at grade Open Space (Final)	38 days	38 days	NA	NA	February 25, 2021	April 3, 2021	July 13, 2021	August 19, 2021	0%	52 days	0.5 days	138 days																									
349	DDA for Water Works - Waterfront Promenade and at grade Open Space (Draft)	90 days	90 days	NA	NA	February 25, 2021	May 25, 2021	May 22, 2021	August 19, 2021	0%	0 days	1 day	86 days																									
350	DDA for Water Works - Waterfront Promenade and at grade Open Space (Final)	52 days	52 days	NA	NA	May 26, 2021	July 16, 2021	August 20, 2021	October 10, 2021	0%	60 days	1 day	86 days																									
351	AIP for Balustrade and Railing of Promenade, Open Space and Associated Works (Draft)	60 days	60 days	NA	NA	February 25, 2021	April 25, 2021	March 23, 2021	May 21, 2021	0%	0 days	1 day	26 days																									
352	AIP for Balustrade and Railing of Promenade, Open Space and Associated Works (Final)	38 days	38 days	NA	NA	April 26, 2021	June 2, 2021	July 13, 2021	August 19, 2021	0%	52 days	0.5 days	78 days																									
Title: Revised Programme-ED/2018/01 with Progress Update as of 22-Sep-19		Critical	Task	Manual Task	Duration-only	Baseline Milestone	Summary	External Tasks	Inactive Milestone	Baseline Summary																												
		Critical Split	Split	Start-only	Baseline	Milestone	Manual Summary	External Milestone	Inactive Summary																													
		Critical Progress	Task Progress	Finish-only	Baseline Split	Summary Progress	Project Summary	Inactive Task	Deadline																													



22092019\_Revised Programme with Progress Update as of 22-Sep-19

ID	Task Name	Duration	Remaining Duration	Actual Start	Actual Finish	Plan Start	Plan Finish	Late Start	Late Finish	Physical % Complete	Free Slack	Time Risk Allowances (TRA)	Total Slack																	
416	Allow Access between CH1000 and CH1087 for EMSD Thied District Cooling System for Associated Pipeline Laying (Assume the DCS Pipeline Lay within CH1010 and Ch1087 Area)	0 days	0 days	NA	NA	January 5, 2021	January 5, 2021	February 25, 2021	February 25, 2021	0%	26 days		51 days	2019	H1	H2	2020	H1	H2	2021	H1	H2	2022	H1	H2	2023	H1	H2	2024	H1
417	Between CH1000 and CH1087 Area Handover Back from EMSD third District Cooling System Contractor	0 days	0 days	NA	NA	July 30, 2021	July 30, 2021	August 24, 2021	August 24, 2021	0%	25 days		25 days																	
418	Utility ducting laying (by others)	26 days	26 days	NA	NA	August 24, 2021	September 23, 2021	August 24, 2021	September 23, 2021	0%	0 days	2 days	0 days																	
419	Trim road formation	3 days	3 days	NA	NA	September 24, 2021	September 27, 2021	September 24, 2021	September 27, 2021	0%	0 days	0 days	0 days																	
420	Lay sub base	7 days	7 days	NA	NA	September 28, 2021	October 6, 2021	September 28, 2021	October 6, 2021	0%	0 days	0 days	0 days																	
421	Lay kerb	12 days	12 days	NA	NA	October 7, 2021	October 21, 2021	October 7, 2021	October 21, 2021	0%	0 days	0 days	0 days																	
422	Construct pedestrian street/ footpath	7 days	7 days	NA	NA	October 22, 2021	October 29, 2021	October 22, 2021	October 29, 2021	0%	0 days	0 days	0 days																	
423	Install central median	10 days	10 days	NA	NA	October 30, 2021	November 10, 2021	October 30, 2021	November 10, 2021	0%	0 days	0 days	0 days																	
424	Concrete infill between profile barrier	4 days	4 days	NA	NA	November 11, 2021	November 15, 2021	November 11, 2021	November 15, 2021	0%	0 days	0 days	0 days																	
425	Road pavement	5 days	5 days	NA	NA	November 16, 2021	November 20, 2021	November 16, 2021	November 20, 2021	0%	0 days	0 days	0 days																	
426	Install street furniture	7 days	7 days	NA	NA	November 22, 2021	November 29, 2021	February 22, 2022	February 22, 2022	0%	73 days	0 days	73 days																	
427	Bridge D3 (Approach Ramp and Bridge) CH1087-1444.7	812 days	812 days	NA	NA	May 16, 2019	February 7, 2022	December 28, 2019	March 1, 2022	0%	19 days		19 days																	
428	North Approach Ramp (Fronting CKR) CH1087-1189.4 - 7 bays	306 days	306 days	NA	NA	September 23, 2019	October 3, 2020	December 28, 2019	April 17, 2021	0%	79 days		79 days																	
429	Procurement of Movement Joints for Bridge Works	90 days	90 days	NA	NA	January 11, 2020	April 9, 2020	March 4, 2020	June 1, 2020	0%	49 days		53 days																	
430	Ground Monitoring Works	14 days	14 days	NA	NA	September 23, 2019	October 6, 2019	December 28, 2019	January 10, 2020	0%	0 days	0 days	96 days																	
431	Mobilization of plant and material	10 days	10 days	NA	NA	January 11, 2020	January 22, 2020	January 11, 2020	January 22, 2020	0%	0 days	0 days	0 days																	
432	Foundation Construction	64 days	64 days	NA	NA	January 23, 2020	April 14, 2020	January 23, 2020	April 14, 2020	0%	0 days	3 days	0 days																	
433	Drive sheetpile (~200m) Prod. Rate: 10m/d/team	20 days	20 days	NA	NA	April 15, 2020	May 10, 2020	April 18, 2020	May 13, 2020	0%	0 days	1 days	3 days																	
434	Excavation ~1,876m3 & lateral support. Prod. Rate: 160m3/day/team (Bay 1 to 7)	12 days	12 days	NA	NA	May 11, 2020	May 24, 2020	April 14, 2020	May 27, 2020	0%	0 days	1 days	3 days																	
435	Blinding layer. Prod. Rate: 2bays/day	4 days	4 days	NA	NA	May 25, 2020	May 28, 2020	May 28, 2020	June 1, 2020	0%	0 days	0 days	3 days																	
436	Base slab Prod. Rate: 8d/bay/team	56 days	56 days	NA	NA	May 29, 2020	August 4, 2020	June 2, 2020	March 15, 2021	0%	3 days	3 days	3 days																	
437	Base slab (Bay 2 & 4) -1 team	16 days	16 days	NA	NA	May 29, 2020	June 16, 2020	June 2, 2020	June 19, 2020	0%	0 days	1 days	3 days																	
438	Base slab (Bay 1 & 3) - 1 team	16 days	16 days	NA	NA	June 17, 2020	July 7, 2020	June 20, 2020	July 10, 2020	0%	0 days	1 days	3 days																	
439	Base slab (Bay 5 & 7) - 1 team	16 days	16 days	NA	NA	July 8, 2020	July 25, 2020	January 25, 2021	February 11, 2021	0%	0 days	0 days	166 days																	
440	Base slab (Bay 6) - 1 team	8 days	8 days	NA	NA	July 27, 2020	August 4, 2020	March 6, 2021	March 15, 2021	0%	24 days	0 days	182 days																	
441	Wall. Prod. Rate: 12d/bay/team	74 days	74 days	NA	NA	July 8, 2020	October 3, 2020	July 11, 2020	April 17, 2021	0%	3 days	3 days	3 days																	
442	Wall (Bay 2 & 4) - 2 teams	12 days	12 days	NA	NA	July 8, 2020	July 21, 2020	July 11, 2020	July 24, 2020	0%	0 days	1 days	3 days																	
443	Wall (Bay 1 & 3) 2 teams (KD1)	12 days	12 days	NA	NA	July 22, 2020	August 4, 2020	July 25, 2020	August 7, 2020	0%	0 days	1 days	3 days																	
444	Wall ( Bay 5 & 7) - 1 team	24 days	24 days	NA	NA	August 5, 2020	September 1, 2020	February 16, 2021	March 15, 2021	0%	0 days	0.5 days	158 days																	
445	Wall (Bay 6) - 1 team (KD2)	12 days	12 days	NA	NA	September 2, 2020	September 15, 2020	March 16, 2021	March 29, 2021	0%	0 days	0 days	158 days																	
446	Backfill and extract sheet pile	14 days	14 days	NA	NA	September 16, 2020	October 3, 2020	March 30, 2021	April 17, 2021	0%	144 days	0 days	158 days																	
447	North Approach Ramp (Fronting KTSP) CH1087-1189.4 - 7 bays	608 days	608 days	NA	NA	October 7, 2019	October 23, 2021	April 1, 2020	February 21, 2022	0%	97 days		97 days																	
448	Ground Monitoring Works	14 days	14 days	NA	NA	October 7, 2019	October 20, 2019	April 1, 2020	April 14, 2020	0%	0 days	0 days	177 days																	
449	Mobilization of plant and materials	19 days	19 days	NA	NA	April 15, 2020	May 8, 2020	April 15, 2020	May 8, 2020	0%	0 days	1 days	0 days																	
450	Foundation Construction	94 days	94 days	NA	NA	May 9, 2020	August 28, 2020	May 9, 2020	August 28, 2020	0%	0 days	4 days	0 days																	
451	Drive sheetpile (~200m) Prod. Rate: 10m/d/team	24 days	24 days	NA	NA	August 29, 2020	September 25, 2020	August 29, 2020	September 25, 2020	0%	0 days	1 days	0 days																	
452	Excavation ~1,996m3 & lateral support. Prod. Rate: 160m3/day/team	18 days	18 days	NA	NA	September 26, 2020	October 19, 2020	September 26, 2020	October 19, 2020	0%	0 days	1 days	0 days																	
453	Blinding layer. Prod. Rate: 2bays/day	13 days	13 days	NA	NA	October 20, 2020	November 4, 2020	October 20, 2020	November 4, 2020	0%	0 days	0 days	0 days																	
454	Base slab (Bay 1 to 7) Prod Rate: 8d/bay/team- 1 team	64 days	64 days	NA	NA	November 5, 2020	January 21, 2021	November 5, 2020	January 21, 2021	0%	0 days	3 days	0 days																	
455	Wall (Bay 1 to 7) 12d/bay/team - 1 team (KD3)	95 days	95 days	NA	NA	January 22, 2021	May 21, 2021	January 22, 2021	May 21, 2021	0%	0 days	4 days	0 days																	
456	Backfilling ~8,372.91m3 within approach ramp to formation level (160m3/day) considered time for SRT	53 days	53 days	NA	NA	May 22, 2021	July 24, 2021	May 22, 2021	July 24, 2021	0%	0 days	1 days	0 days																	
457	Placing of precast planting channel along approach ramp	24 days	24 days	NA	NA	July 27, 2021	August 23, 2021	July 27, 2021	August 23, 2021	0%	0 days	1 days	0 days																	
458	Utility ducting laying (by others)	26 days	26 days	NA	NA	July 26, 2021	August 24, 2021	July 26, 2021	August 24, 2021	0%	0 days	1 days	0 days																	
459	Construct pedestrian street/ footpath	5 days	5 days	NA	NA	August 25, 2021	August 30, 2021	August 25, 2021	August 30, 2021	0%	0 days	0 days	0 days																	
460	Install central median	6 days	6 days	NA	NA	August 31, 2021	September 6, 2021	August 31, 2021	September 6, 2021	0%	0 days	0 days	0 days																	
461	Concrete infill between profile barrier	5 days	5 days	NA	NA	September 7, 2021	September 11, 2021	September 7, 2021	September 11, 2021	0%	0 days	0 days	0 days																	
462	Lay sub base	4 days	4 days	NA	NA	September 13, 2021	September 16, 2021	September 13, 2021	September 16, 2021	0%	0 days	0 days	0 days																	
463	Road pavement	5 days	5 days	NA	NA	September 17, 2021	September 23, 2021	September 17, 2021	September 23, 2021	0%	0 days	0 days	0 days																	
464	Install railing on top of retaining wall & street furniture	24 days	24 days	NA	NA	September 24, 2021	October 23, 2021	January 21, 2022	February 21, 2022	0%	24 days	0.5 days	97 days																	
465	Part 3G - CH1189.4 to CH1229 North Abutment	286 days	286 days	NA	NA	April 15, 2020	March 29, 2021	May 4, 2020	April 17, 2021	0%	14 days		14 days																	
466	Pre-drilling Works	14 days	14 days	NA	NA	April 15, 2020	April 28, 2020	May 4, 2020	May 17, 2020	0%	0 days	1 days	19 days																	
467	Bored pile (8 numbers). Prod. Rate: 10d/pile/rig.	80 days	80 days	NA	NA	April 29, 2020	August 4, 2020	May 18, 2020	August 20, 2020	0%	0 days	2 days	14 days																	
468	Pile Testing (28d curing & 14 test) - 1 full-core to be carried out	42 days	42 days	NA	NA	August 5, 2020	September 22, 2020	August 21, 2020	October 10, 2020	0%	0 days	2 days	14 days																	
469	Proof-drilling Works	7 days	7 days	NA	NA	August 5, 2020	August 11, 2020	October 4, 2020	October 10, 2020	0%	42 days	0 days	60 days																	
470	Pile Loading Test	16 days	16 days	NA	NA	September 23, 2020	October 8, 2020	October 11, 2020	October 26, 2020	0%	0 days	1 days	18 days																	
471	Drive sheetpile (~90m) Prod. Rate: 10m/d/team	9 days	9 days	NA	NA	October 9, 2020	October 19, 2020	October 27, 2020	November 5, 2020	0%	0 days	0 days	14 days																	
472	Excavation ~780m3 & lateral support. Prod. Rate: 160m3/day/team	6 days	6 days	NA	NA	October 20, 2020	October 27, 2020	November 6, 2020	November 12, 2020	0%	0 days	0 days	14 days																	
473	Blinding layer	1 day	1 day	NA	NA	October 28, 2020	October 28, 2020	November 13, 2020	November 13, 2020	0%	0 days	0 days	14 days																	
474	Base Slab	20 days	20 days	NA	NA	October 29, 2020	November 20, 2020	November 14, 2020	December 7, 2020	0%	0 days	1 days	14 days																	

22092019_Revised Programme with Progress Update as of 22-Sep-19																								
ID	Task Name	Duration	Remaining Duration	Actual Start	Actual Finish	Plan Start	Plan Finish	Late Start	Late Finish	Physical % Complete	Free Slack	Time Risk Allowances (TRA)	Total Slack	2019	2020	2021	2022	2023	2024					
														H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	
475	Wall (3.85m thk). Prod. Rate: 18d/bay/team	30 days	30 days	NA	NA	November 21, 2020	December 28, 2020	December 8, 2020	January 14, 2021	0%	0 days	1 days	14 days											
476	Wall (0.5m thk). Prod. Rate: 14d/bay/team (KD2)	74 days	74 days	NA	NA	December 29, 2020	March 29, 2021	January 15, 2021	April 17, 2021	0%	0 days	0 days	14 days											
477	Backfill and extract sheet pile	7 days	7 days	NA	NA	December 29, 2020	January 6, 2021	March 27, 2021	April 7, 2021	0%	0 days	0 days	72 days											
478	Install bridge bearing	7 days	7 days	NA	NA	January 7, 2021	January 14, 2021	April 8, 2021	April 15, 2021	0%	61 days	0 days	72 days											
479	Part 3C - CH1229 to CH1279	573 days	573 days	NA	NA	January 11, 2020	December 14, 2021	January 20, 2020	December 29, 2021	0%	7 days		7 days											
480	Mobilization of plant and material	6 days	6 days	NA	NA	January 11, 2020	January 17, 2020	January 20, 2020	January 29, 2020	0%	0 days	1 days	7 days											
481	Pre-drilling Works	14 days	14 days	NA	NA	March 21, 2020	April 7, 2020	May 14, 2020	May 29, 2020	0%	0 days	0 days	40 days											
482	Bored pile (3 numbers) @ CH1229. Prod. Rate: 12d/pile/rig.	36 days	36 days	NA	NA	March 21, 2020	May 8, 2020	May 14, 2020	June 24, 2020	0%	0 days	0.5 days	40 days											
483	Pile Testing (14d curing & 14 test)	28 days	28 days	NA	NA	May 9, 2020	June 10, 2020	June 26, 2020	July 29, 2020	0%	0 days	0.5 days	40 days											
484	Proof-drilling Works	7 days	7 days	NA	NA	May 9, 2020	May 15, 2020	July 23, 2020	July 29, 2020	0%	26 days	0 days	75 days											
485	Pile Loading Test	14 days	14 days	NA	NA	June 11, 2020	June 24, 2020	July 30, 2020	August 12, 2020	0%	1 day	0 days	49 days											
486	Pile Cap @ CH1229	64 days	64 days	NA	NA	June 26, 2020	September 9, 2020	August 13, 2020	September 23, 20...	0%	12 days		12 days											
487	Drive sheetpile (~75m). Prod. Rate: 10m/day/side/team	8 days	8 days	NA	NA	June 26, 2020	July 6, 2020	August 13, 2020	August 21, 2020	0%	0 days	0 days	40 days											
488	Excavation ~755m3 & lateral support. Prod. Rate: 160m3/day/team	5 days	5 days	NA	NA	July 7, 2020	July 11, 2020	August 22, 2020	August 27, 2020	0%	0 days	0 days	40 days											
489	Blinding layer	1 day	1 day	NA	NA	July 13, 2020	July 13, 2020	August 28, 2020	August 28, 2020	0%	28 days	0 days	40 days											
490	Pilecap structure	14 days	14 days	NA	NA	August 15, 2020	August 31, 2020	August 29, 2020	September 14, 2020	0%	0 days	1 days	12 days											
491	Backfill and extract sheet pile	8 days	8 days	NA	NA	September 1, 2020	September 9, 2020	September 15, 2020	September 23, 2020	0%	0 days	0 days	12 days											
492	Pier @ CH1229	48 days	48 days	NA	NA	September 10, 2020	November 7, 2020	September 24, 2020	November 21, 2020	0%	0 days	2 days	12 days											
493	Pre-drilling Works	14 days	14 days	NA	NA	January 18, 2020	January 31, 2020	January 30, 2020	February 12, 2020	0%	0 days	1 days	12 days											
494	Bored pile (3 numbers) @ CH1269. Prod. Rate: 10d/pile/rig.	30 days	30 days	NA	NA	February 1, 2020	March 6, 2020	February 13, 2020	March 18, 2020	0%	0 days	0 days	10 days											
495	Pile Testing (14d curing & 14 test)	28 days	28 days	NA	NA	March 7, 2020	April 9, 2020	April 21, 2020	May 25, 2020	0%	0 days	0.5 days	34 days											
496	Proof-drilling Works	7 days	7 days	NA	NA	March 7, 2020	March 13, 2020	May 19, 2020	May 25, 2020	0%	27 days	0 days	73 days											
497	Pile Loading Test	14 days	14 days	NA	NA	April 10, 2020	April 23, 2020	May 26, 2020	June 8, 2020	0%	0 days	0 days	46 days											
498	Pile Cap @ CH1269	42 days	42 days	NA	NA	April 24, 2020	June 13, 2020	June 9, 2020	July 29, 2020	0%	37 days		37 days											
499	Drive sheetpile (~75m). Prod. Rate: 10m/day/side/team	8 days	8 days	NA	NA	April 24, 2020	May 5, 2020	June 9, 2020	June 17, 2020	0%	0 days	0 days	37 days											
500	Excavation ~1677m3 & lateral support. Prod. Rate: 160m3/day/team	11 days	11 days	NA	NA	May 6, 2020	May 18, 2020	June 18, 2020	July 2, 2020	0%	0 days	0 days	37 days											
501	Blinding layer	1 day	1 day	NA	NA	May 19, 2020	May 19, 2020	July 3, 2020	July 3, 2020	0%	0 days	0 days	37 days											
502	Pile Cap structure	14 days	14 days	NA	NA	May 20, 2020	June 4, 2020	July 4, 2020	July 20, 2020	0%	0 days	0 days	37 days											
503	Backfill and extract sheet pile	8 days	8 days	NA	NA	June 5, 2020	June 13, 2020	July 21, 2020	July 29, 2020	0%	0 days	0 days	37 days											
504	Pier @ CH1269	48 days	48 days	NA	NA	June 15, 2020	August 11, 2020	July 30, 2020	September 23, 2020	0%	25 days	0 days	37 days											
505	Bridge deck between CH1229-1269 [DB-SQ1]	116 days	116 days	NA	NA	November 9, 2020	March 30, 2021	January 22, 2021	April 15, 2021	0%	11 days		11 days											
506	Falsework erection	7 days	7 days	NA	NA	November 9, 2020	November 16, 2020	January 22, 2021	January 29, 2021	0%	50 days	0 days	61 days											
507	Structure deck	28 days	28 days	NA	NA	January 19, 2021	February 23, 2021	February 1, 2021	March 8, 2021	0%	0 days	1 days	11 days											
508	Prestressing	16 days	16 days	NA	NA	March 12, 2021	March 30, 2021	March 25, 2021	April 15, 2021	0%	0 days	1 days	11 days											
509	Median barrier, utility through, parapet	45 days	45 days	NA	NA	March 31, 2021	May 27, 2021	May 10, 2021	July 3, 2021	0%	0 days	0.5 days	30 days											
510	Utility ducting laying (by others)	14 days	14 days	NA	NA	May 28, 2021	June 12, 2021	September 25, 2021	October 12, 2021	0%	65 days	0 days	100 days											
511	Street furniture (KD6)	21 days	21 days	NA	NA	November 20, 2021	December 14, 2021	December 3, 2021	December 29, 2021	0%	0 days	2 days	11 days											
512	Bridge deck between CH1189-1229 [DB-T2-SQ2]	64 days	64 days	NA	NA	March 31, 2021	June 19, 2021	April 16, 2021	July 3, 2021	0%	11 days		11 days											
513	Falsework erection	7 days	7 days	NA	NA	March 31, 2021	April 10, 2021	April 16, 2021	April 23, 2021	0%	0 days	0 days	11 days											
514	Structure deck	28 days	28 days	NA	NA	April 12, 2021	May 14, 2021	April 24, 2021	May 28, 2021	0%	0 days	1 days	11 days											
515	Prestressing	15 days	15 days	NA	NA	June 2, 2021	June 19, 2021	June 16,																

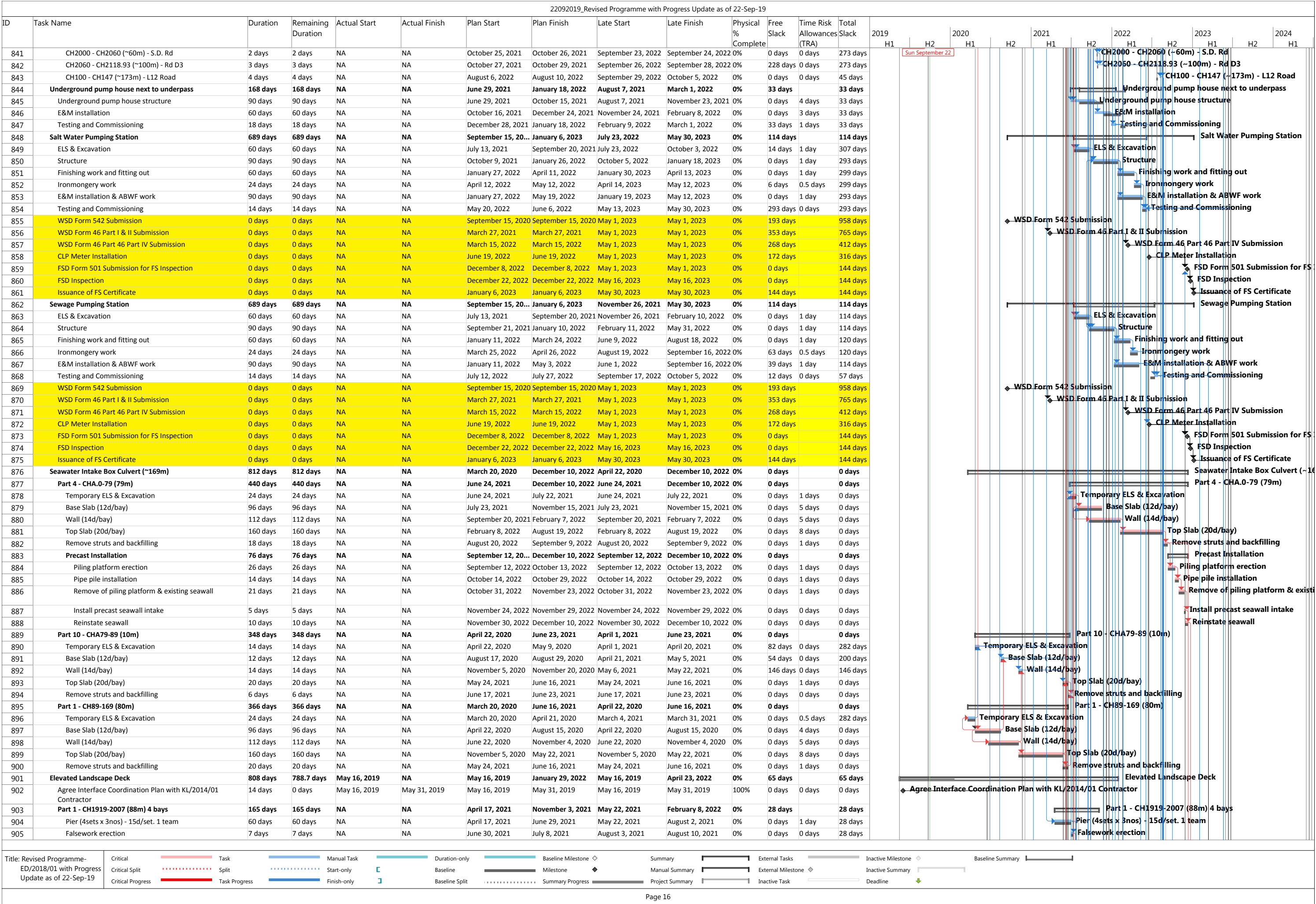
22092019_Revised Programme with Progress Update as of 22-Sep-19																														
ID	Task Name	Duration	Remaining Duration	Actual Start	Actual Finish	Plan Start	Plan Finish	Late Start	Late Finish	Physical % Complete	Free Slack	Time Risk Allowances (TRA)	Total Slack																	
														2019	H1	H2	2020	H1	H2	2021	H1	H2	2022	H1	H2	2023	H1	H2	2024	H1
536	Blinding layer	1 day	1 day	NA	NA	July 29, 2020	July 29, 2020	August 11, 2020	August 11, 2020	0%	0 days	0 days	11 days							Blinding layer										
537	Pilecap structure	14 days	14 days	NA	NA	July 30, 2020	August 14, 2020	August 12, 2020	August 27, 2020	0%	0 days	1 days	11 days							Pilecap structure										
538	Backfill and extract sheet pile	8 days	8 days	NA	NA	August 15, 2020	August 24, 2020	August 28, 2020	September 5, 2020	0%	0 days	1 days	11 days							Backfill and extract sheet pile										
539	Agree Interface Coordination Plan with CKP-KTW (HY/2014/07)	14 days	14 days	NA	NA	May 6, 2020	May 21, 2020	August 21, 2020	September 5, 2020	0%	79 days	0 days	90 days							Agree Interface Coordination Plan with CKP-KTW (HY/2014/07)										
540	Allow access to CKR-KTW contractor for sheet pile wall installation. PS App.1.18 2.7(A)( c)	63 days	63 days	NA	NA	August 25, 2020	November 9, 2020	September 7, 2020	November 21, 2020	0%	0 days	3 days	11 days							Allow access to CKR-KTW contractor for sheet pile wall installation. PS App.1.18 2.7(A)( c)										
541	Pier @ CH1314	49 days	49 days	NA	NA	November 10, 2020	January 8, 2021	November 23, 2020	January 21, 2021	0%	0 days	2 days	11 days							Pier @ CH1314										
542	Pre-drilling Works	12 days	12 days	NA	NA	August 5, 2020	August 16, 2020	August 23, 2020	September 3, 2020	0%	0 days	1 days	18 days							Pre-drilling Works										
543	Bore pile (3 numbers) @ CH1351. Prod. Rate: 12d/pile/rig	36 days	36 days	NA	NA	August 17, 2020	September 26, 2020	September 4, 2020	October 17, 2020	0%	0 days	1 days	16 days							Bore pile (3 numbers) @ CH1351. Prod. Rate: 12d/pile/rig										
544	Pile Testing (14d curing & 14 test)	28 days	28 days	NA	NA	September 28, 2020	November 2, 2020	January 2, 2021	February 3, 2021	0%	0 days	0.5 days	77 days							Pile Testing (14d curing & 14 test)										
545	Proof-drilling Works	7 days	7 days	NA	NA	September 27, 2020	October 3, 2020	January 28, 2021	February 3, 2021	0%	30 days	0 days	123 days							Proof-drilling Works										
546	Pile Loading Test	14 days	14 days	NA	NA	November 3, 2020	November 16, 2020	February 4, 2021	February 17, 2021	0%	0 days	0 days	93 days							Pile Loading Test										
547	Pile Cap @ CH1351	36 days	36 days	NA	NA	November 17, 2020	December 30, 2020	February 18, 2021	March 31, 2021	0%	74 days	74 days	74 days							Pile Cap @ CH1351										
548	Drive sheetpile (~75m). Prod. Rate: 10m/day/side/team	8 days	8 days	NA	NA	November 17, 2020	November 25, 2020	February 18, 2021	February 26, 2021	0%	0 days	0 days	74 days							Drive sheetpile (~75m). Prod. Rate: 10m/day/side/team										
549	Excavation ~755m3 & lateral support. Prod. Rate: 160m3/day/team	5 days	5 days	NA	NA	November 26, 2020	December 1, 2020	February 27, 2021	March 4, 2021	0%	0 days	0 days	74 days							Excavation ~755m3 & lateral support. Prod. Rate: 160m3/day/team										
550	Blinding layer	1 day	1 day	NA	NA	December 2, 2020	December 2, 2020	March 5, 2021	March 5, 2021	0%	0 days	0 days	74 days							Blinding layer										
551	Pile Cap structure	14 days	14 days	NA	NA	December 3, 2020	December 18, 2020	March 6, 2021	March 22, 2021	0%	0 days	0 days	74 days							Pile Cap structure										
552	Backfill and extract sheet pile	8 days	8 days	NA	NA	December 19, 2020	December 30, 2020	March 23, 2021	March 31, 2021	0%	7 days	0 days	74 days							Backfill and extract sheet pile										
553	Pier @ CH1351	48 days	48 days	NA	NA	January 9, 2021	March 9, 2021	April 1, 2021	June 1, 2021	0%	0 days	0.5 days	67 days							Pier @ CH1351										
554	Bridge deck between CH1314-1351	64 days	64 days	NA	NA	March 10, 2021	May 28, 2021	June 2, 2021	August 20, 2021	0%	67 days	1 day	67 days							Bridge deck between CH1314-1351										
555	Falsework erection	7 days	7 days	NA	NA	March 10, 2021	March 17, 2021	June 2, 2021	June 9, 2021	0%	0 days	0 days	67 days							Falsework erection										
556	Structure deck	28 days	28 days	NA	NA	March 18, 2021	April 22, 2021	June 10, 2021	July 14, 2021	0%	0 days	0.5 days	67 days							Structure deck										
557	Prestressing	15 days	15 days	NA	NA	May 11, 2021	May 28, 2021	August 4, 2021	August 20, 2021	0%	0 days	0 days	70 days							Prestressing										
558	Median barrier, utility through, parapet	24 days	24 days	NA	NA	May 29, 2021	June 26, 2021	August 26, 2021	September 23, 2021	0%	0 days	0.5 days	74 days							Median barrier, utility through, parapet										
559	Utility ducting laying (by others)	14 days	14 days	NA	NA	June 28, 2021	July 14, 2021	October 7, 2021	October 23, 2021	0%	81 days	0 days	84 days							Utility ducting laying (by others)										
560	Street furniture	21 days	21 days	NA	NA	June 28, 2021	July 22, 2021	September 24, 2021	October 20, 2021	0%	74 days	0 days	74 days							Street furniture										
561	Part 1 - CH1372 to CH1386	102 days	102 days	NA	NA	July 7, 2021	November 5, 2021	July 7, 2021	November 9, 2021	0%	0 days	0 days	0 days							Part 1 - CH1372 to CH1386										
562	Bridge deck between CH1351-1386	64 days	64 days	NA	NA	July 7, 2021	September 19, 2021	July 7, 2021	September 20, 2021	0%	0 days	0 days	0 days							Bridge deck between CH1351-1386										
563	Falsework erection	7 days	7 days	NA	NA	July 7, 2021	July 14, 2021	July 7, 2021	July 14, 2021	0%	0 days	0 days	0 days							Falsework erection										
564	Structure deck	28 days	28 days	NA	NA	July 15, 2021	August 16, 2021	July 15, 2021	August 16, 2021	0%	0 days	1 days	0 days							Structure deck										
565	Prestressing	15 days	15 days	NA	NA	September 2, 2021	September 19, 2021	September 2, 2021	September 20, 2021	0%	0 days	1 days	0 days							Prestressing										
566	Median barrier, utility through, parapet	24 days	24 days	NA	NA	September 20, 2021	October 20, 2021	September 20, 2021	October 20, 2021	0%	0 days	1 days	0 days							Median barrier, utility through, parapet										
567	Utility ducting laying (by others)	14 days	14 days	NA	NA	October 21, 2021	November 5, 2021	October 25, 2021	November 9, 2021	0%	0 days	1 days	3 days							Utility ducting laying (by others)										
568	Street furniture	14 days	14 days	NA	NA	October 21, 2021	November 5, 2021	October 21, 2021	November 5, 2021	0%	0 days	1 days	0 days							Street furniture										
569	Part 1 - CH1386 to CH1394 South Abutment	210 days	210 days	NA	NA	October 19, 2020	July 6, 2021	October 19, 2020	November 5, 2021	0%	0 days	0 days	0 days							Part 1 - CH1386 to CH1394 South Abutment										
570	Pre-drilling Works	14 days	14 days	NA	NA	October 19, 2020	November 1, 2020	October 19, 2020	November 1, 2020	0%	0 days	1 days	0 days							Pre-drilling Works										
571	Bored pile (8 numbers) @ CH1386. Prod. Rate: 12d/pile/rig.	96 days	96 days	NA	NA	November 2, 2020	February 27, 2021	November 2, 2020	February 27, 2021	0%	0 days	1 days	0 days							Bored pile (8 numbers) @ CH1386. Prod. Rate: 12d/pile/rig.										
572	Pile Testing	30 days	30 days	NA	NA	March 1, 2021	April 7, 2021	March 1, 2021	April 7, 2021	0%	0 days	1 days	0 days							Pile Testing										
573	Proof-drilling Works	7 days	7 days	NA	NA	February 28, 2021	March 6, 2021	April 1, 2021	April 7, 2021	0%	32 days	0 days	32 days							Proof-drilling Works										
574	Pile Loading Test	14 days	14 days	NA	NA	April 8, 2021	April 21, 2021	April 8, 2021	April 21, 2021	0%	0 days	1 days	0 days							Pile Loading Test										
575	Drive sheetpile (~900m) Prod. Rate: 10m/d/team	9 days	9 days	NA	NA	March 1, 2021	March 10, 2021	April 12, 2021	April 21, 2021	0%	33 days	0 days	33 days							Drive sheetpile (~900m) Prod. Rate: 10m/d/team										
576	Excavation ~1,344m3 & lateral support. Prod. Rate: 160m3/day/team	9 days	9 days	NA	NA	April 22, 2021	May 3, 2021	April 22, 2021	May 3, 2021	0%	0 days	1 days	0 days							Excavation ~1,344m3 & lateral support. Prod. Rate: 160m3/day/team										
577	Blinding layer	1 day	1 day	NA	NA	May 4, 2021	May 4, 2021	May 4, 2021	May 4, 2021	0%	0 days	0 days	0 days							Blinding layer										
578	Base Slab	12 days	12 days	NA	NA	May 5, 2021	May 19, 2021	May 5, 2021	May 20, 2021	0%	0 days	0 days	0 days							Base Slab										
579	Wall (3.85m thk). Prod. Rate: 18d/bay/team	18 days	18 days	NA	NA	May 20, 2021	June 9, 2021	May 20, 2021	June 9, 2021	0%	0 days	1 days	0 days							Wall (3.85m thk). Prod. Rate: 18d/bay/team										
580	Wall (0.5m thk)	14 days	14 days	NA	NA	June 10, 2021	June 27, 2021	June 10, 2021	June 28, 2021	0%	0 days	1 days	0 days							Wall (0.5m thk)										
581	Install bridge bearing	7 days	7 days	NA	NA	June 28, 2021	July 6, 2021	June 28, 2021	July 6, 2021	0%	0 days	0 days	0 days							Install bridge bearing										
582	South Approach Ramp - CH1394-1444.7 - Total 8 bays (4 bay/side)	682 days	682 days	NA	NA	October 21, 2019	February 7, 2022	August 11, 2020	March 1, 2022	0%	19 days		19 days							South Approach Ramp - CH1394-1444.7 - Total 8 bays (4 bay/side)										
583	Ground Monitoring Works	14 days	14 days	NA	NA	October 21, 2019	November 3, 2019	August 11, 2020	August 24, 2020	0%	187 days	0 days	295 days							Ground Monitoring Works										
584	Mobilization of plant and materials	10 days	10 days	NA	NA	May 9, 2020	May 20, 2020	August 25, 2020	September 4, 2020	0%	0 days	0 days	90 days							Mobilization of plant and materials										
585	Foundation Construction	90 days	90 days	NA	NA	May 21, 2020	September 4, 2020	September 5, 2020	December 22, 2020	0%	0 days	1 day	90 days							Foundation Construction										
586	Drive sheetpile (~240m) Prod. Rate: 10m/d/team	24 days	24 days	NA	NA	September 5, 2020	October 5, 2020	December 23, 2020	January 22, 2021	0%	0 days	0.5 days	90 days							Drive sheetpile (~240m) Prod. Rate: 10m/d/team										
587	Excavation ~2,688m3 & lateral support. Prod. Rate: 160m3/day/team	18 days	18 days	NA	NA	October 6, 2020	October 27, 2020	January 23, 2021	February 16, 2021	0%	0 days	0 days	90 days							Excavation ~2,688m3 & lateral support. Prod. Rate: 160m3/day/team										
588	Blinding layer. Prod. Rate: 2bays/day	4 days	4 days	NA	NA	October 28, 2020	October 31, 2020	February 17, 2021	February 20, 2021	0%	0 days	0 days	90 days							Blinding layer. Prod. Rate: 2bays/day										
589	Base Slab Prod. Rate: 8d/bay/team	64 days	64 days	NA	NA	November 2, 2020	January 18, 2021	February 22, 2021	May 11, 2021	0%	0 days	1 day	90 days							Base Slab Prod. Rate: 8d/bay/team										
590	Wall. Prod. Rate: 12d/bay/team	96 days	96 days	NA	NA	January 19, 2021	May 18, 2021	May 12, 2021	September 3, 2021	0%	0 days	1 day	90 days							Wall. Prod. Rate: 12d/bay/team</										

22092019_Revised Programme with Progress Update as of 22-Sep-19																														
ID	Task Name	Duration	Remaining Duration	Actual Start	Actual Finish	Plan Start	Plan Finish	Late Start	Late Finish	Physical % Complete	Free Slack	Time Risk Allowances (TRA)	Total Slack	2019	H1	H2	2020	H1	H2	2021	H1	H2	2022	H1	H2	2023	H1	H2	2024	H1
597	Lay sub base	4 days	4 days	NA	NA	December 22, 2021	December 28, 2021	January 17, 2022	January 20, 2022	0%	0 days	0 days	19 days																	
598	Road pavement	7 days	7 days	NA	NA	December 29, 2021	January 6, 2022	January 21, 2022	January 28, 2022	0%	0 days	0 days	19 days																	
599	Install railing on top of retaining wall	24 days	24 days	NA	NA	January 7, 2022	February 7, 2022	January 29, 2022	March 1, 2022	0%	19 days	0.5 days	19 days																	
600	Part 1 - Road D3 CH1444.7-1560	69 days	69 days	NA	NA	December 4, 2021	March 1, 2022	December 4, 2021	March 1, 2022	0%	0 days	0 days	0 days																	
601	Trim road formation	3 days	3 days	NA	NA	December 4, 2021	December 7, 2021	December 4, 2021	December 7, 2021	0%	0 days	0 days	0 days																	
602	Utility ducting laying (by others)	14 days	14 days	NA	NA	December 8, 2021	December 23, 2021	December 8, 2021	December 23, 2021	0%	0 days	1 days	0 days																	
603	Lay sub base	12 days	12 days	NA	NA	December 24, 2021	January 10, 2022	December 24, 2021	January 10, 2022	0%	0 days	0 days	0 days																	
604	Lay kerb	7 days	7 days	NA	NA	January 11, 2022	January 18, 2022	January 11, 2022	January 18, 2022	0%	0 days	0 days	0 days																	
605	Construct pedestrian street/ footpath	10 days	10 days	NA	NA	January 19, 2022	January 30, 2022	January 19, 2022	January 31, 2022	0%	0 days	0 days	0 days																	
606	Install central median	7 days	7 days	NA	NA	January 31, 2022	February 10, 2022	January 31, 2022	February 10, 2022	0%	0 days	0 days	0 days																	
607	Concrete infill between profile barrier	5 days	5 days	NA	NA	February 11, 2022	February 16, 2022	February 11, 2022	February 16, 2022	0%	0 days	0 days	0 days																	
608	Road pavement	5 days	5 days	NA	NA	February 17, 2022	February 22, 2022	February 17, 2022	February 22, 2022	0%	0 days	0 days	0 days																	
609	Install street furniture	6 days	6 days	NA	NA	February 23, 2022	March 1, 2022	February 23, 2022	March 1, 2022	0%	0 days	0 days	0 days																	
610	Underpass and Depressed Road	739 days	733.65 days	September 3, 2019	NA	September 3, 2019	March 1, 2022	September 3, 2019	May 29, 2024	0%	668 days		668 days																	
611	North Depressed Rd (CH1560-1720) - 8 bays	413 days	401.77 days	September 3, 2019	NA	September 3, 2019	January 22, 2021	September 3, 2019	March 1, 2022	0%	326 days		326 days																	
612	Ground Monitoring Works	17 days	0 days	September 3, 2019	September 19, 2019	September 3, 2019	September 19, 2019	September 3, 2019	September 19, 2019	100%	0 days	2 days	0 days																	
613	Mobilization	7 days	7 days	NA	NA	October 8, 2019	October 15, 2019	June 15, 2020	June 22, 2020	0%	0 days	0 days	203 days																	
614	Complete the Diveration of Existing Overhang Cable along the North Depressed Rd	0 days	0 days	NA	NA	October 15, 2019	October 15, 2019	June 23, 2020	June 23, 2020	0%	1 day		252 days																	
615	Drive Sheet Pile (380m) Prod. Rate 10m/team/day	38 days	38 days	NA		October 16, 2019	November 28, 2019	June 23, 2020	August 7, 2020	0%	0 days	1 days	203 days																	
616	Pumping Test	21 days	21 days	NA	NA	November 29, 2019	December 23, 2019	August 8, 2020	September 1, 2020	0%	0 days	1 days	203 days																	
617	CH1560 - CH1640	264 days	264 days	NA	NA	December 24, 2019	November 14, 2020	September 2, 2020	December 16, 2021	0%	203 days		203 days																	
618	Excavation - Prod Rate: 240m3/d/team. (~26,663m3). 1 team	112 days	112 days	NA	NA	December 24, 2019	May 15, 2020	September 2, 2020	January 16, 2021	0%	0 days	1 days	203 days																	
619	Rock fill - Prod. Rate: 160m3/d/team (1,807m3)	12 days	12 days	NA	NA	May 14, 2020	May 27, 2020	January 15, 2021	January 28, 2021	0%	0 days	1 days	203 days																	
620	Blinding	1 day	1 day	NA	NA	May 28, 2020	May 28, 2020	January 29, 2021	January 29, 2021	0%	0 days	0 days	203 days																	
621	Base Slab - 4 bays. Prod. Rate: 14d/team/bay include pipe laying. 1 team	56 days	56 days	NA	NA	May 29, 2020	August 4, 2020	January 30, 2021	April 12, 2021	0%	0 days	3 days	203 days																	
622	Wall - 4 bays. Prod. Rate: 14d/bay/team. 1 team	56 days	56 days	NA	NA	July 3, 2020	September 5, 2020	June 26, 2021	August 31, 2021	0%	0 days	3 days	292 days																	
623	Emergency walkway & median barrier installation	18 days	18 days	NA	NA	September 7, 2020	September 26, 2020	October 11, 2021	November 1, 2021	0%	0 days	0 days	324 days																	
624	Utility ducting laying (by others)	10 days	10 days	NA	NA	September 28, 2020	October 10, 2020	November 2, 2021	November 12, 2021	0%	0 days	0 days	324 days																	
625	Pavement work	5 days	5 days	NA	NA	October 12, 2020	October 16, 2020	November 13, 2021	November 18, 2021	0%	0 days	0 days	324 days																	
626	Parapet installation	24 days	24 days	NA	NA	October 17, 2020	November 14, 2020	November 19, 2021	December 16, 2021	0%	32 days	0.5 days	324 days																	
627	CH1640 - CH1720	208 days	208 days	NA	NA	January 22, 2021	January 18, 2021	January 18, 2021	March 1, 2022	0%	203 days		203 days																	
628	Excavation - Prod Rate: 240m3/d/team. 1 team (10,926m3) (Remaining)	46 days	46 days	NA	NA	May 16, 2020	July 10, 2020	January 18, 2021	March 15, 2021	0%	0 days	1 days	203 days																	
629	Rock fill - Prod. Rate: 160m3/d/team (2,203m3)	20 days	20 days	NA	NA	July 11, 2020	August 3, 2020	March 16, 20,																						

22092019_Revised Programme with Progress Update as of 22-Sep-19																													
ID	Task Name	Duration	Remaining Duration	Actual Start	Actual Finish	Plan Start	Plan Finish	Late Start	Late Finish	Physical % Complete	Free Slack	Time Risk Allowances (TRA)	Total Slack	2019															
														H1	H2	2020	H1	H2	2021	H1	H2	2022	H1	H2	2023	H1	H2	2024	H1
657	Base Slab - 3 bays. Prod. Rate: 14d/team/bay include pipe laying. 1 team	42 days	42 days	NA	NA	June 29, 2021	August 17, 2021	August 26, 2021	October 16, 2021	0%	0 days	2 days	49 days		Sun September 22														
658	Wall - 3 bays. Prod. Rate: 14d/bay/team. 1 team	42 days	42 days	NA	NA	August 2, 2021	September 18, 2021	September 29, 2021	November 18, 2021	0%	0 days	1 days	49 days																
659	Top Slab - 3 bays. Prod. Rate: 10d/bay/team. 1 team	30 days	30 days	NA	NA	September 3, 2021	October 9, 2021	November 3, 2021	December 7, 2021	0%	0 days	1 days	49 days																
660	Backfill & extract sheet pile (CH1720 to CH1850)	12 days	12 days	NA	NA	October 11, 2021	October 25, 2021	December 8, 2021	December 21, 2021	0%	0 days	0 days	49 days																
661	Access Allow for EMSD Third District Cooling System Contractor for CH1720-CH1850 Pipe Laying	0 days	0 days	NA	NA	October 25, 2021	October 25, 2021	March 1, 2022	March 1, 2022	0%	127 days		127 days																
662	Utility ducting laying (by others)	10 days	10 days	NA	NA	October 26, 2021	November 5, 2021	December 22, 2021	January 5, 2022	0%	0 days	1 day	49 days																
663	Pavement work	5 days	5 days	NA	NA	November 6, 2021	November 11, 2021	January 6, 2022	January 11, 2022	0%	0 days	1 day	49 days																
664	Underpass & South Depressed Road CH1850-2000 - 7 bays	650 days	650 days	NA	NA	October 7, 2019	December 11, 2021	April 2, 2020	February 14, 2022	0%	49 days		49 days																
665	Ground Monitoring Works	14 days	14 days	NA	NA	October 7, 2019	October 20, 2019	April 2, 2020	April 15, 2020	0%	0 days	0 days	178 days																
666	Mobilization of plant and materials	15 days	15 days	NA	NA	January 29, 2020	February 14, 2020	April 16, 2020	May 5, 2020	0%	35 days	0 days	63 days																
667	Foundation Construction	90 days	90 days	NA	NA	March 27, 2020	July 18, 2020	May 6, 2020	August 20, 2020	0%	0 days	1 day	28 days																
668	Mobilization of plant and material (sheet pile)	6 days	6 days	NA	NA	July 15, 2020	July 21, 2020	August 17, 2020	August 22, 2020	0%	0 days	0 days	28 days																
669	Drive sheet pile ( 360m) Prod. Rate 10m/team/day	36 days	36 days	NA	NA	July 22, 2020	September 1, 2020	August 24, 2020	October 6, 2020	0%	0 days	0.5 days	28 days																
670	Pumping Test	21 days	21 days	NA	NA	September 2, 2020	September 25, 2020	October 7, 2020	October 31, 2020	0%	0 days	0 days	28 days																
671	CH1850 - CH1920	349 days	349 days	NA	NA	September 26, 20...	November 29, 2021	November 2, 2020	January 28, 2022	0%	28 days		28 days																
672	Excavation - Prod. Rate: 240m3/d/team. 1 team (23,154m3)	96 days	96 days	NA	NA	September 26, 2020	January 22, 2021	November 2, 2020	February 27, 2021	0%	0 days	1 day	28 days																
673	Rock fill - Prod. Rate: 160m3/d/team (1,745m3)	11 days	11 days	NA	NA	January 16, 2021	January 28, 2021	February 22, 2021	March 5, 2021	0%	0 days	0 days	28 days																
674	Blinding	1 day	1 day	NA	NA	January 29, 2021	January 29, 2021	March 6, 2021	March 6, 2021	0%	0 days	0 days	28 days																
675	Base Slab - 3 bays. Prod. Rate: 14d/team/bay include pipe laying. 1 team	42 days	42 days	NA	NA	January 30, 2021	March 23, 2021	March 8, 2021	April 28, 2021	0%	0 days	0.5 days	28 days																
676	Wall - 3 bays. Prod. Rate: 14d/bay/team. 1 team	42 days	42 days	NA	NA	March 8, 2021	April 28, 2021	September 29, 2021	November 18, 2021	0%	0 days	0.5 days	168 days																
677	Top Slab - 3 bays. Prod. Rate: 10d/bay/team. 1 team	30 days	30 days	NA	NA	April 13, 2021	May 18, 2021	November 3, 2021	December 7, 2021	0%	0 days	0.5 days	168 days																
678	Emergency walkway & median barrier installation	18 days	18 days	NA	NA	June 5, 2021	June 26, 2021	December 24, 2021	January 17, 2022	0%	119 days	0 days	168 days																
679	Utility ducting laying (by others)	10 days	10 days	NA	NA	September 28, 2020	October 10, 2020	November 2, 2021	November 12, 2021	0%	0 days	0 days	324 days																
680	Pavement work	5 days	5 days	NA	NA	November 12, 2021	November 17, 2021	January 12, 2022	January 17, 2022	0%	0 days	0 days	49 days																
681	Parapet installation	10 days	10 days	NA	NA	November 18, 2021	November 29, 2021	January 18, 2022	January 28, 2022	0%	0 days	0 days	49 days																
682	CH1920 - CH2000	359 days	359 days	NA	NA	September 28, 20...	December 11, 2021	April 14, 2021	February 14, 2022	0%	49 days		49 days																
683	Excavation - Prod. Rate: 240m3/d/team. 1 team (16,396m3)	68 days	68 days	NA	NA	January 23, 2021	April 19, 2021	April 14, 2021	July 6, 2021	0%	0 days	1 day	63 days																
684	Blinding	1 day	1 day	NA	NA	April 20, 2021	April 20, 2021	July 7, 2021	July 7, 2021	0%	0 days	0 days	63 days																
685	Base Slab - 4 bays. Prod. Rate: 14d/team/bay include pipe laying. 1 team	56 days	56 days	NA	NA	March 24, 2021	June 2, 2021	April 29, 2021	July 7, 2021	0%	0 days	1 day	28 days																
686	Wall - 4 bays. Prod. Rate: 14d/bay/team. 1 team	56 days	56 days	NA	NA	April 13, 2021	June 19, 2021	July 10, 2021	September 13, 2021	0%	0 days	1 day	72 days																
687	Backfill & extract sheet pile (CH1850 to CH2000)	18 days	18 days	NA	NA	June 21, 2021	July 12, 2021	September 14, 2021	October 6, 2021	0%	0 days	0 days	72 days																
688	Emergency walkway & median barrier installation	18 days	18 days	NA	NA	June 21, 2021	July 12, 2021	January 8, 2022	January 28, 2022	0%	117 days	0 days	166 days																
689	Utility ducting laying (by others)	10 days																											

22092019_Revised Programme with Progress Update as of 22-Sep-19																														
ID	Task Name	Duration	Remaining Duration	Actual Start	Actual Finish	Plan Start	Plan Finish	Late Start	Late Finish	Physical % Complete	Free Slack	Time Risk Allowances (TRA)	Total Slack	2019	H1	H2	2020	H1	H2	2021	H1	H2	2022	H1	H2	2023	H1	H2	2024	H1
715	Concrete infill between profile barrier	2 days	2 days	NA	NA	September 11, 2021	September 13, 2021	February 19, 2022	February 21, 2022	0%	95 days	0 days	129 days			Sun September 22														
716	Road pavement	5 days	5 days	NA	NA	January 10, 2022	January 14, 2022	February 22, 2022	February 26, 2022	0%	33 days	0 days	34 days																	
717	Install street furniture	2 days	2 days	NA	NA	February 26, 2022	February 28, 2022	February 28, 2022	March 1, 2022	0%	1 day	0 days	1 day																	
718	Planned Completion for Section 1	0 days	0 days	NA	NA	March 1, 2022	March 1, 2022	March 1, 2022	March 1, 2022	0%	0 days	0 days	0 days																	
719	Section 2	325 days	325 days	NA	NA	April 22, 2020	May 26, 2021	May 14, 2020	June 2, 2021	0%	6 days		6 days																	
720	Construction of Precast Box Culvert (at fabrication yard)	130 days	130 days	NA	NA	April 22, 2020	September 24, 2020	May 14, 2020	October 16, 2020	0%	7 days	1 day	17 days																	
721	DCS Seawater Intake Box Culvert (Precast)	243 days	243 days	NA	NA	July 30, 2020	May 25, 2021	August 11, 2020	June 1, 2021	0%	6 days		6 days																	
722	Part 2A - CHB.30-83 (53m)	126 days	126 days	NA	NA	July 30, 2020	December 29, 2020	August 11, 2020	January 11, 2021	0%	10 days		10 days																	
723	Temporary ELS & Excavation	30 days	30 days	NA	NA	July 30, 2020	August 28, 2020	August 11, 2020	September 9, 2020	0%	0 days	1 days	12 days																	
724	Trim formation layer	30 days	30 days	NA	NA	August 29, 2020	October 5, 2020	September 10, 2020	October 16, 2020	0%	0 days	1 days	10 days																	
725	Lowering precast box culvert (7 cells)	44 days	44 days	NA	NA	October 6, 2020	November 26, 2020	October 17, 2020	December 8, 2020	0%	0 days	2 days	10 days																	
726	Remove struts and backfilling	26 days	26 days	NA	NA	November 27, 2020	December 29, 2020	December 9, 2020	January 11, 2021	0%	0 days	1 days	10 days																	
727	Part 1 - CHB.5-30 (25m)	117 days	117 days	NA	NA	December 30, 2020	May 25, 2021	January 12, 2021	June 1, 2021	0%	6 days		6 days																	
728	Temporary ELS & Excavation	31 days	31 days	NA	NA	December 30, 2020	February 4, 2021	January 12, 2021	February 19, 2021	0%	0 days	1 days	10 days																	
729	Trim formation layer	26 days	26 days	NA	NA	February 5, 2021	March 10, 2021	February 20, 2021	March 22, 2021	0%	0 days	1 days	10 days																	
730	Lowering precast box culvert (3 cells)	40 days	40 days	NA	NA	March 11, 2021	April 29, 2021	March 23, 2021	May 12, 2021	0%	4 days	2 days	10 days																	
731	Remove struts and backfilling	16 days	16 days	NA	NA	May 6, 2021	May 25, 2021	May 13, 2021	June 1, 2021	0%	0 days	1 days	6 days																	
732	Planned Completion for Section 2	1 day	1 day	NA	NA	May 26, 2021	May 26, 2021	June 2, 2021	June 2, 2021	0%	0 days	0 days	6 days																	
733	Section 3	408 days	408 days	NA	NA	June 16, 2020	October 28, 2021	June 20, 2020	May 29, 2024	0%	4 days		4 days																	
734	Part 2C - Lift LT3 & LT4	291 days	291 days	NA	NA	June 16, 2020	June 8, 2021	June 20, 2020	May 29, 2024	0%	4 days		4 days																	
735	Mobilization of plant and materials	22 days	22 days	NA	NA	June 16, 2020	July 13, 2020	June 20, 2020	July 17, 2020	0%	0 days	1 days	4 days																	
736	Foundation Construction	49 days	49 days	NA	NA	July 14, 2020	September 8, 2020	July 18, 2020	September 12, 2020	0%	0 days	2 days	4 days																	
737	Slab and shaft	33 days	33 days	NA	NA	September 9, 2020	October 19, 2020	September 14, 2020	October 23, 2020	0%	0 days	1 days	4 days																	
738	E & M installation	65 days	65 days	NA	NA	February 23, 2021	May 13, 2021	February 27, 2021	May 18, 2021	0%	0 days	3 days	4 days																	
739	Lift installation (LT3 & LT4)	101 days	101 days	NA	NA	October 20, 2020	February 22, 2021	October 24, 2020	February 26, 2021	0%	0 days	5 days	4 days																	
740	CLP Meter Installation	0 days	0 days	NA	NA	February 1, 2021	February 1, 2021	May 29, 2024	May 29, 2024	0%	1214 d...		1214 d...																	
741	EMSD Submission Form 5 for Lift Inspection	0 days	0 days	NA	NA	March 1, 2021	March 1, 2021	October 5, 2021	October 5, 2021	0%	0 days		218 days																	
742	EMSD Lift Inspection	0 days	0 days	NA	NA	March 14, 2021	March 14, 2021	October 19, 2021	October 19, 2021	0%	0 days		218 days																	
743	Issuance of Lift Use Permit	0 days	0 days	NA	NA	March 29, 2021	March 29, 2021	November 2, 2021	November 2, 2021	0%	213 days		218 days																	
744	Testing & commissioning	21 days	21 days	NA	NA	May 14, 2021	June 8, 2021	May 20, 2021	June 12, 2021	0%	0 days	1 days	4 days																	
745	Footpath	27 days	27 days	NA	NA	June 9, 2021	July 12, 2021	June 15, 2021	July 16, 2021	0%	0 days	1 days	4 days																	
746	Open Space within Part 2C	90 days	90 days	NA	NA	July 13, 2021	October 28, 2021	July 17, 2021	November 2, 2021	0%	0 days	4 days	4 days																	
747	Planned Completion for Section 3	0 days	0 days	NA	NA	October 28, 2021	October 28, 2021	November 2, 2021	November 2, 2021	0%	0 days	0 days	4 days																	
748	Section 4 (Subject to Excision)	185 days	185 days	NA																										

22092019_Revised Programme with Progress Update as of 22-Sep-19																								
ID	Task Name	Duration	Remaining Duration	Actual Start	Actual Finish	Plan Start	Plan Finish	Late Start	Late Finish	Physical % Complete	Free Slack	Time Risk Allowances (TRA)	Total Slack	2019	2020	2021	2022	2023	2024					
780	Asbesto Survey (PS Cl. 2.04(9))	8 days	0 days	August 16, 2019	August 23, 2019	August 16, 2019	August 23, 2019	August 16, 2019	August 23, 2019	100%	0 days	0 days	0 days											
781	Demolish of abandoned Fire Service Station	50 days	50 days	NA	NA	November 28, 2019	January 31, 2020	March 10, 2020	May 13, 2020	0%	65 days	1 day	82 days											
782	Ground Investigation	50 days	50 days	NA	NA	November 26, 2019	January 29, 2020	May 11, 2020	July 9, 2020	0%	131 days		131 days											
783	GI Work	50 days	50 days	NA	NA	November 26, 2019	January 29, 2020	May 11, 2020	July 9, 2020	0%	131 days	0.5 days	131 days											
784	Rising Main	765 days	765 days	NA	NA	July 10, 2020	February 1, 2023	July 10, 2020	May 30, 2023	0%	0 days		0 days											
785	Part 1 - CHA660-1097.77 - 2x160mm dia (~438m)	146 days	146 days	NA	NA	July 10, 2020	January 2, 2021	July 10, 2020	January 2, 2021	0%	0 days	7 days	0 days											
786	Part 9A - CHA32-71 - 2x160mm dia (~39m) (KD5)	211 days	211 days	NA	NA	January 4, 2021	September 17, 2021	January 4, 2021	September 17, 2021	0%	0 days	30 days	0 days											
787	Part 9B Rising Main	211 days	211 days	NA	NA	January 4, 2021	September 17, 2021	March 11, 2021	November 23, 2021	0%	49 days	30 days	54 days											
788	Part 3B - CHA418-443 - 2x160mm dia (~25m) (KD7)	365 days	365 days	NA	NA	March 5, 2021	May 27, 2022	March 11, 2021	June 2, 2022	0%	0 days	50 days	5 days											
789	Part 9 - CHA0-363 & 71-363 - 2x160mm dia. (~324m) (KD4)	126 days	126 days	NA	NA	August 31, 2021	January 31, 2022	August 31, 2021	January 31, 2022	0%	0 days	15 day	0 days											
790	Part 8 - CHA363-418&443-452 - 2x160mm dia (~64m)	150 days	150 days	NA	NA	February 4, 2022	August 4, 2022	September 2, 2022	March 3, 2023	0%	79 days	0 days	174 days											
791	Part 3A - CH452-660 - 2x160mm dia (~208m)	69 days	69 days	NA	NA	November 9, 2022	February 1, 2023	March 4, 2023	May 30, 2023	0%	0 days	1 day	95 days											
792	Allow Access for EMSD third District Cooling System Contractor for DCS Pipeline Laying at Parts 3A, 3B, 8, 9 and 9A	0 days	0 days	NA	NA	February 1, 2023	February 1, 2023	May 30, 2023	May 30, 2023	0%	118 days		118 days											
793	Underground Drainage	416 days	416 days	NA	NA	February 16, 2021	July 11, 2022	March 5, 2021	September 24, 20...	0%	15 days		15 days											
794	Procurement of Stormwater Drainage Pipes	90 days	90 days	NA	NA	February 16, 2021	May 16, 2021	March 5, 2021	June 2, 2021	0%	0 days		17 days											
795	Stormwater Drainage	308 days	308 days	NA	NA	May 17, 2021	May 28, 2022	June 3, 2021	September 24, 20...	0%	14 days		14 days											
796	CH1000 - CH1087 (~92.5m, 2 M/H)	16 days	16 days	NA	NA	November 24, 2021	December 11, 2021	November 24, 2021	December 11, 2021	0%	0 days	1 days	0 days											
797	CH1087 - CH1189.4 (~210m, 9 M/H)	24 days	24 days	NA	NA	June 3, 2021	July 2, 2021	June 3, 2021	July 2, 2021	0%	0 days	1 days	0 days											
798	CH1189.4 - CH1394 (~167m, 3 MH) - Bridge D3	24 days	24 days	NA	NA	May 29, 2021	June 26, 2021	September 11, 2021	October 11, 2021	0%	18 days	0.5 days	88 days											
799	CH1394 - CH1444.7 (~40m, 3 M/H) - S. Ramp	21 days	21 days	NA	NA	July 20, 2021	August 12, 2021	October 12, 2021	November 5, 2021	0%	70 days	0 days	70 days											
800	CH1444.7 - CH1560 (~222m, 10 M/H) - Rd D3	35 days	35 days	NA	NA	May 20, 2021	June 30, 2021	October 25, 2021	December 3, 2021	0%	130 days	0.5 days	130 days											
801	CH1560 - CH1720 (~239m, 8 M/H) - N.D. Rd	14 days	14 days	NA	NA	May 17, 2021	June 2, 2021	April 19, 2022	May 4, 2022	0%	0 days	0 days	273 days											
802	CH1720 - CH1920 (~450.7m, 13 M/H) Underpass	90 days	90 days	NA	NA	June 3, 2021	September 17, 2021	May 5, 2022	August 19, 2022	0%	0 days	1 day	273 days											
803	CH1920 - CH2000 (~160m, 6 M/H) S.D. Rd	14 days	14 days	NA	NA	September 18, 2021	October 6, 2021	August 20, 2022	September 5, 2022	0%	0 days	0 days	273 days											
804	CH2000 - CH2060 (~84m, 2 M/H) - S.D. Rd	14 days	14 days	NA	NA	October 7, 2021	October 23, 2021	September 6, 2022	September 22, 2022	0%	0 days	0 days	273 days											
805	CH2060 - CH2118.93 (~50.7m, 2 M/H) - Rd D3	14 days	14 days	NA	NA	June 19, 2021	July 6, 2021	September 8, 2022	September 24, 2022	0%	0 days	0 days	366 days											
806	CH100 - CH147 (~169m, 5 M/H) - L12 Road	35 days	35 days	NA	NA	April 19, 2022	May 28, 2022	June 25, 2022	August 5, 2022	0%	0 days	0.5 days	57 days											
807	Open Space & Promenade (~457m, 11 M/H)	70 days	70 days	NA	NA	January 19, 2022	April 14, 2022	March 30, 2022	June 24, 2022	0%	0 days	1 day	57 days											
808	Sewerage Drainage	392 days	392 days	NA	NA	March 16, 2021	July 11, 2022	April 4, 2021	September 16, 20...	0%	15 days		15 days											
809	Procurement of Sewerage Pipes	90 days	90 days	NA	NA	March 16, 2021	June 13, 2021	April 4, 2021	July 2, 2021	0%	19 days		19 days											
810	CH1000 - CH1087 (~68m, 3 M/H)	18 days	18 days	NA	NA	November 22, 2021	December 11, 2021	November 22, 2021	December 11, 2021	0%	0 days	1 days	0 days											
811	CH1087 - CH1189.4 (~47m, 1 no M/H)	12 days	12 days	NA	NA	July 3, 2021	July 16, 2021	July 3, 2021	July 16, 2021	0%	0 days	1 days	0 days											
812	CH100 - CH147 (~156m, 6 M/H) - L12 Road	35 days	35 days	NA	NA	May 30, 2022	July 11, 2022	August 6, 2022	September 16, 2022	0%	0 days	0.5 days	57 days											
813	Underground Watermain	392 days	392 days	NA	NA	May 29, 2021	September 19, 20...	July 16, 2021	October 14, 2022	0%	20 days		20 days											
814	Fresh Watermain	310 days	310 days	NA	NA	May 29, 2021	June 13, 2022	July 17, 2021	September 22, 20...	0%	40 days		40 days											
815	CH1000 - CH1087 (~191m) Rd D3	20 days	20 days	NA	NA	August 31, 2021	September 23, 2021	August 31, 2021	September 23, 2021	0%	0 days	1 days	0 days											
816	CH1087 - CH1189.4 (~212m) - N. Ramp	4 days	4 days	NA	NA	July 17, 2021	July 21, 2021	July 17, 2021	July 21, 2021	0%	0 days	0 days	0 days											
817	CH1189.4 - CH1394 (~409.2m) - Bridge D3	40 days	40 days	NA	NA	May 29, 2021	July 16, 2021	August 21, 2021	October 8, 2021	0%	0 days	0.5 days	70 days											
818	CH1394 - CH1444.7 (~101.4m) - S. Ramp	10 days	10 days	NA	NA	June 1, 2021	June 11, 2021	October 9, 2021	October 21, 2021	0%	0 days	0 days	108 days											
819	CH1444.7 - CH1560 (~165m) - Rd D3																							



22092019_Revised Programme with Progress Update as of 22-Sep-19																														
ID	Task Name	Duration	Remaining Duration	Actual Start	Actual Finish	Plan Start	Plan Finish	Late Start	Late Finish	Physical % Complete	Free Slack	Time Risk Allowances (TRA)	Total Slack	2019	H1	H2	2020	H1	H2	2021	H1	H2	2022	H1	H2	2023	H1	H2	2024	H1
906	Deck (4 bays) & link bridge 18d/bay	72 days	72 days	NA	NA	July 9, 2021	October 2, 2021	August 11, 2021	November 5, 2021	0%	0 days	1 day	28 days				Sun September 22													
907	Secondary Upstand Beam	14 days	14 days	NA	NA	September 24, 2021	October 11, 2021	December 11, 2021	December 29, 2021	0%	0 days	0 days	65 days																	
908	Dismantle falsework	5 days	5 days	NA	NA	October 29, 2021	November 3, 2021	January 31, 2022	February 8, 2022	0%	49 days	0 days	77 days																	
909	Part 2A - CH2007-2060 (53m) 3 bays	136 days	136 days	NA	NA	July 22, 2021	January 3, 2022	September 8, 2021	February 8, 2022	0%	28 days		28 days																	
910	Pier (3sets x 3nos) within CH2007-2060. 1 team	45 days	45 days	NA	NA	July 22, 2021	September 11, 2021	September 8, 2021	November 2, 2021	0%	0 days	0.5 days	41 days																	
911	Falsework erection	7 days	7 days	NA	NA	September 13, 2021	September 20, 2021	November 3, 2021	November 10, 2021	0%	13 days	0 days	41 days																	
912	Deck (3 bays) 18d/bay	54 days	54 days	NA	NA	October 4, 2021	December 6, 2021	November 6, 2021	January 11, 2022	0%	0 days	1 day	28 days																	
913	Secondary Upstand Beam	12 days	12 days	NA	NA	November 25, 2021	December 8, 2021	December 30, 2021	January 13, 2022	0%	0 days	0 days	28 days																	
914	Dismantle falsework	5 days	5 days	NA	NA	December 28, 2021	January 3, 2022	January 31, 2022	February 8, 2022	0%	0 days	0 days	28 days																	
915	Part 2A - CH2060-2119 (59m) 3 bays	299 days	299 days	NA	NA	June 16, 2020	June 18, 2021	June 29, 2020	November 20, 2021	0%	10 days		10 days																	
916	Mobilization of plant and material	36 days	36 days	NA	NA	June 16, 2020	July 29, 2020	June 29, 2020	August 10, 2020	0%	0 days	2 days	10 days																	
917	Foundation Construction	90 days	90 days	NA	NA	July 30, 2020	October 27, 2020	March 11, 2021	June 8, 2021	0%	63 days	1 day	224 days																	
918	Pier (3sets x 3nos) within CH2060-2119. 1 team	45 days	45 days	NA	NA	December 30, 2020	February 24, 2021	June 9, 2021	August 2, 2021	0%	0 days	0.5 days	129 days																	
919	Falsework erection	7 days	7 days	NA	NA	February 25, 2021	March 4, 2021	August 3, 2021	August 10, 2021	0%	0 days	0 days	129 days																	
920	Deck (3 bays) 18d/bay	54 days	54 days	NA	NA	March 5, 2021	May 11, 2021	August 11, 2021	October 15, 2021	0%	0 days	1 day	129 days																	
921	Secondary Upstand Beam	12 days	12 days	NA	NA	May 12, 2021	May 26, 2021	October 16, 2021	October 29, 2021	0%	0 days	0 days	129 days																	
922	Dismantle falsework	5 days	5 days	NA	NA	June 12, 2021	June 18, 2021	November 16, 2021	November 20, 2021	0%	0 days	0 days	129 days																	
923	Installation of Glass Balustrade	42 days	42 days	NA	NA	December 9, 2021	January 29, 2022	March 2, 2022	April 23, 2022	0%	0 days	0.5 days	65 days																	
924	Part 2A - Lift LT1 & LT2	330 days	330 days	NA	NA	January 31, 2022	March 9, 2023	April 25, 2022	May 30, 2023	0%	64 days		64 days																	
925	Mobilization of plant and materials	15 days	15 days	NA	NA	January 31, 2022	February 19, 2022	April 25, 2022	May 11, 2022	0%	0 days	0 days	65 days																	
926	Foundation Construction	43 days	43 days	NA	NA	February 17, 2022	April 8, 2022	May 9, 2022	June 28, 2022	0%	0 days	0.5 days	65 days																	
927	RC Structure	28 days	28 days	NA	NA	April 9, 2022	May 14, 2022	June 29, 2022	August 1, 2022	0%	0 days	0.5 days	65 days																	
928	Lift installation (LT1 & LT2)	90 days	90 days	NA	NA	July 27, 2022	November 11, 2022	October 14, 2022	January 31, 2023	0%	0 days	1 day	65 days																	
929	E & M installation	60 days	60 days	NA	NA	November 12, 2022	January 25, 2023	February 1, 2023	April 15, 2023	0%	0 days	1 day	65 days																	
930	Testing & commissioning	12 days	12 days	NA	NA	January 26, 2023	February 8, 2023	April 17, 2023	April 29, 2023	0%	0 days	0 days	65 days																	
931	CLP Meter Installation	0 days	0 days	NA	NA	January 2, 2023	January 2, 2023	January 2, 2023	January 2, 2023	0%	0 days		0 days																	
932	EMSD Submission Form 5 for Lift Inspection	0 days	0 days	NA	NA	February 8, 2023	February 8, 2023	May 2, 2023	May 2, 2023	0%	0 days		82 days																	
933	EMSD Lift Inspection	0 days	0 days	NA	NA	February 22, 2023	February 22, 2023	May 16, 2023	May 16, 2023	0%	0 days		82 days																	
934	Issuance of Lift Use Permit	0 days	0 days	NA	NA	March 9, 2023	March 9, 2023	May 30, 2023	May 30, 2023	0%	82 days		82 days																	
935	Staircase ST1	60 days	60 days	NA	NA	May 16, 2022	July 26, 2022	August 2, 2022	October 13, 2022	0%	0 days	1 day	65 days																	
936	Open Space & Promenade	561 days	561 days	NA	NA	July 13, 2021	May 30, 2023	October 7, 2021	May 30, 2023	0%	0 days		0 days																	
937	Open Space & Promenade (From Northern End - CH1720)	506 days	506 days	NA	NA	September 15, 2021	May 30, 2023	October 11, 2021	May 30, 2023	0%	0 days		0 days																	
938	Observation Deck	210 days	210 days	NA	NA	June 4, 2022	February 13, 2023	June 4, 2022	May 30, 2023	0%	0 days		0 days																	
939	Foundation Construction	60 days	60 days	NA	NA	June 4, 2022	August 13, 2022	June 4, 2022	August 13, 2022	0%	0 days																			

22092019\_Revised Programme with Progress Update as of 22-Sep-19

ID	Task Name	Duration	Remaining Duration	Actual Start	Actual Finish	Plan Start	Plan Finish	Late Start	Late Finish	Physical % Complete	Free Slack	Time Risk Allowances (TRA)	Total Slack																												
968	Trim and form formation level within Open Space & Promenade area	14 days	14 days	NA	NA	March 4, 2022	March 19, 2022	June 1, 2022	June 17, 2022	0%	0 days	0 days	72 days	2019	H1		H2	2020	H1		H2	2021	H1		H2	2022	H1		H2	2023	H1		H2	2024	H1		H2				
969	Paving work	30 days	30 days	NA	NA	March 21, 2022	April 28, 2022	June 18, 2022	July 23, 2022	0%	0 days	0.5 days	72 days																												
970	ABWF, E&M work and street furniture	50 days	50 days	NA	NA	April 29, 2022	June 27, 2022	July 28, 2022	September 24, 2022	0%	0 days	1 day	75 days																												
971	CLP Meter Installation	0 days	0 days	NA	NA	June 27, 2022	June 27, 2022	May 1, 2023	May 1, 2023	0%	163 days		307 days																												
972	FSD Form 501 Submission for FS Inspection	0 days	0 days	NA	NA	December 8, 2022	December 8, 2022	May 1, 2023	May 1, 2023	0%	0 days		144 days																												
973	FSD Inspection	0 days	0 days	NA	NA	December 22, 2022	December 22, 2022	May 16, 2023	May 16, 2023	0%	0 days		144 days																												
974	Issuance of FS Certificate	0 days	0 days	NA	NA	January 6, 2023	January 6, 2023	May 30, 2023	May 30, 2023	0%	144 days		144 days																												
975	Landscaping works	90 days	90 days	NA	NA	August 20, 2022	December 6, 2022	November 16, 2022	March 4, 2023	0%	72 days	1 day	72 days																												
976	Part 1, 2A, 2B - Road L12	238 days	238 days	NA	NA	August 11, 2022	May 30, 2023	October 6, 2022	May 30, 2023	0%	0 days		0 days																												
977	Trim road formation	3 days	3 days	NA	NA	August 11, 2022	August 13, 2022	October 6, 2022	October 8, 2022	0%	0 days	1 day	45 days																												
978	Lay sub base	7 days	7 days	NA	NA	August 15, 2022	August 22, 2022	October 10, 2022	October 17, 2022	0%	0 days	1 day	45 days																												
979	Lay kerb	12 days	12 days	NA	NA	August 23, 2022	September 5, 2022	October 18, 2022	October 31, 2022	0%	0 days	1 day	45 days																												
980	Construct pedestrian street/ footpath	14 days	14 days	NA	NA	September 6, 2022	September 22, 2022	November 1, 2022	November 16, 2022	0%	0 days	1 day	45 days																												
981	Install central median	14 days	14 days	NA	NA	September 23, 2022	October 11, 2022	November 17, 2022	December 2, 2022	0%	0 days	1 day	45 days																												
982	Concrete infill between profile barrier	7 days	7 days	NA	NA	October 12, 2022	October 19, 2022	December 3, 2022	December 10, 2022	0%	45 days	0 days	45 days																												
983	Road pavement	5 days	5 days	NA	NA	December 12, 2022	December 16, 2022	December 12, 2022	December 16, 2022	0%	0 days	0 days	0 days																												
984	Install street furniture	131 days	131 days	NA	NA	December 17, 2022	May 30, 2023	December 17, 2022	May 30, 2023	0%	0 days	6 days	0 days																												
985	Planned Completion for Section 6	0 days	0 days	NA	NA	May 30, 2023	May 30, 2023	May 30, 2023	May 30, 2023	0%	0 days	0 days	0 days																												
986	Section 7	365 days	365 days	NA	NA	March 6, 2023	May 29, 2024	March 6, 2023	May 29, 2024	0%	0 days		0 days																												
987	Establishment work for landscape softwork	365 days	365 days	NA	NA	March 6, 2023	May 29, 2024	March 6, 2023	May 29, 2024	0%	0 days	10 days	0 days																												
988	Planned Completion for Section 7	0 days	0 days	NA	NA	May 29, 2024	May 29, 2024	May 29, 2024	May 29, 2024	0%	0 days		0 days																												
989	Section 8 (Subject to Excision)	152 days	152 days	NA	NA	May 26, 2021	November 24, 2021	June 3, 2021	December 2, 2021	0%	7 days		7 days																												
990	Part 1 - DCS Intake Box Culvert - CHB. 0-5 (5m)	33 days	33 days	NA	NA	May 26, 2021	July 5, 2021	June 25, 2021	August 3, 2021	0%	0 days		25 days																												
991	Temporary ELS & Excavation	18 days	18 days	NA	NA	May 26, 2021	June 16, 2021	June 25, 2021	July 16, 2021	0%	0 days	2 days	25 days																												
992	Positioning of precast intake	5 days	5 days	NA	NA	June 17, 2021	June 22, 2021	July 17, 2021	July 22, 2021	0%	0 days	1 days	25 days																												
993	Remove struts and backfilling	10 days	10 days	NA	NA	June 23, 2021	July 5, 2021	July 23, 2021	August 3, 2021	0%	18 days	2 days	25 days																												
994	Part 2A - Diversion & abandon of extg DCS box culvert	152 days	152 days	NA	NA	May 26, 2021	November 24, 2021	June 3, 2021	December 2, 2021	0%	7 days		7 days																												
995	TTA,Temporary ELS & Excavation	51 days	51 days	NA	NA	May 26, 2021	July 26, 2021	June 3, 2021	August 3, 2021	0%	0 days	3 days	7 days																												
996	Diversion of existing DCS box culvert	26 days	26 days	NA	NA	July 27, 2021	August 25, 2021	August 4, 2021	September 2, 2021	0%	0 days	2 days	7 days																												
997	Break up existing box culvert (4 walls) + top slab	35 days	35 days	NA	NA	August 26, 2021	October 7, 2021	September 3, 2021	October 16, 2021	0%	0 days	2 days	7 days																												
998	Construct new walls at existing box culvert	20 days	20 days	NA	NA	October 8, 2021	November 1, 2021	October 18, 2021	November 9, 2021	0%	0 days	1 days	7 days																												
999	Abandon existing DCS box culvert	20 days	20 days	NA	NA	November 2, 2021	November 24, 2021	November 10, 2021	December 2, 2021	0%	0 days	1 days	7 days																												
1000	Planned Completion for Section 8	0 days	0 days	NA	NA	November 24, 2021	November 24, 2021	December 2, 2021	December 2, 2021	0%	0 days	0 days	7 days																												
1001	Section 9 (Subject to Excision)	174 days	174 days	NA	NA	November 21, 2020	June 25, 2021	November 30, 2020	July 5, 2021	0%	7 days		7 days																												
1002	Noise barrier fronting to 4B5 at Rd D3A & Bus Lay By ~80m	174 days	174 days	NA	NA	November 21, 2020	June 25, 2021	November 30, 2020	July 5, 2021	0%	7 days		7 days																												
1003	ELS & Excavation	18 days	18 days	NA	NA	November 21, 2020	December 11, 2020	November 30, 2020	December 19, 2020	0%	0 days	1 days	7 days																												
1004	Noise Barrier Foundation	75 days	75 days	NA	NA	December 12, 2020	March 16, 2021	December 21, 2020	March 24, 2021	0%	0 days	4 days	7 days																												
1005	CNP Application	28 days	28 days	NA	NA	January 16, 2021	February 12, 2021	February 25, 2021	March 24, 2021	0%	32 days		40 days																												
1006	Frame & Panel installation (Night Work)	81 days	81 days	NA	NA	March 17, 2021	June 25, 2021	March 25, 2021	July 5, 2021	0%	0 days	4 days	7 days																												
1007	Planned Completion for Section 9	0 days	0 days	NA	NA	June 25, 2021	June 25, 2021	July 5, 2021	July 5, 2021	0%	0 days	0.5 days	10 days																												
1008	Section 10 (Subject to Excision)	582 days	582 days	NA	NA	June 5, 2021	May 18, 2023	June 17, 2021	May 30, 2023	0%	9 days		9 days																												
1009	Decking for Underpass (Rd L14)	581 days	581 days	NA	NA	June 5, 2021	May 17, 2023	June 17, 2021	May 29, 2023	0%	9 days		9 days																												
1010	Support along U-through	225 days	225 days	NA	NA	June 5, 2021	March 7, 2022	June 17, 2021	March 17, 2022	0%	0 days	10 days	9 days																												
1011	Plinth installation along support	123 days	123 days	NA	NA	March 8, 2022	August 4, 2022	March 18, 2022	August 15, 2022	0%	0 days	6 days	9 days																												
1012	Placing of beam along underpass	90 days	90 days	NA	NA	September 7, 2022	December 23, 2022	September 19, 2022	January 4, 2023	0%	0 days	4 days	9 days																												
1013	Cover-up (Roof)	115 days	115 days	NA	NA	December 24, 2022	May 17, 2023	January 5, 2023	May 29, 2023	0%	0 days	5 days	9 days																												
1014	Planned Completion for Section 10	1 day	1 day	NA	NA	May 18, 2023	May 18, 2023	May 30, 2023	May 30, 2023	0%	0 days	0.5 days	12 days																												

Title: Revised Programme-ED/2018/01 with Progress Update as of 22-Sep-19

Critical

Critical Split

Critical Progress

Task

Split

Task Progress

Manual Task

Start-only

Finish-only

Duration-only

Baseline

Baseline Split

Baseline Milestone

Milestone

Summary Progress

Summary

Manual Summary

Project Summary

External Tasks

External Milestone

Inactive Task

Inactive Milestone

Inactive Summary

Deadline

Baseline Summary

Page 18