DRAINAGE SERVICES DEPARTMENT

CONTRACT NO. DC/2011/06

REPROVISIONING OF BOUNDARY PATROL ROAD AND ASSOCIATED SECURITY FACILITIES BETWEEN PING YUEN RIVER AND PAK FU SHAN AND DRAINAGE WORKS IN NORTH DISTRICT

MONTHLY EM&A REPORT FOR ADVANCED WORKS UNDER EP-430/2011 (JANUARY 2014)

PREPARED FOR
SANG HING CIVIL CONSTRUCTORS CO., LTD.

Quality Index

Date	Reference No.	Prepared By	Approval By
19 February 2014	TCS00599/12/600/R0201	Ben Tam Environmental Consultant	T. W. Tam Environmental Team Leader

Version	Date	Description
1	14 February 2014	First submission
2	19 February 2014	Amended against IEC's comments on 19 February 2014

ENVIRON

Ref.: DSDBPRNDEM00_0_0238L.14

19 February 2014

By Post and Fax (2959 6079)

Action-United Environmental Services & Consulting
Unit A, 20/F,
Gold King Industrial Building,
New Territories, Hong Kong

Attention: Mr. T.W. Tam

Dear Sir,

Re: Contract No. DC/2011/06
Reprovisioning of Boundary Patrol Road and Associated Security Facilities between Ping Yuen River and Pak Fu Shan and Drainage Works in North District
EM&A report for Advanced Works under EP-430/2011 (January 2014)

Reference is made to the Environmental Team's submission of the captioned report (Version 2) dated 19 February 2014 received through E-mail on 19 February 2014 for our review and comment.

Please be informed that we have no adverse comment on the captioned submission. We write to verify the captioned submission in accordance with Condition 5.4 in the captioned Environmental Permit.

Thank you for your kind attention and please do not hesitate to contact the undersigned should you have any queries.

Yours sincerely,

Roger Leung
Independent Environmental Checker

c.c.	DSD	Mr. Eric Y.M. Cheng	by fax: 2827 8700
	SHCCCL	Mr. Raymond W.M. Yau	by fax: 2403 1162

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EXECUTIVE SUMMARY

BREACHES OF ACTION AND LIMIT LEVELS

ES01. No environmental monitoring was conducted during the Reporting Period, no breaches of Action and Limit levels were therefore recorded.

REPORTING CHANGES

ES02. No reporting changes were made during the Reporting Period.

ENVIRONMENTAL COMPLAINTS LOG

ES03. No environmental complaint was registered during the Reporting Period. The complaint log is presented as follows:

Reporting Month	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
August 2012 to December 2013	0	0	Not Applicable
January 2014	0	0	Not Applicable

ENVIRONMENTAL NOTIFICATIONS, SUMMONS AND PROSECUTIONS

ES04. No environmental notifications, summons and successful prosecutions were registered during the Reporting Period.

ES05. No non-compliance with the regulatory requirements was identified in the site inspection during the Reporting Period, including the regular joint site inspection by the ER, IEC, ET and Contractor. Defects of minor environmental significance were sometimes identified and normally rectified in-situ or within the specified time prior to the next site inspection.

FORECAST OF IMPACT PREDICTIONS

ES06. Construction dust, noise and water quality continue to be the key environmental issues for the coming construction period.

RECOMMENDATIONS

ES07. The Contractor is reminded to fully comply with all the relevant regulatory environmental requirements, including environmental mitigation measures stipulated in all the environmental ordinances, EM&A Manual, EMP and the associated WMP, effluent discharge license and the chemical waste producer registration, etc.

ES08. Particular attention is drawn to full implementation of air quality mitigation measures, in particular construction dust suppression measures during dusty construction activities under dry and windy conditions.

ES09. In addition, full implementation of the required water quality mitigation measures is reminded to eliminate adverse water quality impacts generated from surfaces of haul roads, stock pile of excavated materials, etc. during wet season.

ES10. Moreover, construction noise mitigation measures shall also be implemented during noisy construction works.

ES11. Furthermore, mosquito control should be ongoing to perform to prevent mosquito breeding on site.

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LIST OF ANNEXES

1 BACKGROUND INFORMATION

1.1 DSD CONTRACT NO. DC/2011/06

1.1.1 Sang Hing Civil Contractors Company Limited (hereinafter "SHCCCL" or "the Contractor") has been awarded by Drainage Services Department of the HKSAR Government (hereinafter "DSD" or "the Engineer") since 31 March 2012 DSD Contract No. DC/2011/06 – Reprovisioning of Boundary Patrol Road and Associated Security Facilities between Ping Yuen River and Pak Fu Shan and Drainage Works in North District (hereafter "the Contract").

1.1.2 The Contract comprises:

A. ***Reprovisioning of Boundary Patrol Road and Associated Security Facilities between Ping Yuen River and Pak Fu Shan***, which is one of the two parts of Regulation of Shenzhen River Stage 4, i.e. the Advanced Works within the HKSAR to be implemented under Environmental Permit No. EP-430/2011 (hereinafter "EP-430/2011") (hereinafter "the Advanced Works under EP-430/2011" or "the Works"). The Works include:

1) Reprovisioning of approximately 4.3 kilometres (km) long and 3.5 metres (m) wide boundary patrol road between Ping Yuen River and Pak Fu Shan;
2) Reprovisioning of approximately 4.3 km long primary boundary fence with associated lighting and Fence Protection System between Ping Yuen River and Pak Fu Shan;
3) Reprovisioning of the Hong Kong Police Force Lo Fong Bridge Post; and
4) Construction of about 3.3 km long secondary boundary fence.

B. ***Drainage Works in North District to be implemented under Environmental Permit No. EP-277/2007/A***, which has been commenced in May 2012 and is scheduled to be completed by May 2013, including

1) Construction of about 400m of drainage channel at Man Uk Pin under Environmental Permit No. EP-277/2007/A (hereinafter "EP-277/2007/A");
2) The associated ancillary works including drainage and landscaping works.

C. ***Drainage Works in North District***, which is a non-designated project of drainage works at Ma Wat Wai in North District for construction of about 110 m of drainage channel at Ma Wat Wai.

1.1.3 Drawing of the area within the Works showing is shown in ***Annex A***, whereas project organization, environmental management structure and communication lines, including contacts of key personnel under the Contract as well as the 3-monthly rolling program covering the second month of the construction of the Works are shown in ***Annex B***.

1.1.4 Construction of the Advanced Works under EP-430/2011 has been commenced on 21 August 2012 after site clearance and the associated preparation works as well as completion of submission required under EP-430/2011. The Works is anticipated to be completed in August 2014 within 29 months.

1.2 CONCURRENT PROJECTS IN THE VICINITY OF THE WORKS

1.2.1 The following projects are anticipated to be carried out concurrently in the vicinity of the Works:

1) The River Modification Works within HKSAR, which is part of the Regulation of Shenzhen River Stage 4 and to be implemented under EP-430/2011, is scheduled for commencement in mid-2013.
2) The development of the proposed Liantang/Heung Yuen Wai Boundary Control Point (hereinafter "the LT/HYW BCP") and the associated works. It is anticipated that the construction of the LT/HYW BCP and connecting roads will commence at the end of 2013 and be completed in end 2018. The planned construction period for the resite of Chuk Yuen Village is from late 2010 to early 2012 for population intake by early 2013.
3) Construction of a Secondary Boundary Fence and New Sections of Primary Boundary fence and Patrol Road. Based on the advice from ArchSD, the latest tentative construction

programme shall be from end 2011 to early 2013 (section from Ng Tung River to Ping Yuen River) and from end 2011 to end 2013 (section from Pak Fu Shan to Lin Ma Hang Road).

4) Drainage Improvement in Northern New Territories, Package C (Remaining Works). The construction work is scheduled to commence in late 2012 and completed by 2016.

1.3 CUMULATIVE ENVIRONMENTAL IMPACTS

1.3.1 As concluded in the EIA report for Regulation of Shenzhen River Stage 4, adverse environmental impacts generated from the River Modification Works within HKSAR are predicted to be minimal provided the required environmental mitigation measures are fully implemented.

1.3.2 There is a potential of cumulative environmental impacts during construction phase, including construction dust, noise, water quality, waste, ecology and landscape and visual, to be generated from the concurrent works LT/HYW BCP and the associated works as well as construction of a secondary boundary fence and new sections of primary boundary fence and patrol road.

1.3.3 However, as the schedules and programs of those concurrent projects are subject to private initiatives and market-driven factors, it is not possible to assess the cumulative impact at this stage.

1.3.4 On the other hand, the Drainage Improvement in Northern New Territories, Package C (Remaining Works) project is subject to another future detailed EIA Study and detailed construction program is not available to date. The cumulative impact cannot be assessed at this stage. However, since the drainage improvement works is located at about 500 m from the Site and given its nature and scale of works, adverse cumulative environmental impacts are not anticipated.

2 SUMMARY OF EM&A REQUIREMENTS

2.1 CONSTRUCTION ACTIVITIES UNDER THE WORKS

2.1.1 Construction activities under the Works comprise:

1) Approximately 4,300 m of 3.5 m wide Boundary Patrol Road on filled embankment along the Shenzhen River from Ping Yuen River estuary and Pak Fu Shan, Ta Kwu Ling;
2) Approximately 4,300 m of Primary Boundary Fence with XPM mesh;
3) Approximately 3,300 m of Secondary Boundary Fence with XPM mesh;
4) Approximately 4,300 m of border security lighting system including the associated electrical and mechanical works;
5) 4 box culverts and 12 drainage pipes under the proposed Boundary Patrol Road, and the associated inlets and outlets;
6) Reconstruction of Lo Fong Bridge Post for Hong Kong Police Force;
7) Peripheral drainage system associated with the above items;
8) Irrigation systems including associated electrical and mechanical works;
9) Landscaping works and environmental mitigation works;
10) Other ancillary works associated with the above items;

2.1.2 The construction areas under the Works are divided into the following three portions:

1) Portion A – Area between CH_R 0+000 and 2+050 for reprovisioning of Boundary Patrol Road and the associated security facilities
2) Portion B – Area between CH_R 2+050 and 2+840 for reprovisioning of Boundary Patrol Road and the associated security facilities
3) Portion C – Area between CH_R 2+840 and 4+300 approximately for reprovisioning of Boundary Patrol Road and the associated security facilities

2.2 EM&A REQUIREMENTS FOR THE WORKS

CONSTRUCTION PHASE

2.2.1 The EIA report has assessed potential environmental impacts to be generated from the Works. Conclusions and recommendations for EM&A during construction of the Works are presented in the EIA report and the associated Updated EM&A Manual. They are summarized as follows.

2.2.2 Environmental monitoring and audit for air quality, construction noise, water quality, ecology, cultural heritage as well as landscape and visual is required during construction phase of the River Modification Works.

OPERATIONAL PHASE

2.2.3 No environmental monitoring and audit for air quality, construction noise, water quality, ecology, cultural heritage as well as landscape and visual is required during operational phase of the Works.

BASELINE MONITORING AND ENVIRONMENTAL QUALITY CRITERIA

2.2.4 Baseline monitoring is required for establishment of the environmental quality criteria, i.e. Action/ limit Levels, for the River Modification Works under EP-430/2010. The baseline monitoring was conducted upon confirmation of the acquirement of all access to the monitoring locations for air quality including 1-Hr and 24-Hr TSP and construction noise.

EVENT & ACTION PLAN

2.2.5 Event and Action Plan recommended in the EIA and the associated approved EM&A Manual will be implemented during River Modification Works under EP-430/2010 as a monitoring and response mechanism for handling exceedances of environmental standards during the construction phase in collaboration with relevant parties of other concurrent projects in the vicinity.

2.2.6 In addition, day-to-day site inspection and environmental audit by related parties of the environmental management under the Works is crucial to regularly review on compliance with legal and contractual requirements of the Works.

2.2.7 Equally important is proper handling of environmental complaint, enquiries and requests for information as appropriate.

SITE INSPECTION AND ENVIRONMENTAL AUDIT

2.2.8 The ET will undertake site inspection of on-site practices and procedures each month. Joint site inspection and environmental audit is also required to be conducted by related parties of the environmental management to verify the implementation status and evaluate the effectiveness and stability of the environmental mitigation measures, in collaboration with relevant parties of other concurrent projects in the vicinity.

2.2.9 Details of the scope and range of issues to be designed and addressed in the site inspection and environmental audit protocols are presented in Section 6.

ENVIRONMENTAL REPORTING OF THE WORKS

2.2.10 In order to ease environmental reporting of the Contract, it has been agreed among the Engineer, IEC, Contractor and ET that the environmental reporting for the Contract is split into three stand-alone reports, namely Environmental Report for Advanced Works under EP-430/2011, EM&A Report for Drainage Works under EP-277/2007/A and EM&A Report for Drainage Works at Ma Wat Wai. They will be prepared and submitted separately.

2.2.11 This is the ***seventeenth*** month of EM&A Monthly Report for the Works (herein after "this Report"), covering construction period from ***1*** to ***31 December 2013*** (hereinafter "the Reporting Period").

3 DATA MANAGEMENT AND DATA QA/QC CONTROL

3.1 The impact monitoring data is handled by the ET's systematic data recording and management, which complies with an in-house certified (ISO 9001:2000) Quality Management System. Standard Field Data Sheet (FDS) are used in the EM&A program.

3.2 Where appropriate, the monitoring data recorded in the equipment e.g. 1-Hour TSP meters and noise meters are downloaded directly at the end of each monitoring day. The downloaded monitoring data are input into a computerized database properly maintained by the ET. The laboratory results are input directly into the computerized database and QA/QC checked by personnel other than those who input the data.

3.3 For monitoring activities which require laboratory analysis, the responsible laboratory, ALS, follows the QA/QC requirements as set out under their HOKLAS scheme for all laboratory testing.

4 ENVIRONMENTAL LICENSES AND PERMITS

4.1 STATUS OF ENVIRONMENTAL LICENSES AND PERMIT

4.1.1 Status of environmental licenses and permit is summarized in the following ***Table 4-1***.

Table 4-1 Status of Environmental Licenses and Permit

Permit Type	Licenses / Permit No.	Date Issued by EPD	Expiry Date	Concerned Location	Status
Environmental Permit	EP-430/2011	09 Jul 2007	N.A.	Ping Yuen River	Valid
Notification pursuant to Section 3(1) of the Air Pollution Control Ordinance (APCO) Construction Dust) Regulation	N.A.	N.A.	N.A.	Contract Area: Man Uk Pin, Ma Wat Wai & Ping Yuen River	Valid
Account for Disposal of Construction Waste	7015003	07 May 2012	N.A.	Contract Area: Man Uk Pin, Ma Wat Wai & Ping Yuen River	Valid
Application for Wastewater Discharge License under Water Pollution Control Ordinance (WPCO)	W5/1G41/1	03 Oct 2012	31 Oct 2017	Portions A, B and C near Lin Ma Hang Road, Ta Kwu Ling, N.T.	Valid
Register as a Chemical Waste Producer under Waste Disposal Ordinance	5123-642-S3565-03	03 Oct 2012	N.A.	Portions A, B and C near Lin Ma Hang Road, Ta Kwu Ling, N.T.	Valid

4.2 SUBMISSION OF LAYOUT PLANS

4.2.1 Pursuant to *Clause 2.7* of EP-430/2011, 3 sets of the Layout Plans of scale 1:1000 with an explanatory statement detailing the works schedule, works boundary and the works areas have been submitted since 21 July 2012 to the Director of Environmental Protection of the HKSAR Government (hereinafter "DEP") upon certification by the ET Leader and verification by the Independent Environmental Checker (hereinafter "the IEC") as confirming to the information and recommendations contained in the EIA report.

4.3 SUBMISSION OF LANDSCAPE PLAN

4.3.1 Pursuant to *Clause 2.8* of EP-430/2011, 3 sets of the Landscape Plan have been submitted to the Director of Environmental Protection of the HKSAR Government (hereinafter "DEP") since 21 July 2012 upon certification by the ET Leader and verification by the IEC as confirming to the information and recommendations contained in the approved EIA report.

4.4 SUBMISSION OF UPDATED ENVIRONMENTAL MONITORING AND AUDIT MANUAL

4.4.1 Pursuant to *Clause 2.10* of EP-430/2011, an updated environmental monitoring and audit manual for the Project, namely Updated EM&A Manual for Advanced Works under EP-430/2011 (hereinafter "the Updated EM&A Manual"), has been submitted since 21 May 2012 to the DEP upon certification by the ET Leader and verification by the Independent Environmental Checker (hereinafter "the IEC") as confirming to the information and recommendations contained in the approved EIA report.

5 CONSTRUCTION AND EM&A ACTIVITIES

5.1 CONSTRUCTION ACTIVITIES

5.1.1 Detailed construction program is presented in *Three-Month Rolling Program* enclosed in ***Annex D***, including construction activities listed below:

1) Setting out of structure /fence/gate;
2) Underground utilities detection;
3) Construction of Box Culvert No.1;
4) Liaise with various utility undertakers and villagers;
5) Construction of Primary Fence footing and Secondary Fence footing;
6) Erection of permanent security fence
7) Pruning, felling and transplanting of existing tree;
8) Extension of existing drain pipe;
9) Backfilling along constructed boundary patrol road;
10) Construction of Switch Room, Pillar box and Lo Fong Bridge Post Guard House;
11) Installation of Lamp Pole;
12) Construction of U-Channel;
13) Laying of CLP (11kV) Cable (By CLP);
14) Installation of underground utility ducting;
15) Installation of E&M draw pit;
16) Cable Laying by EMSD;
17) Setting out the site boundary line and initial survey;
18) Construction of Manhole;
19) Construction of Chain Link fence at Ch 3300 across the SZ River;
20) Demolition of existing fence; and
21) Installation of Permanent CCTV and Sensor Cable.

5.2 EM&A ACTIVITIES

BASELINE MONITORING AND ESTABLISHMENT OF ENVIRONMENTAL QUALITY CRITERIA

5.2.1 Baseline environmental monitoring of the air quality, construction noise and water quality for the River Modification Works within the HKSAR was completed and the associated environmental quality criteria, i.e. A/L Levels of the monitored parameters, were proposed in the baseline monitoring report, which was submitted to EPD upon verification by the IEC.

CONSTRUCTION IMPACT MONITORING

5.2.2 No environmental monitoring was conducted during the Reporting Period.

6 WASTE MANAGEMENT

6.1 Pursuant to the Updated EM&A Manual, the waste management during the Reporting Period was carried out in close accordance with the Waste Management Plan, which has been submitted since 20 August 2012 to the Engineer for approval prior to commencement of the Works upon certification by the ET Leader and verification by the IEC.

6.2 The quantity of waste for disposal or reuse during the Reporting Period is summarized in *Monthly Summary of Waste Flow Table* in ***Annex K***.

6.3 *Work Processes or Activities Requiring Timber for Temporary Works* is also enclosed in ***Annex K***.

6.4 To ensure satisfactory performance of the waste management, the Contractor is reminded to comply with all relevant regulatory waste management requirements, including as appropriate those stipulated in the effluent discharge licenses and chemical waste producer registration, etc. The Contractor is also required to fully implement all the waste management mitigation measures recommended in the Updated EM&A Manual.

6.5 Where possible, construction materials should be reused on-site as far as practicable to reduce the construction waste, which should then be sorted or classified on site for proper recycling and disposal as recommended in the Environmental Management Plan and the associated Waste Management Plan.

7 SITE INSPECTION AND ENVIRONMENTAL AUDIT

7.1 FINDINGS/DEFICIENCIES OF THE SITE INSPECTION AND ENVIRONMENTAL AUDIT

7.1.1 Monthly site inspection and environmental audit was jointly conducted by representatives of the Engineer, IEC, ET and Contractor in close accordance with the Updated EM&A Manual.

7.1.2 During the Reporting Period, the ET's site inspection and environmental audit was conducted on ***7 January 2014***. Findings or deficiencies identified during the site inspection and environmental audit are summarized in ***Table 6-1***.

Table 6-1 Observations of Site Inspection during the Reporting Period

Date	Findings / Deficiencies	Follow-Up Status
7 January 2014	• No adverse environmental impacts were observed during the site inspection. As reminder, water spraying on dry haul road is reminded and any stockpile and construction materials should be covered with imperious sheet during the Chinese New Year Holiday. Moreover, full implementation of the required environmental mitigation measures is reminded.	Not required for general reminders.

7.1.3 Site inspection checklists completed and endorsed by all related parties are kept by the ET and are available for inspection upon request.

7.2 DISCUSSION AND CONCLUSION

7.2.1 No deficiencies and non-compliance with the relevant regulatory requirements were identified during the regular site inspection and environmental audit, indicating no adverse environmental

impacts were generated from the construction of the Works.

7.3 RECOMMENDATION

7.3.1 Although no adverse environmental impacts were identified during the regular site inspection and environmental audit conducted by representatives of the Engineer, IEC, ET and Contractor, but full implementation of the recommended environmental mitigation measures, in particular wheel washing of the construction vehicles prior to exit the site. Addition, water spraying of the site temporary roads and public roads should be kept to prevent construction dust emission.

8 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

8.1 ENVIRONMENTAL COMPLAINTS

8.1.1 No environmental complaint was received during the Reporting Period. Summary of environmental complaint is presented in ***Table 7-1*** below.

Table 7-1 Summary of Environmental Complaints

Reporting Month	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
August 2012 to December 2013	0	0	Not Applicable
January 2014	0	0	Not Applicable

8.2 ENVIRONMENTAL SUMMONS

8.2.1 No environmental summons was received during the Reporting Period. Summary of environmental summons is presented in ***Table 7-2*** below.

Table 7-2 Summary of Environmental Summons

Reporting Month	Environmental Summons Statistics		
	Frequency	Cumulative	Nature
August 2012 to December 2013	0	0	Not Applicable
January 2014	0	0	Not Applicable

8.3 ENVIRONMENTAL PROSECUTION

8.3.1 No environmental prosecution was received during the Reporting Period. Summary of environmental prosecution is presented in ***Table 7-3*** below.

Table 7-3 Summary of Environmental Prosecution

Reporting Month	Environmental Prosecution Statistics		
	Frequency	Cumulative	Nature
August 2012 to December 2013	0	0	Not Applicable
January 2014	0	0	Not Applicable

9 IMPACT FORECAST

9.1 KEY ENVIRONMENTAL ISSUES

9.1.1 Potential environmental issues to be considered in the coming month include:-

1) ***Air quality*** Dusty construction activities may generate potential construction dust impacts and dry/loose/exposure soil surface/stock piles of dusty material within the site may pose fugitive dust under dry and windy weather conditions;

2) ***Water quality*** Surface runoff during /rain may pollute the surrounding water bodies with high suspended solids or turbidity, and concrete washing may increase alkalinity or pH value of the water bodies;

3) ***Chemical waste*** Oil & grease spillage or leakage from construction equipment and the associated oil containers within site areas may contaminate lands or other environment;

4) ***Construction Noise*** Construction noise impacts may be caused by noisy construction activities;

9.2 ENVIRONMENTAL MITIGATION MEASURES FOR THE COMING MONTH

9.2.1 Environmental Mitigation Measures to be considered in the coming month includes:-

1) Dust suppression measures, in particular proper watering during dusty construction activities under dry and windy conditions, should be fully implemented;
2) Sedimentation or silt removal facilities of adequate capacity should be used for proper treatment of any site effluent generated from stockpiles of construction materials/waste or dusty haul roads or excavated surfaces within the site during storm rain, prior to discharge to nearby water bodies in order to remove suspended solids or turbidity;
3) Good management of chemical wastes should be maintained;
4) Follow-up actions for any defects identified during regular site inspection should be promptly taken to rectify the situation; and
5) Special attention is drawn to implementation of the construction noise mitigation measures during noisy construction works.

10 CONCLUSIONS AND RECOMMENDATIONS

10.1 CONCLUSIONS

10.1.1 No environmental monitoring was conducted during the Reporting Period.

10.1.2 No non-compliance with the regulatory requirements was recorded in the regular site inspection and environmental audit jointly conducted by representatives of the Engineer, IEC, ET and Contractor during the Reporting Period, indicating no adverse environmental impacts were generated from construction activities under the Works during the Reporting Period.

10.1.3 Defects of minor environmental significance were sometimes observed. They were normally rectified in-situ or within the specified time prior to the next site inspection.

10.1.4 No environmental complaint, notification of summons or successful prosecution was registered during the Reporting Period.

10.2 RECOMMENDATION

10.2.1 The Contractor is reminded to fully comply with all the relevant regulatory environmental requirements, including environmental mitigation measures stipulated in all the environmental ordinances, EM&A Manual, EMP and the associated WMP, effluent discharge license and the chemical waste producer registration, etc.

10.2.2 Attention is drawn to implementation of air quality mitigation measures, in particular wheel washing of the construction vehicles prior to exit the site. Addition, water spraying of the site temporary roads and public roads should be kept to prevent construction dust emission.

10.2.3 In addition, full implementation of the required water quality mitigation measures is reminded to eliminate adverse water quality impacts generated from site water runoff, surfaces of haul roads, stock pile of excavated materials, etc.

10.2.4 Attention is also drawn to implementation of the construction noise mitigation measures during noisy construction works.

ANNEX A

LOCATION PLAN FOR THE WORKS

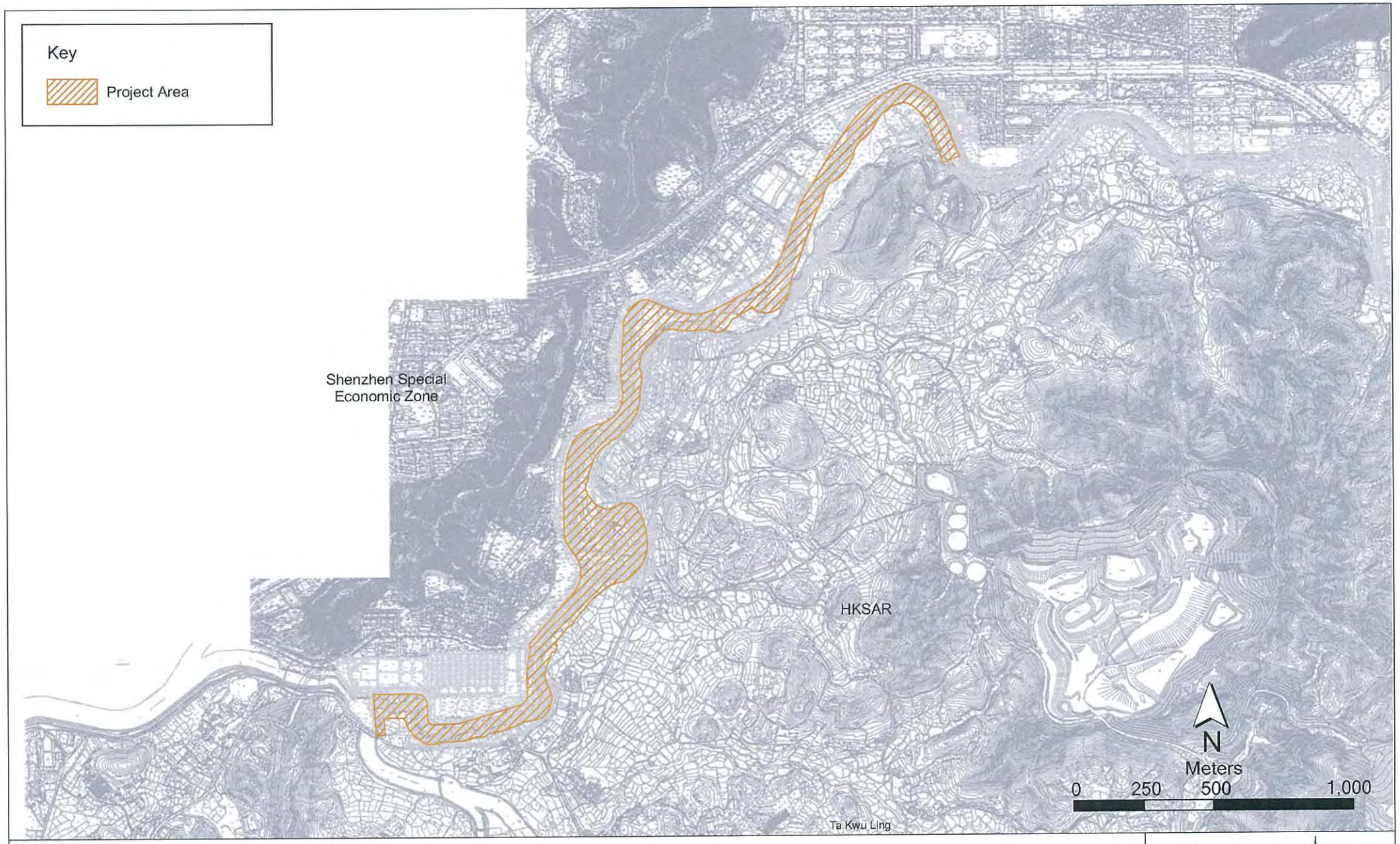


Figure A1-1

Location of Project Site

Environmental Resources Management

ERM

FILE: 0101759k (0101759_project boundary_200.mxd)
DATE: 23/10/2009

Figure A1-2

General Layout and Extent of the Trained River
(1 of 2)

Environmental Resources Management

ERM

FILE: 0101759a1.dgn

DATE: 23/10/2009

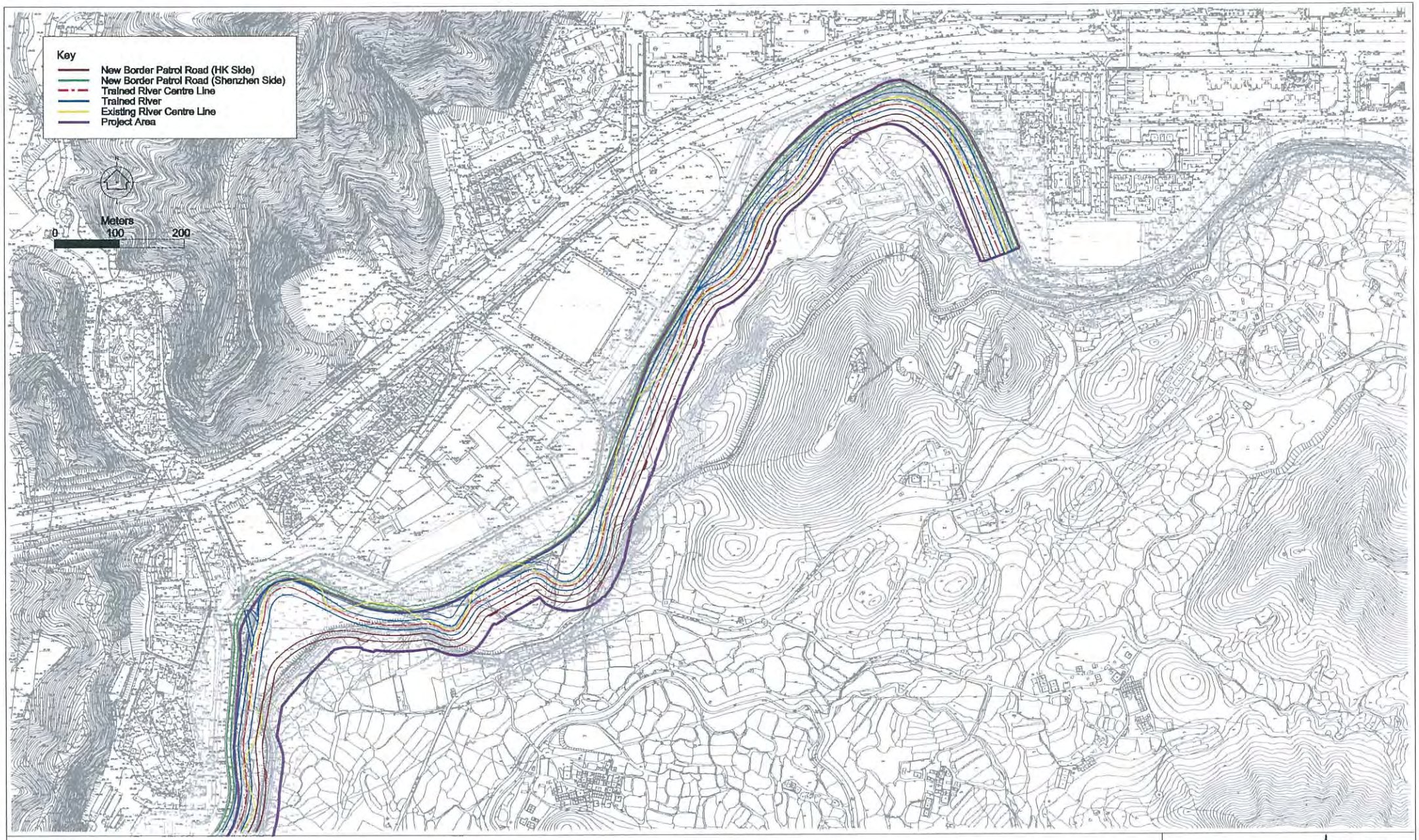


Figure A1-2

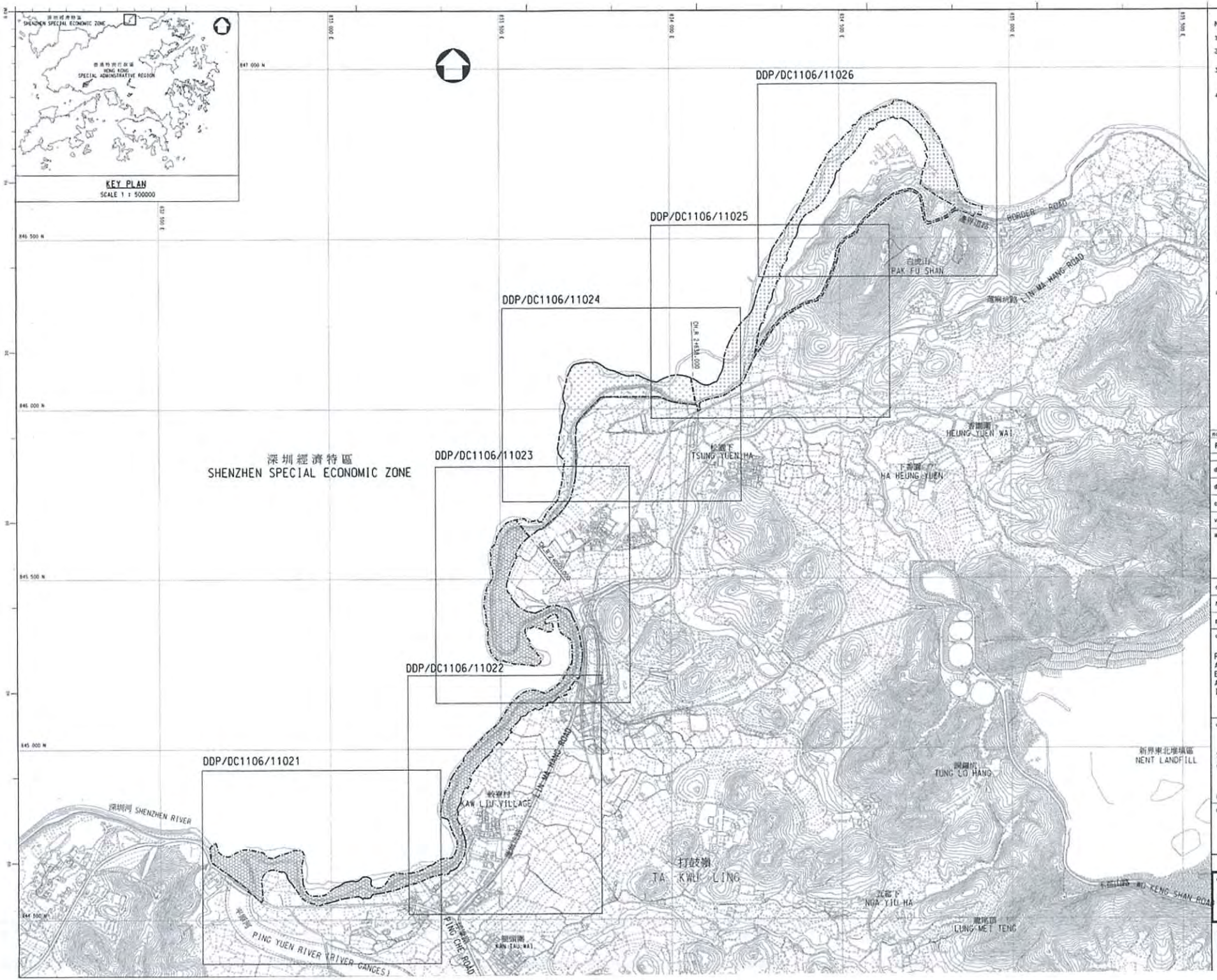
General Layout and Extent of the Trained River
(2 of 2)

Environmental Resources Management

ERM

FILE: 0101739a1-b.dgn

DATE: 23/10/2009



NOTES :

1. GRID LINES ARE HONG KONG GRID 1980.
2. ALL LEVELS ARE IN METRES AND REFERRED TO H.K.P.D.
3. FOR SETTING OUT DETAILS OF SITE LIMIT, REFER TO DRAWING NO. DDP/DC1106/11141 TO DDP/DC1106/11157.
4. FOR DETAILS OF AREAS B1, B2 B3 & B4 REFERR TO DRAWING NO. DDP/DC1106/11012.

LEGEND :

- LIMIT OF THE SITE
- PROTION A
- PROTION B
- AREA B1
- AREA B2
- AREA B3
- AREA B4
- PROTION C
- CH_R 2+050.000 CHAINAGE FOR BORDER ROAD

no.	date	description	initial

REVISION

	name	date
designed	K. K. LI	28 NOV 2011
drawn	W. K. LAI	28 NOV 2011
checked	K. H. POON	28 NOV 2011
vetted	T. C. LAU	28 NOV 2011

approved

K. L. TSANG — Ag. Chief Engineer — 28 NOV 2011 Date

contract no. DC/2011/06

file no. DP/B/5018GB

project no. 5018GB

contract

REPROVISIONING OF BOUNDARY PATROL ROAD AND ASSOCIATED SECURITY FACILITIES BETWEEN PING YUEN RIVER AND PAK FU SHAN AND DRAINAGE WORKS IN NORTH DISTRICT

drawing title

SCOPE OF WORKS AT PORTION A, B AND C OF THE SITE

(SHEET 1 OF 2)

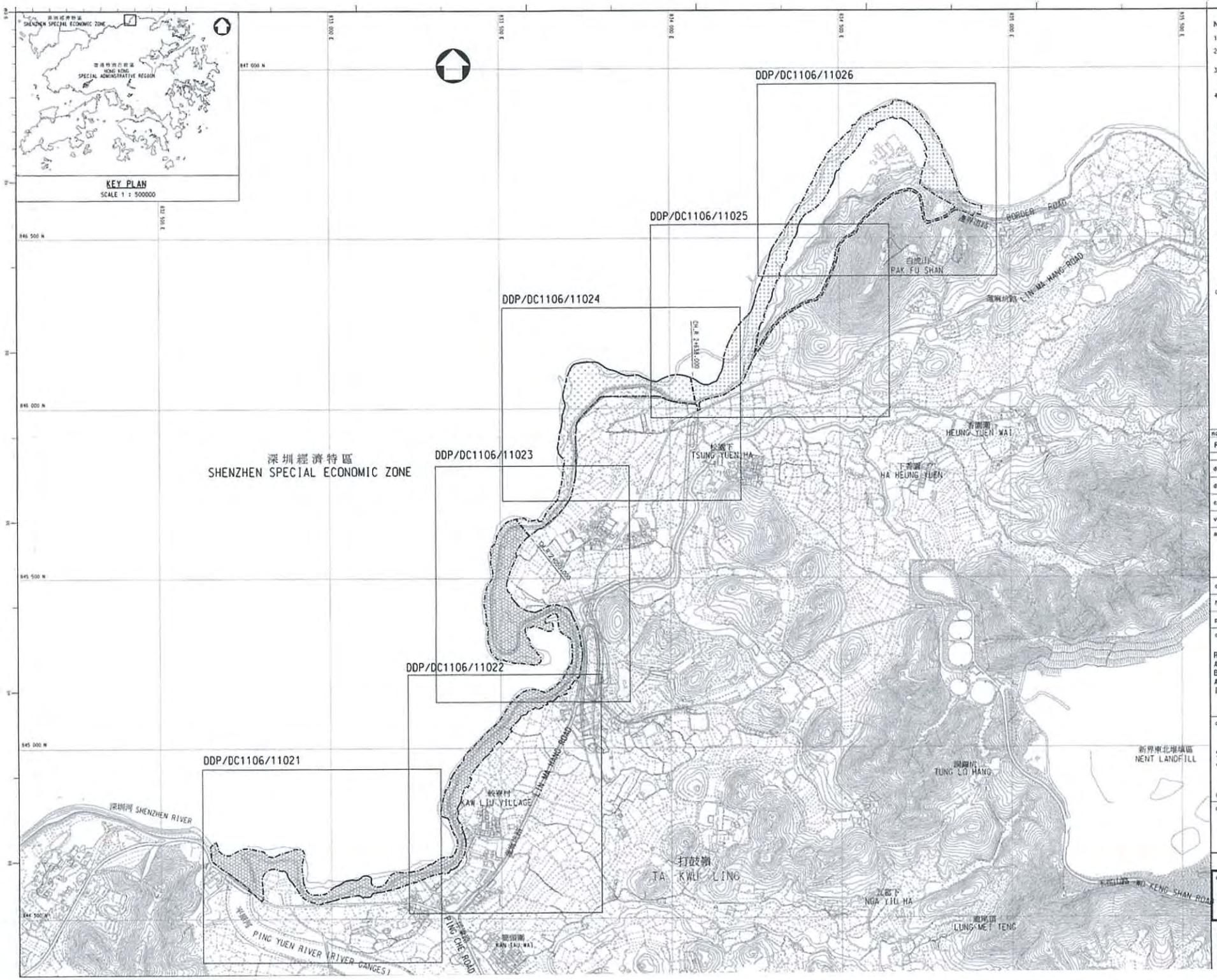
drawing no. DDP/DC1106/11011

scale 1 : 5 000

office

DRAINAGE PROJECTS DIVISION

DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE
HONG KONG
SPECIAL ADMINISTRATIVE REGION



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- PROTION C

CH.N 2+050.000 CHAINAGE FOR BORDER ROAD

no.	date	description	initial

REVISION

	name	date
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drawn	W. K. LAI	28 NOV 2011
checked	K. H. POON	28 NOV 2011
vetted	T. C. LAU	28 NOV 2011

approved

K. L. TSANG 28 NOV 2011
Ag. Chief Engineer Date

contract no. DC/2011/06

file no. DP/8/5018GB

project no. 5018GB

contract

REPROVISIONING OF BOUNDARY PATROL ROAD AND ASSOCIATED SECURITY FACILITIES BETWEEN PING YUEN RIVER AND PAK FU SHAN AND DRAINAGE WORKS IN NORTH DISTRICT

drawing title

SCOPE OF WORKS AT PORTION A, B AND C OF THE SITE

(SHEET 1 OF 2)

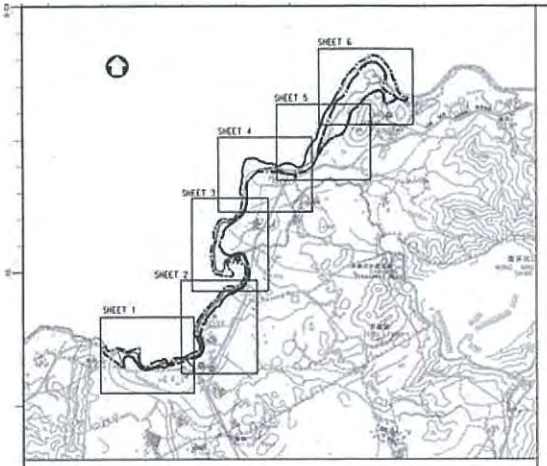
drawing no. DDP/DC1106/11011

scale 1 : 5 000

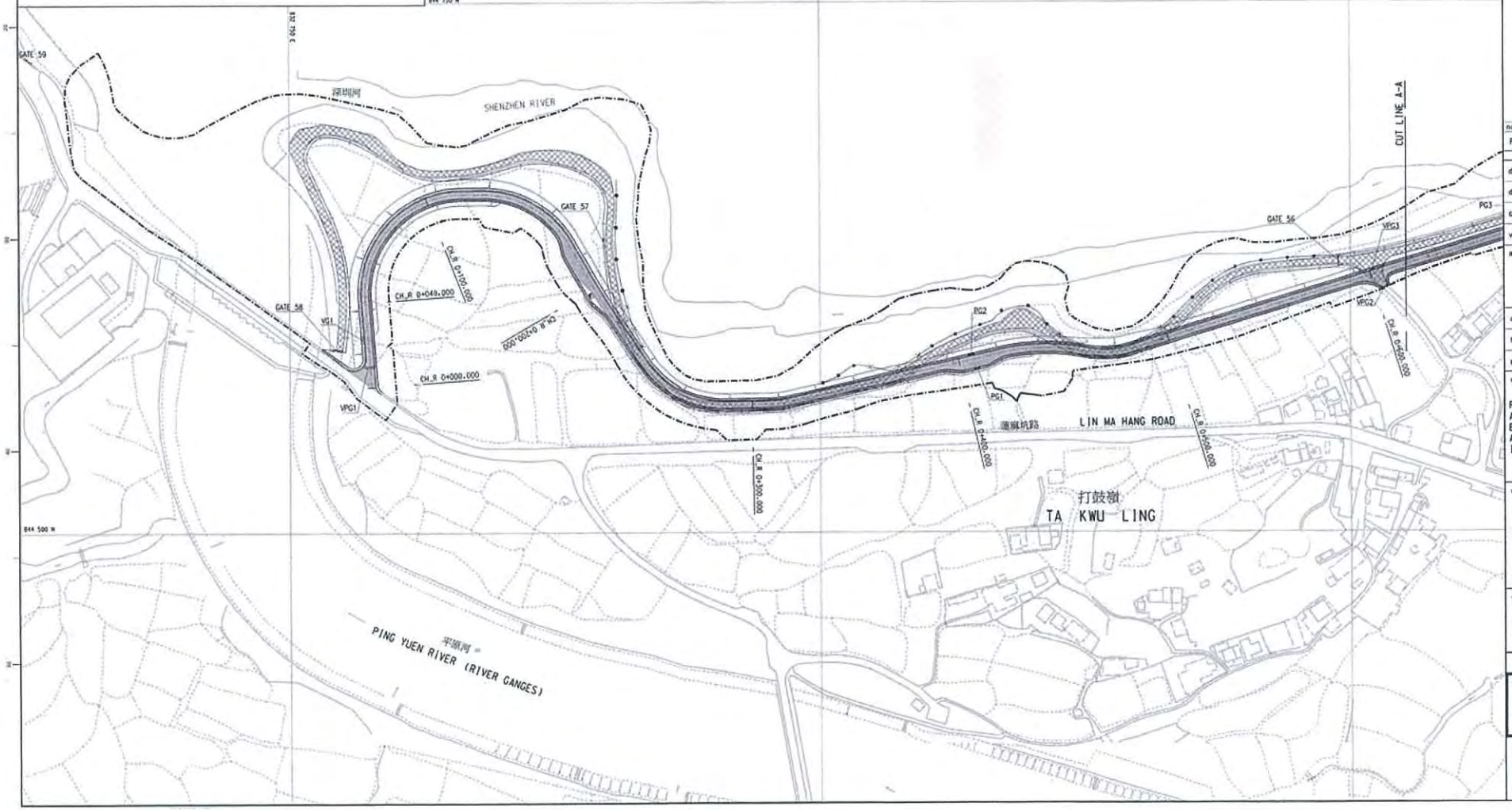
office

DRAINAGE PROJECTS DIVISION

DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE
HONG KONG
SPECIAL ADMINISTRATIVE REGION



LOCATION PLAN
SCALE 1 : 20000



NOTES:

1. GRID LINES ARE HONG KONG GRID 1980.
2. ALL LEVELS ARE IN METRES AND REFERRED TO H.K.P.D.

LEGEND :

- LIMIT OF THE SITE
- EXISTING BOUNDARY PATROL ROAD
- EXISTING BOUNDARY PATROL ROAD TO BE RECONSTRUCTED
- PROPOSED BOUNDARY PATROL ROAD
- PROPOSED XPM MESH PRIMARY BOUNDARY FENCE
- PROPOSED XPM MESH SECONDARY BOUNDARY FENCE
- EXISTING BOUNDARY FENCE AND ASSOCIATED LAMP POST AND PILLAR BOX
- EXISTING BOUNDARY FENCE AND ASSOCIATED LAMP POST AND PILLAR BOX TO BE DEMOLISHED UPON SATISFACTORY COMPLETION OF PROPOSED PRIMARY FENCE AND/ OR WITH INSTRUCTIONS FROM THE ENGINEER
- EXISTING XPM MESH PRIMARY BOUNDARY FENCE TO BE MODIFIED
- EXISTING CHAIN LINK FENCE
- EXISTING CHAIN LINK FENCE TO BE DEMOLISHED
- PROPOSED CUT SLOPE
- PROPOSED FILL SLOPE
- CH.R 0+400.000 CHAINAGE FOR BOUNDARY ROAD
- PROPOSED VEHICULAR AND PEDESTRIAN GATE (VPG)
- PROPOSED VEHICULAR GATE (VG)
- PROPOSED PEDESTRIAN GATE (PG)
- EXISTING GATE
- EXISTING GATE TO BE DEMOLISHED
- PILLAR BOX
- SWITCH ROOM

no.	date	description	initial

REVISION

	name	date
designed	C. F. CHAN	28 NOV 2011
drawn	T. M. LEE	28 NOV 2011
checked	W. H. POON	28 NOV 2011
vetted	T. C. LAU	28 NOV 2011

approved

K. L. TSANG 28 NOV 2011
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REPROVISIONING OF BOUNDARY PATROL ROAD AND ASSOCIATED SECURITY FACILITIES BETWEEN PING YUEN RIVER AND PAK FU SHAN AND DRAINAGE WORKS IN NORTH DISTRICT

drawing title

GENERAL LAYOUT

(SHEET 1 OF 6)

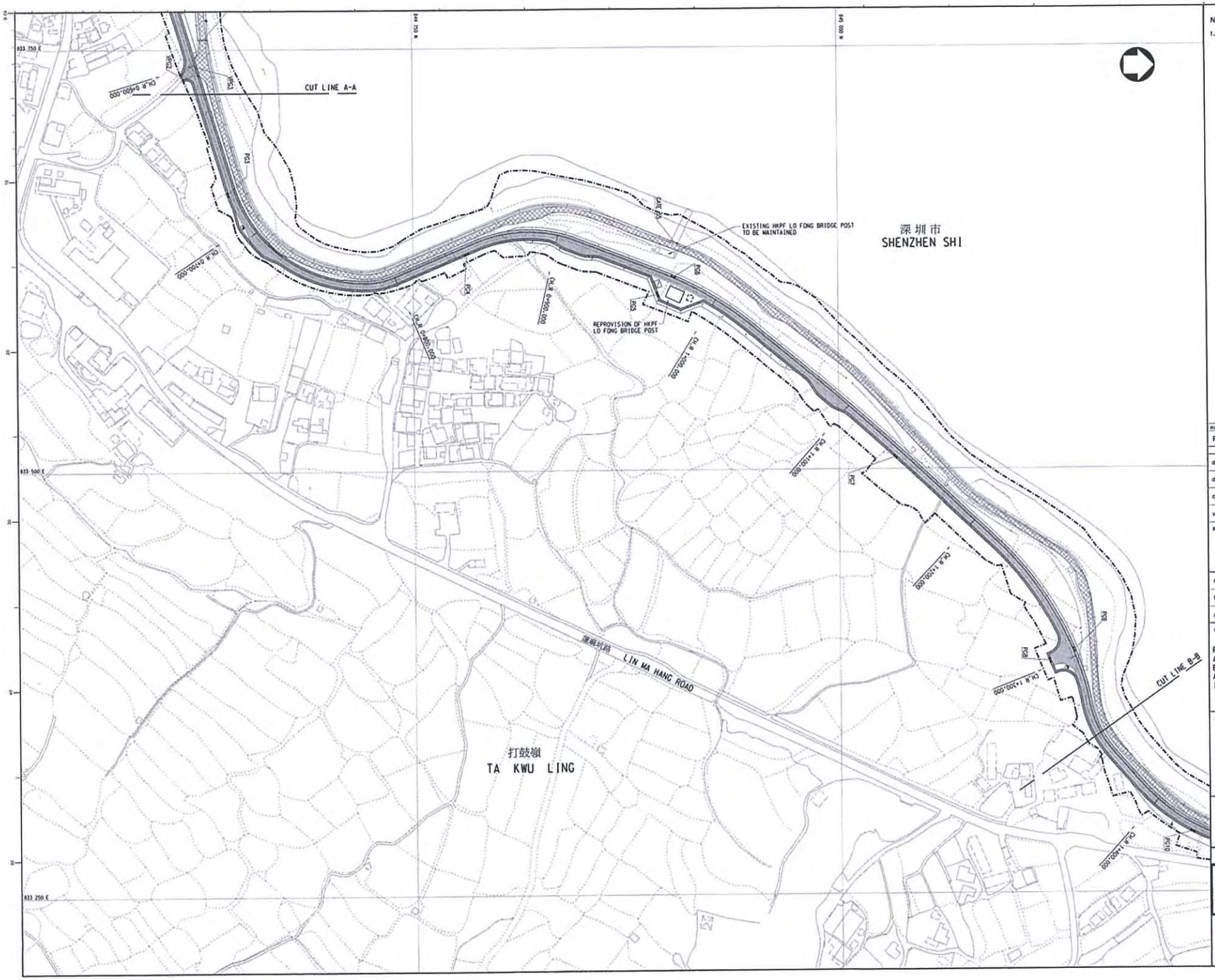
drawing no. DDP/DC1106/11021

scale 1 : 1 000

office

DRAINAGE PROJECTS DIVISION

DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE
HONG KONG
SPECIAL ADMINISTRATIVE REGION



NOTES:

1. FOR GENERAL NOTES & LEGEND, REFER TO DRG. No. DDP/DC11061/11021.

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REVISION

	name	date
designed	C. F. CHAN	28 NOV 2011
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checked	W. H. POON	28 NOV 2011
vetted	T. C. LAU	28 NOV 2011

approved

K. L. TSANG — Ag. Chief Engineer — 28 NOV 2011 Date

contract no. DC/2011/06

file no. DP/8/5018GB

project no. 5018GB

contract

REPROVISIONING OF BOUNDARY PATROL ROAD AND ASSOCIATED SECURITY FACILITIES BETWEEN PING YUEN RIVER AND PAK FU SHAN AND DRAINAGE WORKS IN NORTH DISTRICT

drawing title

GENERAL LAYOUT

(SHEET 2 OF 6)

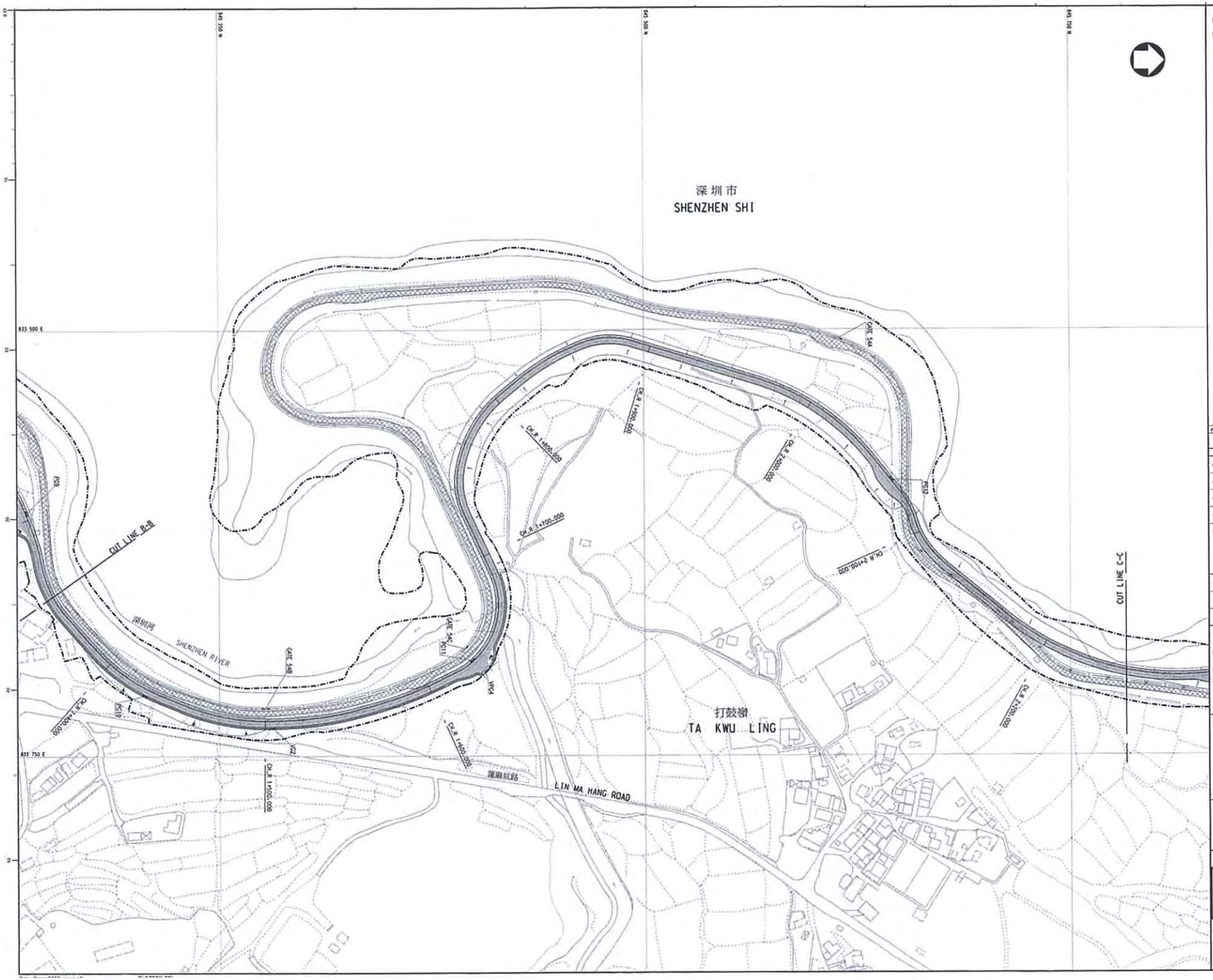
drawing no. DDP/DC1106/11022

scale 1 : 1 000

office

DRAINAGE PROJECTS DIVISION

DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE
HONG KONG
SPECIAL ADMINISTRATIVE REGION



NOTES:

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	name	date
designed	T. F. CHAN	28 NOV 2011
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checked	W. M. POON	28 NOV 2011
vetted	T. C. LAU	28 NOV 2011

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K. L. TSANG — Ag. Chief Engineer — 28 NOV 2011 Date

contract no. DC/2011/06

file no. DP/8/5018GB

project no. 5018GB

contract

REPROVISIONING OF BOUNDARY PATROL ROAD AND ASSOCIATED SECURITY FACILITIES BETWEEN PING YUEN RIVER AND PAK FU SHAN AND DRAINAGE WORKS IN NORTH DISTRICT

drawing title

GENERAL LAYOUT

(SHEET 3 OF 6)

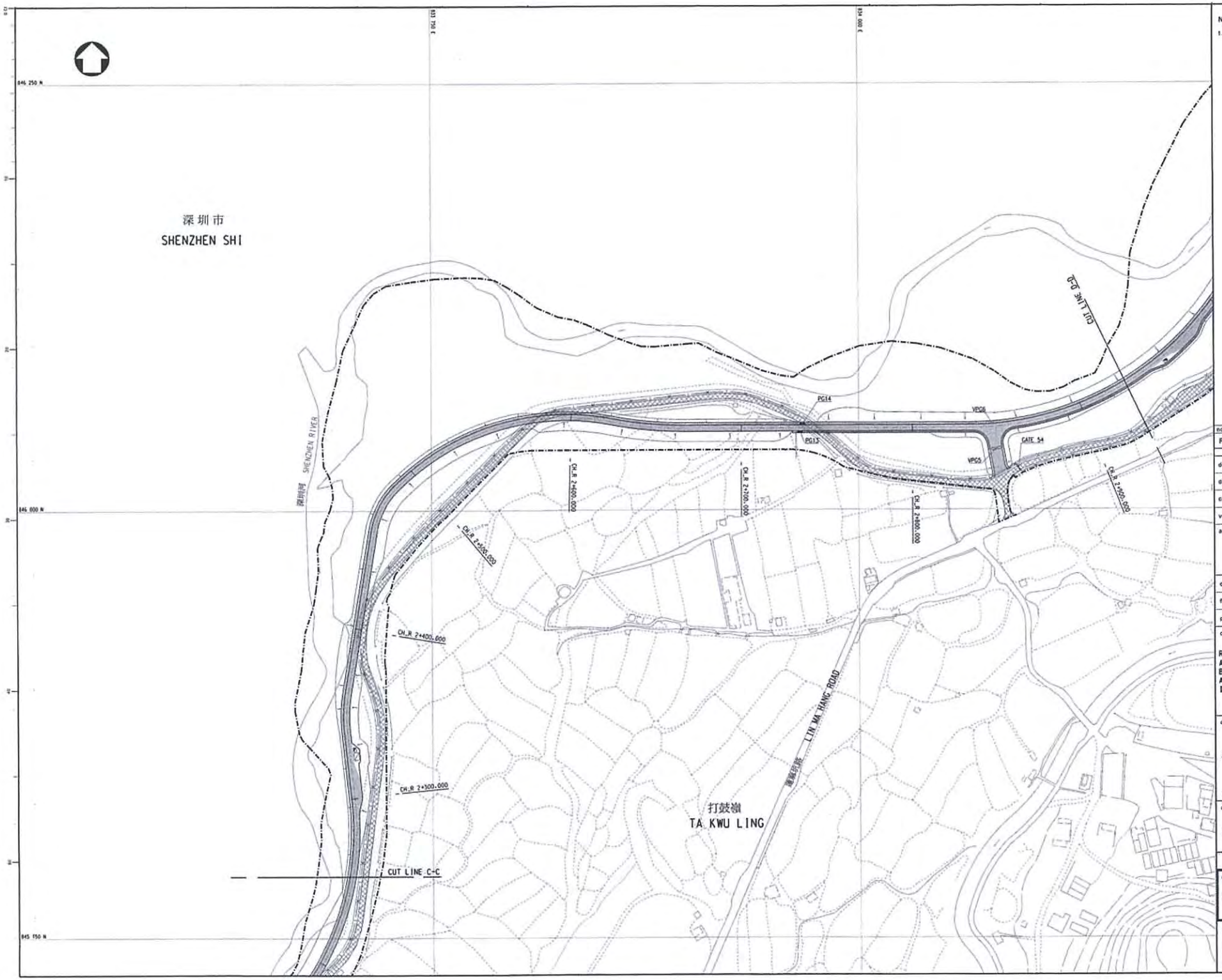
drawing no. DDP/DC1106/11023

scale 1 : 1 000

office

DRAINAGE PROJECTS DIVISION

DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE
HONG KONG
SPECIAL ADMINISTRATIVE REGION



NOTES:

1. FOR GENERAL NOTES & LEGEND, REFER TO DRG. No. DDP/DC1106/11021.

no.	date	description	initial

REVISION

	name	date
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drawn	T. M. LEE	28 NOV 2011
checked	W. H. POON	28 NOV 2011
vetted	T. C. LAU	28 NOV 2011

approved

A. L. TSANG
Ag. Chief Engineer — 28 NOV 2011 Date

contract no. DC/2011/06

file no. DP/8/5018GB

project no. 5018GB

contract

REPROVISIONING OF BOUNDARY PATROL ROAD AND ASSOCIATED SECURITY FACILITIES BETWEEN PING YUEN RIVER AND PAK FU SHAN AND DRAINAGE WORKS IN NORTH DISTRICT

drawing title

GENERAL LAYOUT

(SHEET 4 OF 6)

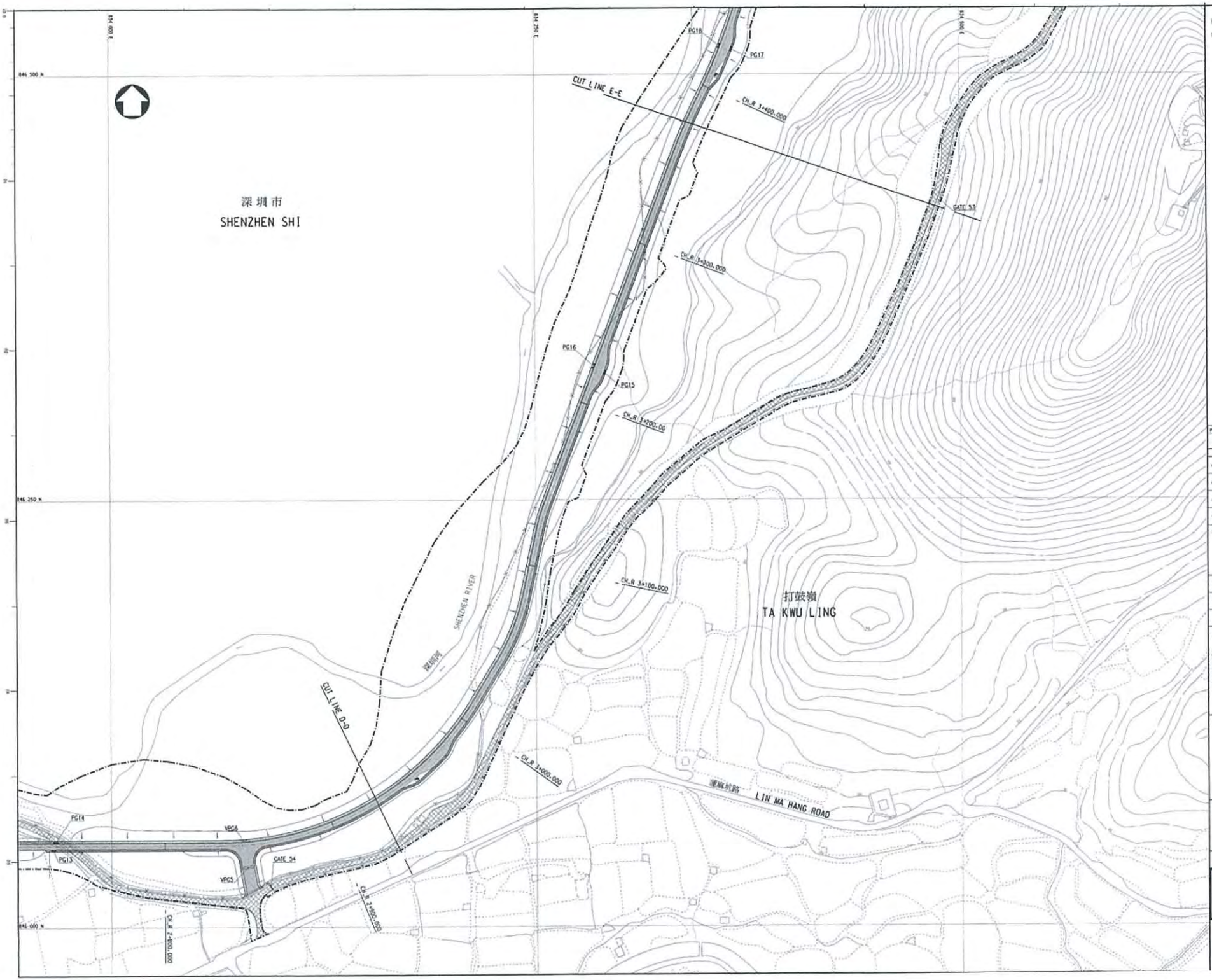
drawing no. DDP/DC1106/11024

scale 1 : 1 000

office

DRAINAGE PROJECTS DIVISION

DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE
HONG KONG
SPECIAL ADMINISTRATIVE REGION



NOTES:

1. FOR GENERAL NOTES & LEGEND, REFER TO DRG. No. DDP/DC1106/11021.

no.	date	description	initial

REVISION

	name	date
designed	C. F. CHAN	28 NOV 2011
drawn	T. W. LEE	28 NOV 2011
checked	W. H. POON	28 NOV 2011
vetted	T. C. LAU	28 NOV 2011

approved

L. TSANG
Ag. Chief Engineer
28 NOV 2011
Date

contract no. DC/2011/06

file no. DP/8/5018GB

project no. 5018GB

contract

REPROVISIONING OF BOUNDARY PATROL ROAD AND ASSOCIATED SECURITY FACILITIES BETWEEN PING YUEN RIVER AND PAK FU SHAN AND DRAINAGE WORKS IN NORTH DISTRICT

drawing title

GENERAL LAYOUT

(SHEET 5 OF 61)

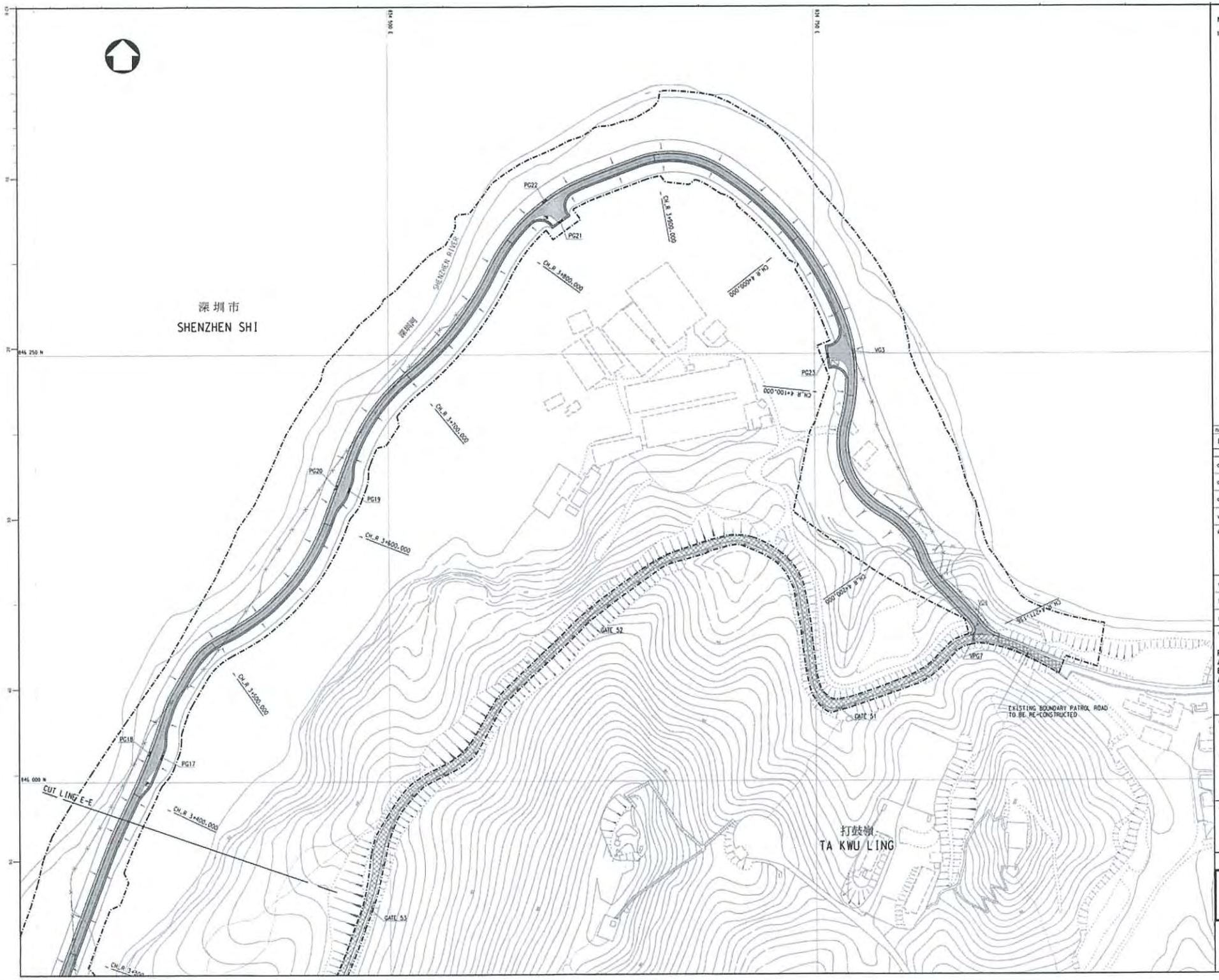
drawing no. DDP/DC1106/11025

scale 1 : 1 000

office

DRAINAGE PROJECTS DIVISION

DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE
HONG KONG
SPECIAL ADMINISTRATIVE REGION



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checked	W. H. POON	28 NOV 2011
vetted	J. C. LAU	28 NOV 2011

approved

Y. L. TSANG
Ag. Chief Engineer — 28 NOV 2011 Date

contract no. DC/2011/06

file no. DP/8/5018GB

project no. 5018GB

contract

REPROVISIONING OF BOUNDARY PATROL ROAD AND ASSOCIATED SECURITY FACILITIES BETWEEN PING YUEN RIVER AND PAK FU SHAN AND DRAINAGE WORKS IN NORTH DISTRICT

drawing title

GENERAL LAYOUT

(SHEET 6 OF 61)

drawing no. DDP/DC1106/11026

scale 1 : 1 000

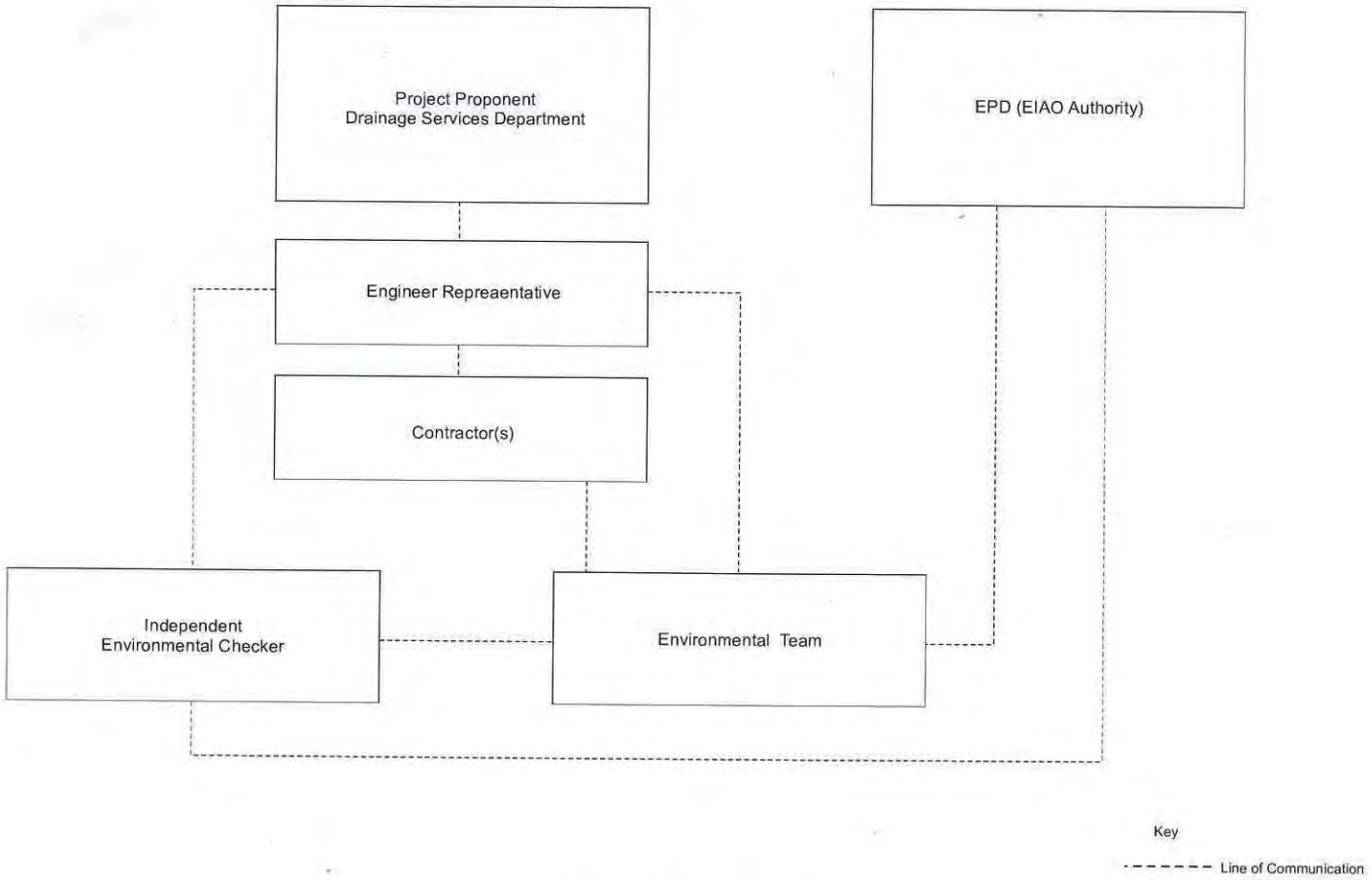
office

DRAINAGE PROJECTS DIVISION

DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE
HONG KONG
SPECIAL ADMINISTRATIVE REGION

ANNEX B

ENVIRONMENTAL MANAGEMENT ORGANIZATION AND COMMUNICATION LINES



EM&A Organisation Chart

KEY CONTACT INFORMATION UNDER THE CONTRACT

Contact Details of Key Personnel

Organization	Project Role	Name of Key Staff	Tel No.	Fax No.
DSD	Project Proponent / Employer	Mr. Eric Y. M. Cheng	2594 7341	2827 8700
Environ	Independent Environmental Checker	Mr. Roger W. K. Leung	3465 2888	3548 6988
CHCC	Project Manager	Mr. Raymond Yau	2403 1165	2403 1165
SHCC	Site Agent	Mr. Elvin Lam	2640 9286	2640 9286
AUES	Environmental Team Leader	Mr. T. W. Tam	2959 6059	2959 6079
AUES	Environmental Consultant	Miss Nicola Hon	2959 6059	2959 6079
AUES	Environmental Team Supervisor	Mr. Ben Tam	2959 6059	2959 6079

24-Hour Hotline Telephone Number for the Public to Make Enquiries

24-Hour Hotline: 6770 3827
Contact Person: Mr. Mocha Mok

Legends:

DSD *(Project Proponent / Engineer) – Drainage Services Department*
SHCC *(Main Contractor) –Sang Hing Civil Constructors Co., Ltd*
Environ *(IEC) – Environ Hong Kong Limited*
AUES *(ET) – Action-United Environmental Services & Consulting*

ANNEX C

IMPLEMENTATION SCHEDULE FOR ENVIRONMENTAL MITIGATION MEASURES

Annex D Implementation Schedule for Environmental Protection Measures

EIA Ref.	Environmental Protection Measures	Location/Duration of Measures/Timing of Completion of Measures	Implementation Agent	Implementation Stage				Relevant Legislation & Guidelines
				Des	C	Post-C	O	
1.	**Air Quality**							
S4.8	Dust control measures stipulated in the *Air Pollution Control (Construction Dust) Regulation* will be implemented during the construction phase to control the potential fugitive dust emissions. In particular: i. Water spaying on haul roads and dusty areas for every hour during construction, ii. Covering the stockpile areas of at least 70% area with tarpaulin sheet or impervious sheet; iii. Covering of dusty materials/spoils on trucks by impervious sheets; iv. Controlling the dropping height of fill materials; v. Covering or storing all debris and materials in a sheltered debris collection area; vi. Storing dredged sediment in a separate enclosed tank; and ***vii.*** Providing wheel washing facility at each exit of the works site.	Whole Site / During Construction	Contractor		✓			Air Pollution Control (Construction Dust) Regulation
S4.8	Site practices such as regular maintenance and checking of the diesel powered mechanical equipment will be adopted to avoid any black smoke emissions and to minimize gaseous emissions.	Whole Site / During Construction	Contractor		✓			
2.	**Construction Noise**							
S5.8	The following site practices should be followed during the construction of the Project: i. Only well-maintained plant should be operated on-site and plant should be serviced egularly during the construction phase; ii. Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction phase; iii. Mobile plant, if any, should be sited as far from NSRs as possible; iv. Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; v. 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; and vi. Material stockpiles and other structures should be effectively utilised,wherever practicable, in screening noise from on-site construction activities.	Whole Site / During Construction	Contractor		✓			
S5.8	Use quiet PME as far as practicable to mitigate the construction noise impacts.	Whole Site / During Construction	Contractor		✓			
S5.8	Use temporary nosie barriers to mitigate the noise impact arising from the construction works, particularly for low-rise NSRs. Movable noise barriers of 3 m in height with skid footing should be used and located within a few metres of stationary plant and mobile plant such that the line of sight to the NSR is blocked by the barriers. The length of the barrier should be at least five times greater than its height. With reference to A Practical Guide for the Reduction of Noise from Construction Works, the noise barrier material should have a superficial surface density of at least 7 kg m-2 and have no openings or gaps.	Works Area III and IV/ During Construction	Contractor		✓			A Practical Guide for the Reduction of Noise from Construction Works

S5.8	Scheduling of construction activities with identified grouping of PMEs.	Works Area III / During Construction	Contractor		✓			
S5.10	Monthly site inspection and audit of construction activities.	Whole Site / During Construction	ET & IEC		✓			EIAO
3.	**Water Quality**							
S6.8	Maximum loss rate during the wet excavation should be kept at or below the limits specified in the EIA Report.	Excavation area / During Construction	Contractor		✓			
S6.8	*Construction Site Runoff and Drainage* Channels, earth bunds or sand bag barriers will be provided on site to direct stormwater to silt removal facilities. The design of silt removal facilities will make reference to the guidelines in Appendix A1 of ProPECC PN 1/94. All drainage facilities and erosion and sediment control structures will be inspected on a regular basis and maintained to confirm proper and efficient operation at all times and particularly during rainstorms. Deposited silt and grit will be removed regularly.	Land Site / During Construction	Contractor		✓			ProPECC PN 1/94 TM standard under the WPCO
S6.8	Non-active area along the river bank will be covered by impermeable sheets or hydroseeding completed sections mmediately whenever possible to minimise erosion of soil by runoff particularly during heavy rainstorms	River bank / During Construction	Contractor		✓			
S6.8	Earthworks to form the final surfaces will be followed up with surface protection and drainage works to prevent erosion caused by rainstorms.	Land Site / During Construction	Contractor		✓			
S6.8	Appropriate surface drainage will be designed and provided where necessary. In particular, surface runoff will be collected along the river bank and be diverted to sedimentation tank/pond before being discharged into the river.	Land Site / During Construction	Contractor		✓			
S6.8	The precautions to be taken at any time of year when rainstorms are likely together with the actions to be taken when a rainstorm is imminent or forecasted and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94.	Land Site / During Construction	Contractor		✓			ProPECC PN 1/94 TM
S6.8	Oil interceptors will be provided in the drainage system where necessary and regularly emptied to prevent the release of oil and grease into the storm water drainage system after accidental spillages.	Land Site / During Construction	Contractor		✓			
S6.8	Temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge will be adequately designed for the controlled release of storm flows	Land Site / During Construction	Contractor		✓			
S6.8	The temporary diverted drainage will be reinstated to the original condition when the construction work has finished or when the temporary diversion is no longer required.	Land Site / During Construction	Contractor		✓			
S6.8	An adequate number of portable toilets will be provided for the on-site construction workforce. Wastewater/sewage will be handled by registered collector in Hong Kong.	Whole Site / During Construction	Contractor		✓			
S6.8	Debris and refuse generated on-site will be collected, handled and disposed of properly to avoid entering the nearby WSRs. Stockpiles of cement and other construction materials will be covered when not being used.	Whole Site / During Construction	Contractor		✓			
S6.8	Oil leakage or spillage will be contained and clean up immediately. Waste oil will be collected and stored for recycling or disposal, in accordance with the Waste Disposal Ordinance.	Whole Site / During Construction	Contractor		✓			Waste Disposal Ordinance

4.	**Terrestrial Ecology**							
S7.11	Avoid potential impacts on the trees whenever possible during the detailed design stage. The retained trees will be fenced off as protection from the construction works. If the trees cannot be avoided due to the engineering constraint, the affected ndividual(s) will be transplanted to compensatory woodland planting site near Pak Fu Shan or a similar habitat in the vicinity of the Project Site if considered suitable (subject to the detailed assessment of the feasibility of transplantation).	Whole Site / During Construction	Contractor	✓	✓			
S7.11	A detailed vegetation survey on the trees within the impacted area would be conducted by a suitably qualified botanist/ ecologist to identify and record the affected individuals prior to the commencement of site clearance works. Feasibility and suitability of transplanting the affected plant species of conservation interest would be carefully studied and suitable receptor sites would be identified during Tree Felling Application.	Whole Site / During Construction	Contractor	✓	✓			
S7.11	Avoid any damage and disturbance, particularly those caused by filling and illegal dumping, to the surrounding habitats through proper management of waste disposal.	Whole Site / During Construction	Contractor		✓			
S7.11	Regularly check the Site boundaries to ensure that they are not breached and that no damage occurs to surrounding areas Whole Site / During	Whole Site / During Construction	Contractor		✓			
S7.11	Prohibit and prevent open burning within the site boundary during construction and provide temporary fire fighting equipment in the work areas.	Whole Site / During Construction	Contractor		✓			
S7.11	Reinstate temporary work sites/disturbed areasimmediately after completion of the construction works	Whole Site / During Construction	Contractor		✓			
S7.11	Provide additional stream/river habitat with natural bottom (~2.1 ha) after the advanced works	Whole Site / During Construction	Contractor		✓			
S7.14	Adopt proper ecological design for the landscape works along the river banks, including the floodplain (the 1.9ha marshy low-lying grassland will be reinstated in the floodplains at Hong Kong side.	Along river bank and water retardation pond / During Design Stage	Designer(s)	✓				
S7.14	The implementation of landscape works (including compensatory planting) adopting ecological design at Hong Kong side shall be monitored.	Whole Site / During Construction	Designer(s)			✓		
S7.14	One-year bird monitoring programme shall be conducted to monitor the effectiveness of the reprovisioned/reinstated habitats	Operation	Project Proponent/ Contractor				✓	
5.	**Waste Management**							
S9.6	*General* The Contractor shall apply for and obtain the appropriate licenses for the disposal of public fill, chemical waste and effluent discharges	Contract mobilisation / During construction	Contractor		✓			Waste Disposal (Chemical Waste) (General) Regulation; Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes; WBTC No 5/99, Trip ticket System for Disposal of Construction and Demolition Material; Water Pollution Control Ordinance

S9.6	Nomination of approved personnel to be responsible for standard site practices, arrangements for collection and effective disposal to an appropriate facility of all wastes generated at the Project Site	Contract mobilisation / During construction	Contractor		✓			
S9.6	Training shall be provided to site personnel in proper waste management and chemical handling procedures, the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling.	Contract mobilisation / During construction	Contractor		✓			
S9.6	Provision of sufficient waste disposal points and regular collection for disposal.	Whole Site / During Construction	Contractor		✓			WBTC Nos. 6/2002 and 6/2002A, Enhanced Specification for Site Cleanliness and Tidiness.Works Bureau, Hong Kong SAR Government
S9.6	Appropriate measures to reduce windblown litter and dust transportation of waste by either covering trucks or by transporting wastes in enclosed containers	Whole Site / During Construction	Contractor		✓			
S9.6	Separation of chemical wastes for special handling and appropriate Treatment Chemical Waste Treatment Centre at Tsing Yi.	Whole Site / During Construction	Contractor		✓			Waste Disposal (Chemical Waste) (General) Regulation
S9.6	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors	Whole Site / During Construction	Contractor		✓			
S9.6	A recording system for the amount of wastes generated/recycled and disposal sites.	Whole Site / During Construction	Contractor		✓			
S9.6	*Waste Reduction Measures* i. Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of material and their proper disposal. ii. Encourage collection of aluminium cans and waste paper by individual collectors during construction with separate labelled bins provided to segregate these wastes from other general refuse by the workforce *iii.* Any unused chemicals and those with remaining functional capacity will be recycled as far as possible	Whole Site / During Construction	Contractor		✓			WBTC Nos. 6/2002 and 6/2002A, Enhanced Specification for Site Cleanliness and Tidiness
S9.6	iv. Use of reusable non-timber formwork to reduce the amount of C&D materials	Whole Site / During Construction	Contractor		✓			Works Branch Technical Circular (WBTC) No.32/92, The Use of Tropical Hard Wood on Construction Site
S9.6	v. Prior to disposal of construction waste, wood, steel and other metals will be separated to the extent practical, for re-use and/or recycling to reduce the quantity of waste to be disposed of to landfill	Whole Site / During Construction	Contractor		✓			
S9.6	vi. Proper storage and site practices shall be adopted to reduce the potential for damage or contamination of construction materials							
S9.6	vii. Plan and stock construction materials carefully to reduce amount of waste generated and avoid unnecessary generation of waste							

S9.6	*Excavated Materials* The contractor of the advanced work should open a billing account with EPD for the payment of disposal charges. A trip-ticket system will be established in accordance with ETWB TC(W) No. 31/2004 to monitor the reuse of surplus excavated materials off-site and disposal of construction waste and general refuse at landfills, and to control fly-tipping	Contract mobilisation / During construction	Contractor	✓	✓			Waste Disposal (Charges for Disposal of Construction Waste) Regulation ETWB TC(W) No.31/2004
S9.6	Ways to minimise generation of C&D materials include: (i) The Contractor is required to submit the Waste Management Plan (WMP) for approval by the Engineer with appropriate mitigation measures to deal with and allow space for waste segregation. Different C&D materials should be sorted into different categories for re-use/recycle. Day-to-day site operations of the Contractor should be closely monitored to ensure compliance with the approved WMP. (ii) The designer shall ensure that the design of levels and dimensions are reasonably accurate to avoid unnecessary demolition, excavation and fill. (iii) The Contractor shall be encouraged to use long lasting materials such as steel and poly-fibre for formwork on site. (iv) The RSS shall control the disposal of public fill and C&D waste to the designated public filling facilities and landfills respectively through the implementation of a trip-ticket system according to ETWB TC(W) No. 31/2004.	Whole Site / During Construction	Contractor		✓			
	Ways to maximize the use of inert C&D material include: i. The Contractor shall review the WMP quarterly to improve the site practice and maximise the use of inert C&D material ii. Different sections of works shall be programmed to ensure the C&D materials generated could be re-used by the other sections of works or works contracts. iii. Temporary storage areas should be identified to resolve programming mismatch between excavation and filling works. iv. The excavated soft inert C&D materials should be reused for backfilling the boundary patrol road, channel embankment, etc.whenever practicable. v. Good quality top soil should be reused for landscaping.	Whole Site / During Construction	Contractor		✓			
	Ways to maximise the re-use/recycle of C&D material and/or rock on site include: i. Recyclable materials such as wood and metal should be salvaged for reuse and inert materials utilized as public fill. ii. Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of material and their proper disposal. Prior to disposal of C&D waste, it is recommended that wood, steel and other metals be separated for re-use and/or recycling and inert waste utilized as fill material to minimize the quantity of waste to be disposed of at landfills.	Whole Site / During Construction	Contractor		✓			
S9.6	Ways to maximise the use of recycled C&D materials include: i. Relevant clauses would be incorporated in the Particular Specifications to facilitate the use of recycled aggregates as far as practicable, such as, temporary works, general fills and road sub-base.	Whole Site / During Construction	Contractor		✓			
S9.6	To reduce the potential dust impacts of the excavation works, the C&D materials will be wetted as quickly as possible to the extent practice after filling.	Whole Site / During Construction	Contractor		✓			

S9.6	*Chemical Waste* Containers used for storage of chemical waste shall be: i. Maintained in good condition and clearly labelled in both English and Chinese; ii. Suitable for the substance they are holding, resistant to corrosion, and securely closed; and iii. Capacity of less than 450 L unless the specifications have been approved by the EPD.	All facilities / During construction	Contractor		✓			Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
S9.6	Storage areas for chemical waste shall: i. Be clearly labelled and used solely for the storage of chemical waste; ii. Be enclosed on at least 3 sides; iii. Have adequate ventilation; iv. Be arranged so that incompatible materials are appropriately separated v. Have an impermeable floor and bunding, of capacity to accommodate 110% of the volume of the largest container or 20% by volume of the chemical waste stored in that area, whichever is the greatest; and vi. Be covered to prevent rainfall from entering	All facilities / During construction	Contractor		✓			
S9.6	Any unused chemicals and those with remaining functional capacity shall be recycled to the extent practical.	Land Site / During Construction	Contractor		✓			
S9.6	A licensed contractor shall be employed to collect chemical waste for delivery to a licensed treatment facility.	Chemical Waste Treatment Centre at Tsing Yi/ During construction	Contractor		✓			Waste Disposal (Chemical Waste) (General) Regulation Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes
S9.6	*General Refuse* General refuse shall be timely cleared and shall be disposed of to the nearest licensed facility by reputable waste collector on regular basis to reduce odour, pest and litter impacts.	All areas / During construction	Contractor		✓			WBTC Nos. 6/2002 and 6/2002A, Enhanced Specification for Site Cleanliness and Tidiness.
S9.6	No waste shall be burnt on site. Wastes shall be collected by licensed waste haulier and be disposed of at licence sites.	Land Site / During Construction	Contractor		✓			Air Pollution Control Ordinance
S9.6	Training will be provided to workers on the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling at the beginning of the construction works.	All areas / During construction	Contractor		✓			
S9.8	EM&A of waste handling, storage, transportation, disposal procedures and documentation through the site inspection and audit programme shall be undertaken.	All facilities / During construction	ET and IEC		✓			
S9.8	Waste Management Plan (WMP) will be prepared and implemented in accordance with ETWB TC(W) No. 19/2005.	All facilities / During construction	Contractor		✓			ETWB TC(W) No.19/2005

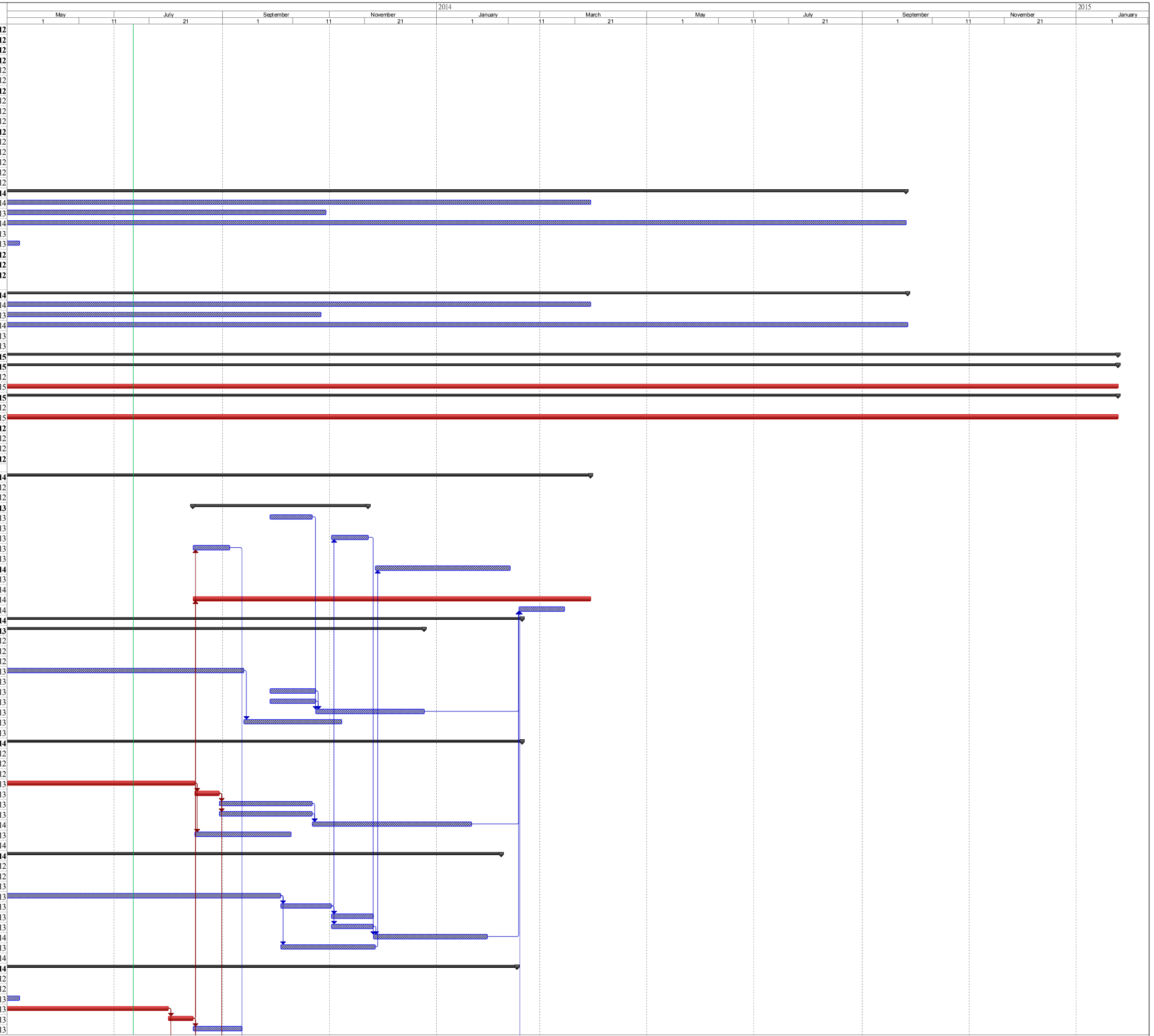
6.	**Cultural Heritage**							
S11.8.1	Pursuant to the Antiquities and Monuments Ordinance, the project proponent should inform the AMO immediately in case of discovery of antiquities or supposed antiquities in the course of soil excavation works in construction stage.	Whole Site / During Construction	Project Proponent	✓				Antiquities and Monuments Ordinance
S11.8.1	In case the works boundary of the Project changes during the detailed design stage to cover additional area not being assessed, the need for further archaeological survey and subsequent impact assessment should be reviewed and AMO should be consulted.	Additional works boundary not covered in EIA / During design stage	Design Team and the Project Proponent (i.e. DSD)					EIAO TM, Guidelines for CHIA, Antiquities and Monuments Ordinance
7.	**Landscape & Visual**							
S12.6.10	MM1: Tree Protection and Preservation - Trees/ woodland within the Project Site will be protected and preserved as far as possible in accordance with ETWB TCW No. 29/2004 and 3/2006.	Land Site / During Construction	Contractor		✓			
S12.6.10	MM2: Tree Transplantation – Should removal of trees be unavoidable due to construction impacts, trees will be transplanted or felled according to the Detailed Tree Survey and Tree Felling Application. Established trees of value are to be re-located where practically feasible.	Land site / During Construction	Contractor(s)	✓	✓			
S12.6.10	MM3: Minimize Disturbance – temporary structures and construction works should be planned with care to minimize disturbance to existing built structures as well as vegetation including riparian vegetation along the river.	Land Site / During Construction	Contractor		✓			
S12.6.10	MM4: Compensatory Tree Planting - Where loss of existing trees is unavoidable, compensatory planting of trees should be provided in accordance with ETWB TCW No. 03/2006 to compensate for those trees felled. Space is to be allowed within the Project Site (mainly planting in riverbank landscape areas of ~4.1 ha) for such planting. Plants will have 12 months to establish. Approximately 0.5 ha of compensatory woodland planting (in addition to the reinstatement of the woodland (LR4) if unavoidably affected) will be provided within the Project Site near Pak Fu Shan. The proposed compensatory woodland planting site will locate adjoining to the reinstated and existing (undisturbed by the Project) woodland on hillside. The selection of planting species shall be made with reference to the species identified in the Tree Survey and be native to Hong Kong or the South China region. The compensatory woodland planting should also adopt ecological design, ie provision of rare butterfly species larval food plant (Trema sp.), and further details refer to Section 7.11.3 of the EIA Report. The arrangement of the on-site compensatory planting, ie tree/ shrub mix and Trema sp., will be subject to detailed landscape design and planting plan, and recommended to be implemented prior to the construction activities as far as practical	Compensatory planting area / During Construction	Contractor		✓			
S12.6.10	MM5: Screening – Stockpiles of materials should be covered or hoarding erected where possible to reduce undesirable views of the construction site (such as stockpile areas), having consideration of safety and security. It is proposed that screening be compatible with the surrounding environment and where possible, non-reflective, recessive colours be used. Hoarding should be taken down at the end of the construction period.	Land Site / During Construction	Contractor		✓			

S12.6.10	MM6: Light Control – Control of night time lighting glare shall be implemented to minimize glare impact to adjacent VSRs.	Whole Site / During Construction	Contractor		✓			
S12.6.10	MM7: Reinstatement – Terrestrial areas temporarily disturbed by the Project during construction, should be re-vegetated with shrubs, ground cover or grass in order to restore the green ambiance or LR as existed before the commencement of the Project to blend with the new environment, eg the earth embankment underneath the boundary patrol road near Pak Fu Shan should be planted to ensure the embankment structure blends in with the new environment.	Whole Site / During Construction	Contractor		✓			
S12.6.10	MM8: Buffer Planting – Tree and Shrub planting shall be provided for screening the natural watercourse, woodland and shrubby grassland on lowland,proposed boundary control road and fencing, where needed and taking into account security and boundary control limitations.	Appropriate location / During Construction	Contractor		✓			
S12.6.10	MM9: River Area Enhancement Landscaping – The river bed should be nonconcreted as far as practical. The River bank and margins of approximately 4.1 ha should be enhanced with vegetation to compensate for the loss of existing vegetation and to enhance the visual and landscape value of the river where slope gradient allows. The typical design of riverbank landscaping areas for the Project is presented in Section 7.11.3 and Figure 7.11 of the EIA Report. The overall objectives for the landscaping works will be mainly concerned with ecological enhancement but also include landscape enhancement. For the sloping banks of the river, in order to guarantee safety of flood prevention, ecologically and environmentally friendly materials will be used as far as possible. The preliminary proposed landscape treatment along the sloping river banks can be classified into three types: natural vegetation, semi-natural and artificial. Further details of the river area enhancement plans can be found in Section 3 of the EIA Report, including protection of river bed with armour rock only where necessary and provision of grassed, cellular, reinforced concrete eco-friendly slope protection. Eco-bags are made of UV-resistant Polyethylene gas filled with fiber soil. Final details of the landscaping will be prepared during the detailed design stage of the Project.	Appropriate location / During Construction	Contractor	✓	✓			
S12.6.10	MM11: Floodplain Areas - The areas bound by sharp turns in the natural meander of the river should be made into floodplain areas to retain some of the riparian landscape at the river margins. The overall objectives for the landscaping works will be mainly concerned with ecological enhancement but also include landscape enhancement (also refer to Section 7.11.3 of the EIA Report). Further details will be developed during Detailed Design Stage.	Floodplain areas / During Constructio	Contractor	✓	✓			
S12.6.10	MM12: Colours of Structures - Colours for the structures eg fences should be chosen to complement the surrounding area. Lighter colours such as shades of light grey, off-white and light brown may be utilised where technically feasible to reduce the visibility of the structures.	Whole Site / During Construction	Contractor		✓			
S12.6.10	MM13: Topsoil Reuse - Excavated topsoil should be conserved for re-use by the Project or other projects.	Whole Site / During Construction	Contractor		✓			
S12.9	The completed landscape works adopting ecological design on the Hong Kong side will be monitored during the one year establishment period.	Whole site / During 1 year Establishment period	Landscape Contractor		✓			

ANNEX D

THREE-MONTH ROLLING PROGRAM

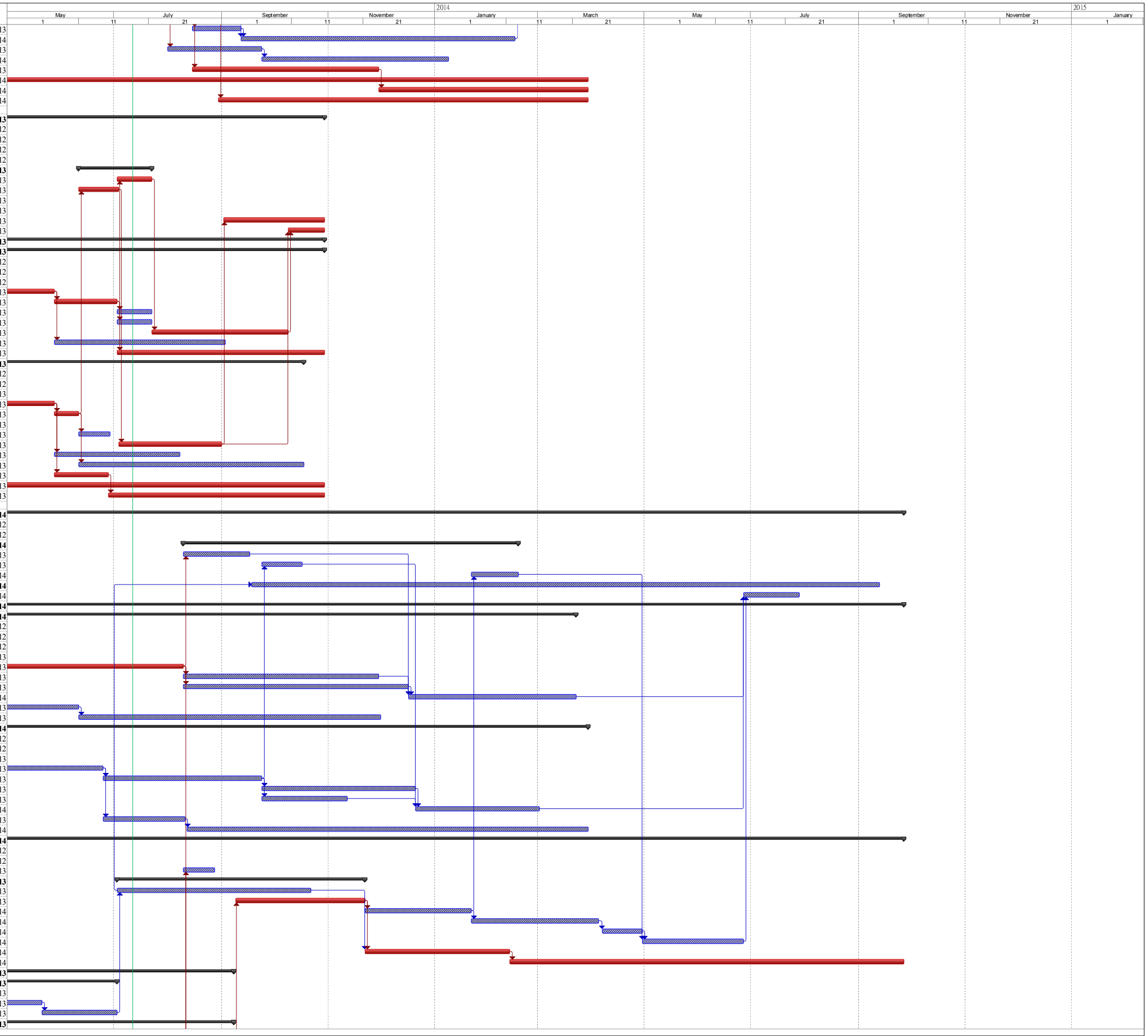
ID	Task Name	Duration	Start	Finish
1	**Letter of Acceptance**	**1 day**	**30/3/2012**	**30/3/2012**
2	**Commencement of Works**	**1 day**	**31/3/2012**	**31/3/2012**
3	**Possession of Site**	**147 days**	**31/3/2012**	**27/9/2012**
4	**1. Portion A**	**24 days**	**1/8/2012**	**28/8/2012**
5	1.1 Possession of portion A Ch 0+000 to Ch 0+600	1 day	1/8/2012	1/8/2012
6	1.2 Possession of portion A Ch 0+600 to Ch 2+050	1 day	28/8/2012	28/8/2012
7	**2. Portion B**	**51 days**	**30/4/2012**	**29/6/2012**
8	2.1 Possession of portion B SZ side government land	1 day	30/4/2012	30/4/2012
9	2.2 Possession of portion B SZ side private land	1 day	22/5/2012	22/5/2012
10	2.3 Possession of portion B HK side	1 day	29/6/2012	29/6/2012
11	**3. Portion C**	**27 days**	**28/8/2012**	**27/9/2012**
12	3.1 Possession of portion C Ch 2+838 to Ch 3+400	1 day	28/8/2012	28/8/2012
13	3.2 Possession of portion C Ch 3+400 to Ch 4+271	1 day	27/9/2012	27/9/2012
14	**4. Portion D**	1 day	31/3/2012	31/3/2012
15	**5. Portion E**	1 day	31/3/2012	31/3/2012
16	**6. Works Area**	1 day	31/3/2012	31/3/2012
17	**Section Completion Dates**	**739 days**	**31/3/2012**	**25/9/2014**
18	1. Section 1 of the Works (Portion A)- Calendar day 607 days	494 days	1/8/2012	29/3/2014
19	2. Section 2 of the Works (Portion B)- Calendar day 548 days	447 days	30/4/2012	29/10/2013
20	3. Section 3 of the Works (Portion C)- Calendar day 760 days	620 days	27/8/2012	25/9/2014
21	4. Section 4 of the Works (Portion D)- Calendar day 365 days	294 days	31/3/2012	28/3/2013
22	5. Section 5 of the Works (Portion E)- Calendar day 403 days	323 days	31/3/2012	7/5/2013
23	**Notification to EPD (EP 430)**	**77 days**	**21/5/2012**	**20/8/2012**
24	**Comment from DLO on tree survey**	**37 days**	**1/8/2012**	**12/9/2012**
25	**Liaison with HKPF on the boundary security and traffic arrangement along the BPR**	**145 days**	**31/3/2012**	**25/9/2012**
26	**Section Completion Dates**	**740 days**	**31/3/2012**	**26/9/2014**
27	1. Section 1 of the Works (Portion A)- Calendar day 607 days	494 days	1/8/2012	29/3/2014
28	2. Section 2 of the Works (Portion B)- Calendar day 548 days	445 days	30/4/2012	26/10/2013
29	3. Section 3 of the Works (Portion C)- Calendar day 760 days	620 days	28/8/2012	26/9/2014
30	4. Section 4 of the Works (Portion D)- Calendar day 365 days	294 days	31/3/2012	28/3/2013
31	5. Section 5 of the Works (Portion E)- Calendar day 365 days	294 days	31/3/2012	28/3/2013
32	**Safety & Environmental**	**838 days**	**31/3/2012**	**24/1/2015**
33	**1. Safety**	**838 days**	**31/3/2012**	**24/1/2015**
34	1.1. Submission of safety plan	35 days	31/3/2012	17/5/2012
35	1.2. Implementation of safety plan	802 days	19/5/2012	24/1/2015
36	**2. Environmental**	**838 days**	**31/3/2012**	**24/1/2015**
37	2.1. Environmental management plan	45 days	31/3/2012	29/5/2012
38	2.2. Implementation of EM&A	792 days	31/5/2012	24/1/2015
39	**Engineer's site accomodation**	**70 days**	**31/3/2012**	**28/6/2012**
40	1. Submission	30 days	31/3/2012	11/5/2012
41	2. Erection	40 days	12/5/2012	28/6/2012
42	**Contractor's Site Accomodation**	**70 days**	**31/3/2012**	**28/6/2012**
43				
44	**Construction of Portion A Ch_R 0+000 to Ch_R 2+050**	**494 days**	**1/8/2012**	**29/3/2014**
45	Possession of portion A Ch 0+000 to Ch 0+600	1 day	1/8/2012	1/8/2012
46	Possession of portion A Ch 0+600 to Ch 2+050	1 day	28/8/2012	28/8/2012
47	**1. 11Kv cable by CLP**	**83 days**	**15/8/2013**	**22/11/2013**
48	1.1 Ch 0-500	18 days	28/9/2013	21/10/2013
49	1.2 Ch 500-1000	18 days	30/8/2013	19/9/2013
50	1.3 Ch 1000-1500	18 days	2/11/2013	22/11/2013
51	1.4 Ch 1500-2050	18 days	15/8/2013	4/9/2013
52	**2. Temporary boundary patrol road diversion No.1 & 2**	193 days	21/8/2012	17/4/2013
53	**3. 132Kv cable by CLP**	**60 days**	**27/11/2013**	**11/2/2014**
54	**3. Irrigation System**	332 days	15/11/2012	28/12/2013
55	**4. Geotechnical Instrumentation**	273 days	9/3/2013	10/2/2014
56	**5. Waterworks**	186 days	15/8/2013	29/3/2014
57	**6. Traffic signs and road marking**	23 days	17/2/2014	14/3/2014
58	**7. Boundary Patrol Road**	**443 days**	**21/8/2012**	**18/2/2014**
59	**7.1 Ch 0-500**	**401 days**	**21/8/2012**	**24/12/2013**
60	7.1.1 Site clearance	45 days	21/8/2012	13/10/2012
61	7.1.2 UU detection	7 days	15/10/2012	22/10/2012
62	7.1.3 Drain pipe	45 days	24/10/2012	14/12/2012
63	7.1.4 Fence foundation	296 days	13/9/2012	12/9/2013
64	7.1.5 Fill inside fence foundation	12 days	13/9/2013	27/9/2013
65	7.1.6 Cable ducting	20 days	28/9/2013	23/10/2013
66	7.1.7 Security lights	20 days	28/9/2013	23/10/2013
67	7.1.8 Roadworks	53 days	24/10/2013	24/12/2013
68	7.1.9 Fill outside foundation	45 days	13/9/2013	7/11/2013
69	7.1.10.Surface drainage system	24 days	8/11/2013	5/12/2013
70	**7.2 Ch 500-1000**	**443 days**	**21/8/2012**	**18/2/2014**
71	7.2.1 Site clearance	45 days	21/8/2012	13/10/2012
72	7.2.2 UU detection	7 days	24/10/2012	31/10/2012
73	7.2.3 Drain pipe and box culvert	43 days	1/11/2012	20/12/2012
74	7.2.4 Fence foundation	247 days	15/10/2012	15/8/2013
75	7.2.5 Fill inside foundation	12 days	16/8/2013	29/8/2013
76	7.2.6 Cable ducting	42 days	30/8/2013	21/10/2013
77	7.2.7 Security lights	42 days	30/8/2013	21/10/2013
78	7.2.8 Roadworks	75 days	22/10/2013	20/1/2014
79	7.2.9 Fill outside foundation	45 days	16/8/2013	9/10/2013
80	7.2.10.Surface drainage system	106 days	10/10/2013	18/2/2014
81	**7.3 Ch 1000-1500**	**388 days**	**15/10/2012**	**6/2/2014**
82	7.3.1 Site clearance	45 days	15/10/2012	6/12/2012
83	7.3.2 UU detection	7 days	1/11/2012	8/11/2012
84	7.3.3 Drain pipe	74 days	9/11/2012	6/2/2013
85	7.3.4 Fence foundation	242 days	7/12/2012	3/10/2013
86	7.3.5 Fill inside foundation	24 days	4/10/2013	1/11/2013
87	7.3.6 Cable ducting	20 days	2/11/2013	25/11/2013
88	7.3.7 Security lights	20 days	2/11/2013	25/11/2013
89	7.3.8 Roadworks	53 days	26/11/2013	29/1/2014
90	7.3.9 Fill outside foundation	45 days	4/10/2013	26/11/2013
91	7.3.10.Surface drainage system	56 days	27/11/2013	6/2/2014
92	**7.4 Ch 1500-2050**	**396 days**	**15/10/2012**	**15/2/2014**
93	7.4.1 Site clearance	30 days	15/10/2012	19/11/2012
94	7.4.2 UU detection	7 days	9/11/2012	16/11/2012
95	7.4.3 Box culvert	136 days	17/11/2012	7/5/2013
96	7.4.4 Fence foundation	204 days	20/11/2012	31/7/2013
97	7.4.5 Fill inside foundation	12 days	1/8/2013	14/8/2013
98	7.4.6 Cable ducting	24 days	15/8/2013	11/9/2013



Project No: DC/2011/06
Master Programme: MP03
Date: 15-11-2012

progress | Split | Summary | Project Summary | Duration-only | Manual Summary | Critical | Critical Split | Progress

ID	Task Name	Duration	Start	Finish
99	7.4.7 Security lights	24 days	15/8/2013	11/9/2013
100	7.4.8 Roadworks	126 days	12/9/2013	15/2/2014
101	7.4.9 Fill outside foundation	45 days	1/8/2013	23/9/2013
102	7.4.10.Surface drainage system	87 days	24/9/2013	8/1/2014
103	**8. XPM fence and gates**	89 days	15/8/2013	29/11/2013
104	**9. Landscaping**	424 days	25/10/2012	29/3/2014
105	**10. Security system by EMSD**	97 days	30/11/2013	29/3/2014
106	**11. Lo fong Bridge Ploice Post**	173 days	30/8/2013	29/3/2014
107				
108	**Construction of Portion B Ch_R 2+050 to Ch_R 2+838**	**447 days**	**30/4/2012**	**29/10/2013**
109	Possession of portion B SZ side government land	1 day	30/4/2012	30/4/2012
110	Possession of portion B SZ side private land	1 day	22/5/2012	22/5/2012
111	Possession of portion B HK side	1 day	29/6/2012	29/6/2012
112	**Comment from DLO on tree survey**	82 days	7/6/2012	12/9/2012
113	**1. 11Kv cable by CLP**	**34 days**	**11/6/2013**	**22/7/2013**
114	1.1 Ch 2050-2500	17 days	3/7/2013	22/7/2013
115	1.2 Ch 2500-2838	18 days	11/6/2013	3/7/2013
116	**2. Temporary boundary patrol road diversion No.3,4,5 & 6**	127 days	14/11/2012	22/4/2013
117	**3. 11Kv cable diversion by CLP**	60 days	14/11/2012	25/1/2013
118	**4. Geotechnical Instrumentation**	47 days	2/9/2013	29/10/2013
119	**5. Traffic signs and road marking**	17 days	9/10/2013	29/10/2013
120	**6. Boundary Patrol Road**	**353 days**	**21/8/2012**	**29/10/2013**
121	**6.1 Ch 2050-2500**	**353 days**	**21/8/2012**	**29/10/2013**
122	6.1.1 Site clearance	30 days	21/8/2012	24/9/2012
123	6.1.2 UU detection	7 days	25/9/2012	4/10/2012
124	6.1.3 Box culvert	48 days	5/10/2012	30/11/2012
125	6.1.4 Fence foundation	195 days	25/9/2012	27/5/2013
126	6.1.5 Fill inside foundation	29 days	28/5/2013	2/7/2013
127	6.1.6 Cable ducting	17 days	3/7/2013	22/7/2013
128	6.1.7 Security lights	17 days	3/7/2013	22/7/2013
129	6.1.8 Roadworks	65 days	23/7/2013	8/10/2013
130	6.1.9 Fill outside foundation	82 days	28/5/2013	2/9/2013
131	6.1.10.Surface drainage system	99 days	3/7/2013	29/10/2013
132	**6.2 Ch 2500-2838**	**313 days**	**25/9/2012**	**17/10/2013**
133	6.2.1 Site clearance	40 days	25/9/2012	13/11/2012
134	6.2.2 UU detection	7 days	14/11/2012	21/11/2012
135	6.2.3 Drain pipe	60 days	22/11/2012	2/2/2013
136	6.2.4 Fence foundation	155 days	14/11/2012	27/5/2013
137	6.2.5 Fill inside foundation	12 days	28/5/2013	10/6/2013
138	6.2.6 Cable ducting	15 days	24/6/2013	11/7/2013
139	6.2.7 Security lights	15 days	11/6/2013	28/6/2013
140	6.2.8 Roadworks	51 days	4/7/2013	31/8/2013
141	6.2.9 Fill outside foundation	60 days	28/5/2013	7/8/2013
142	6.2.10.Surface drainage system	106 days	11/6/2013	17/10/2013
143	**7. XPM fence and gates**	26 days	28/5/2013	27/6/2013
144	**8. Landscaping**	447 days	30/4/2012	29/10/2013
145	**9. Security system by EMSD**	102 days	28/6/2013	29/10/2013
146				
147	**Construction of Portion C Ch_R 2+838 to Ch_R 4+271**	**620 days**	**28/8/2012**	**26/9/2014**
148	Possession of portion C Ch 2+838 to Ch 3+400	1 day	28/8/2012	28/8/2012
149	Possession of portion C Ch 3+400 to Ch 4+271	1 day	27/9/2012	27/9/2012
150	**1. 11Kv cable by CLP**	**155 days**	**10/8/2013**	**17/2/2014**
151	1.1 Ch 2838-3400	32 days	10/8/2013	16/9/2013
152	1.2 Ch 3400-4000	18 days	24/9/2013	16/10/2013
153	1.3 Ch 4000-4271	20 days	22/1/2014	17/2/2014
154	**2.Geotechnical Instrumentation**	**294 days**	**18/9/2013**	**12/9/2014**
155	**3. Traffic signs and road marking**	26 days	27/6/2014	28/7/2014
156	**4. Boundary Patrol Road**	**620 days**	**28/8/2012**	**26/9/2014**
157	**4.1 Ch 2838-3400**	**465 days**	**28/8/2012**	**22/3/2014**
158	4.1.1 Site clearance	40 days	28/8/2012	15/10/2012
159	4.1.2 UU detection	7 days	16/10/2012	24/10/2012
160	4.1.3 Drain pipe	45 days	25/10/2012	15/12/2012
161	4.1.4 Fence foundation	146 days	16/10/2012	16/4/2013
162	4.1.5 Fill inside foundation	95 days	17/4/2013	9/8/2013
163	4.1.6 Cable ducting	93 days	10/8/2013	29/11/2013
164	4.1.7 Security lights	107 days	10/8/2013	16/12/2013
165	4.1.8 Roadworks	77 days	17/12/2013	22/3/2014
166	4.1.9 Fill outside foundation	45 days	17/4/2013	10/6/2013
167	4.1.10.Surface drainage system	144 days	11/6/2013	30/11/2013
168	**4.2 Ch 3400-4000**	**431 days**	**16/10/2012**	**29/3/2014**
169	4.2.1 Site clearance	48 days	16/10/2012	11/12/2012
170	4.2.2 UU detection	7 days	12/12/2012	19/12/2012
171	4.2.3 Drain pipe	45 days	20/12/2012	16/2/2013
172	4.2.4 Fence foundation	154 days	12/12/2012	24/6/2013
173	4.2.5 Fill inside foundation	76 days	25/6/2013	23/9/2013
174	4.2.6 Cable ducting	74 days	24/9/2013	20/12/2013
175	4.2.7 Security lights	40 days	24/9/2013	11/11/2013
176	4.2.8 Roadworks	55 days	21/12/2013	1/3/2014
177	4.2.9 Fill outside foundation	40 days	25/6/2013	10/8/2013
178	4.2.10.Surface drainage system	189 days	12/8/2013	29/3/2014
179	**4.3 Ch 4000-4271**	**594 days**	**27/9/2012**	**26/9/2014**
180	4.3.1 Site clearance	39 days	27/9/2012	14/11/2012
181	4.3.2 UU detection	7 days	15/11/2012	22/11/2012
182	4.3.3 Drain pipe	15 days	10/8/2013	27/8/2013
183	**4.3.4 Fence foundation**	**119 days**	**3/7/2013**	**21/11/2013**
184	4.3.4.1 Chainage 4172 - 4271	92 days	3/7/2013	21/10/2013
185	4.3.4.2 Chainage 4000 - 4172	61 days	9/9/2013	21/11/2013
186	4.3.5 Fill inside foundation	49 days	22/11/2013	21/1/2014
187	4.3.6 Cable ducting	60 days	22/1/2014	4/4/2014
188	4.3.7 Security lights	20 days	7/4/2014	29/4/2014
189	4.3.8 Roadworks	47 days	30/4/2014	26/6/2014
190	4.3.9 Fill outside foundation	65 days	22/11/2013	12/2/2014
191	4.3.10.Surface drainage system	188 days	13/2/2014	26/9/2014
192	**5. Retaining wall CH_R 4+090 to CH_R 4+270**	**241 days**	**15/11/2012**	**7/9/2013**
193	**5.1 Bay 9 - 15**	**183 days**	**15/11/2012**	**2/7/2013**
194	5.1.1 Base slab	73 days	15/11/2012	14/2/2013
195	5.1.2 Wall	75 days	15/2/2013	20/5/2013
196	5.1.3 Fill behind wall	35 days	21/5/2013	2/7/2013
197	**5.2 Bay 1 - 8**	**168 days**	**15/2/2013**	**7/9/2013**



Project No: DC/2011/06
Master Programme: MP03
Date: 15-11-2012

progress | Split | Summary | Project Summary | Duration-only | Manual Summary | Critical | Critical Split | Progress

ID	Task Name	Duration	Start	Finish
198	5.2.1 Base slab	63 days	15/2/2013	4/5/2013
199	5.2.2 Wall	80 days	6/5/2013	9/8/2013
200	5.3.3 Fill behind wall	25 days	10/8/2013	7/9/2013
201	**6. XPM fence and gates**	236 days	10/8/2013	26/5/2014
202	**7. Landscaping**	606 days	13/9/2012	26/9/2014
203	**8. Security system by EMSD**	103 days	27/5/2014	26/9/2014
204				
205	**Construction of Portion D**	**294 days**	**31/3/2012**	**28/3/2013**
206	**Possession of Site**	**1 day**	**31/3/2012**	**31/3/2012**
207	**Setting out and site clearance**	**24 days**	**31/3/2012**	**4/5/2012**
208	**Traffic diversion**	**45 days**	**2/4/2012**	**30/5/2012**
209	**Box culvert**	**155 days**	**31/5/2012**	**3/12/2012**
210	**Reinstate existing road**	**6 days**	**26/7/2012**	**1/8/2012**
211	**Rectangular Channel**	**213 days**	**5/5/2012**	**17/1/2013**
212	**Protect existing structure near CH 54**	**120 days**	**2/4/2012**	**28/8/2012**
213	**Inlet apron**	**32 days**	**18/1/2013**	**27/2/2013**
214	**Reinstate existing structure**	**45 days**	**4/12/2012**	**28/1/2013**
215	**Type 2 railing**	**25 days**	**28/2/2013**	**28/3/2013**
216				
217	**Construction of Portion E**	**323 days**	**31/3/2012**	**7/5/2013**
218	**Possession of Site**	**1 day**	**31/3/2012**	**31/3/2012**
219	**Site clearance**	**30 days**	**31/3/2012**	**11/5/2012**
220	Setting out	15 days	12/5/2012	29/5/2012
221	Utilies detection	7 days	30/5/2012	6/6/2012
222	**Utility Diversion**	**20 days**	**14/9/2012**	**9/10/2012**
223	Liasion with villagers	45 days	30/5/2012	23/7/2012
224	**Reprovisioning of existing boundary fence for private lots**	30 days	24/7/2012	27/8/2012
225	**Landscaping Works**	**271 days**	**30/5/2012**	**27/4/2013**
226	1. Tree Survey	30 days	30/5/2012	5/7/2012
227	2. Tree felling	60 days	6/7/2012	13/9/2012
228	3. Transplant	90 days	6/7/2012	20/10/2012
229	4. Compensatory planting	89 days	7/1/2013	27/4/2013
230	**Transition Section**	226 days	6/7/2012	10/4/2013
231	Gabion Wall Channel	162 days	14/9/2012	5/4/2013
232	**Box Culvert**	172 days	14/9/2012	17/4/2013
233	**Vehicular Crossings**	92 days	14/9/2012	5/1/2013
234	**Pedestrian Crossing FBM05-1 (S7)**	52 days	7/1/2013	11/3/2013
235	**Parapet**	34 days	12/3/2013	24/4/2013
236	**Type 2 railing**	16 days	18/4/2013	7/5/2013

Project No: DC/2011/06
Master Programme: MP03
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ANNEX E

MONTHLY SUMMARY WASTE FLOW TABLE
AND
SUMMARY TABLE FOR WORK PROCESSES
OR
ACTIVITIES REQUIRING TIMBER FOR TEMPORARY WORKS

Monthly Summary Waste Flow Table

Name of Department: DSD

Contract No.: DC/2011/06

Monthly Summary Waste Flow Table for 2014

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of Non C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000m^3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m^3)
Jan-14	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Feb-14											
Mar-14											
Apr-14											
May-14											
Jun-14											
Jul-14											
Aug-14											
Sep-14											
Oct-14											
Nov-14											
Dec-14											

Notes :

(1) Note Used.

(2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Sites.

(3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging materials.

(4) The summary table shall be submitted to the Engineer's Representative monthly together with the Waste Flow Table for review and monitoring.

Summary Table for Work Processes or Activities Requiring Timber for Temporary Works

Contract No.: **DC/2011/06**

Contract Title: ***Reprovisioning of Boundary Patrol Road and Associated Security Facilities between Ping Yuen River and Pak Fu Shan and Drainage Works in North District***

Report Period: Jan-14

Item No	**Description of Works Process or Activity [see note (a) below]**	Justifications for Using Timber in Temporary Construction Works	Est. Quantities of Timber Used (m^3)	Actual Quantities used (m^3)	Remarks
1	Transition formwork & falsework (Portion A,B,E)	Temperary formwork & falsework design	10	9	
2	Transition formwork & falsework (Portion A,B,C)	Temperary formwork & falsework design	25	18	
3	Transition formwork & falsework (Portion A,B,C,E)	Temperary formwork & falsework design	52	40	
4	Transition formwork & falsework (Portion A,B,C,E)	Temperary formwork & falsework design	77	72	
5	Transition formwork & falsework (Portion A,B,C,E)	Temperary formwork & falsework design	102	86	
6	Transition formwork & falsework (Portion A,B,C,E)	Temperary formwork & falsework design	115	103	
7	Transition formwork & falsework (Portion A,B,C,E)	Temperary formwork & falsework design	121	112	
8	Transition formwork & falsework (Portion A,B,C,E)	Temperary formwork & falsework design	145	139	

Notes

(a) The Contractor shall list out all the work items requiring timber for use in temporary construction works. Several minor work items may be grouped into one for ease of updating.

(b) The summary table shall be submitted to the Engineer's Representative monthly together with the Waste Flow Table for review and monitoring

Summary Table for Work Processes or Activities Requiring Timber for Temporary Works

Contract No.: **DC/2011/06**

Contract Title: ***Reprovisioning of Boundary Patrol Road and Associated Security Facilities between Ping Yuen River and Pak Fu Shan and Drainage Works in North District***

Report Period: Jan-14

Item No	Description of Works Process or Activity [see note (a) below]	Justifications for Using Timber in Temporary Construction Works	Est. Quantities of Timber Used (m^3)	Actual Quantities used (m^3)	Remarks
9	Transition formwork & falsework (Portion A,B,C,E)	Temperary formwork & falsework design	154	151	
10	Transition formwork & falsework (Portion A,B,C,E)	Temperary formwork & falsework design	156	155	
11	Transition formwork & falsework (Portion A,B,C,E)	Temperary formwork & falsework design	157	156	
12	Transition formwork & falsework (Portion A,B,C,E)	Temperary formwork & falsework design	160	157	
13	Transition formwork & falsework (Portion A,B,C,E)	Temperary formwork & falsework design	160	157	
14	Transition formwork & falsework (Portion A,B,C,E)	Temperary formwork & falsework design	171	166	
15	Transition formwork & falsework (Portion A,B,C,E)	Temperary formwork & falsework design	178	173	
16	Transition formwork & falsework (Portion A,B,C,E)	Temperary formwork & falsework design	191	186	
17	Transition formwork & falsework (Portion A,B,C,E)	Temperary formwork & falsework design	200	194	
18	Transition formwork & falsework (Portion A,B,C,E)	Temperary formwork & falsework design	205	201	

Notes

(a) The Contractor shall list out all the work items requiring timber for use in temporary construction works. Several minor work items may be grouped into one for ease of updating.

(b) The summary table shall be submitted to the Engineer's Representative monthly together with the Waste Flow Table for review and monitoring