



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
(MAY2013)

PREPARED FOR
SANG HING CIVIL CONSTRUCTORS CO., LTD.

Quality Index

Date	Reference No.	Prepared By	Approval By
10 June 2013	TCS00599/12/600/R0116	 F. N. Wong Senior Environmental Consultant	 T. W. Tam Environmental Team Leader

Version	Date	Description
0	10 June 2013	First submission
1	13 June 2013	Amended against IEC's comments

This report has been prepared by Action-United Environmental Services & Consulting with all reasonable skill, care and diligence within the terms of the Agreement with the client, incorporating our General Terms and Conditions of Business and taking account of the resources devoted to it by agreement with the client. We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above. This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies upon the report at their own risk.

Ref.: DSDBPRNDEM00_0_0146L.13

14 June 2013

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 (May 2013)**

Reference is made to the Environmental Team's submission of the captioned report (Version 1) dated 13 June 2013 received through E-mail on 14 June 2013 for our review and comment.

Please be informed that we have no further 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 May 2013	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.

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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 re-provisioning of Boundary Patrol Road and the associated security facilities;
 - 2) Portion B – Area between CH_R 2+050 and 2+840 for re-provisioning of Boundary Patrol Road and the associated security facilities;
 - 3) Portion C – Area between CH_R 2+840 and 4+300 approximately for re-provisioning 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 EM&A report for the Works (herein after “this Report”), covering construction period from 1 to 31 May 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 Sheets (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	3 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	3 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.

4.5 CONSTRUCTION ACTIVITIES

CONSTRUCTION ACTIVITIES DURING THE REPORTING PERIOD

4.5.1 Major construction activities of the Works undertaken during the Reporting Period are listed in *Table 4-2* below:

Table 4-2 Major Construction Activities during the Reporting Period

Portion	Major Construction Activities
<p>Portion A</p> <p>Chainage R0+00 to 2+050</p>	<p>a. Setting out of structure /fence/gate;</p> <p>b. Pruning, felling and transplanting of existing trees;</p> <p>c. Underground utility detection;</p> <p>d. Liaison with various utility undertakers and villagers;</p> <p>e. Laying of blinding layer for 15 bays;</p> <p>f. Construction of base slab for 12 bays;</p> <p>g. Construction of wall stems for 27 bays;</p> <p>h. Temporary road diversion #1 and #2 (Erection of permanent fencing and temporary fencing);</p> <p>i. Construction of Box Culvert #3;</p> <p>j. Extension of existing drain pipe;</p> <p>k. Back filling along constructed boundary patrol road; and</p> <p>l. Installation of utility reserve ducting.</p>
<p>Portion B</p> <p>Chainage R2+050 to 2+838</p>	<p>a. Setting out of structure /fence/gate;</p> <p>b. Liaison with various utility undertakers and villagers;</p> <p>c. Pruning, felling and transplanting of existing trees;</p> <p>d. Underground utility detection;</p> <p>e. Laying of blinding layer for 8 bays;</p> <p>f. Construction of base slab for 12 bays;</p> <p>g. Construction of wall stems for 28 bays;</p> <p>h. Back filling along constructed boundary patrol road; and</p> <p>i. Erection of permanent security fence.</p>
<p>Portion C</p> <p>Chainage R2+838 to 4+300</p>	<p>a. Setting out of structure /fence/gate;</p> <p>b. Pruning, felling and transplanting of existing trees;</p> <p>c. Underground utility detection;</p> <p>d. Laying of blinding layer for 8 bays;</p> <p>e. Construction of base slab for 19 bays;</p> <p>f. Construction of wall stems for 25 bays;</p> <p>g. Concreting of wall stems at retaining wall (Bay 4 & 6);</p> <p>h. Construction of base slab at retaining wall (Bay 11).</p>

CONSTRUCTION ACTIVITIES DURING FORTHCOMING TWO MONTHS

4.5.2 Major construction activities of the Works for the forthcoming two months are listed in *Table 4-3* below:

Table 4-3 Major Construction Activities of the Works for the Forthcoming Two Months

Portion of the Works	Major Construction Activities
Portion A Chainage R0+00 to 2+050	a. Setting out of structure /fence/gate; b. Underground utility detection; c. Construction of drain pipe and box culvert; d. Construction of primary and secondary fence footing; e. Erection of permanent security fence; f. Pruning, felling and transplanting of existing trees; g. Extension of existing drain pipe; h. Back filling along constructed boundary patrol road; and i. Erection of permanent security fence.
Portion B Chainage R2+050 to 2+ 838	a. Underground utility detection; b. Pruning, felling and transplanting of existing trees; c. Construction of primary and secondary fence footing; d. Erection of permanent security fence; e. Back filling along constructed boundary patrol road; f. Construction of U-channel; and g. Installation of utility draw pit.
Portion C Chainage R2+838 to 4+ 300	a. Setting out of structure /fence/gate; b. Pruning, felling and transplanting of existing trees; c. Underground utility detection; d. Construction of drain pipe; e. Construction of primary and secondary fence footing; f. Construction of retaining wall; and g. Back filling along constructed boundary patrol road.

EM&A ACTIVITIES

BASELINE MONITORING AND ESTABLISHMENT OF ENVIRONMENTAL QUALITY CRITERIA

4.5.3 The baseline environmental monitoring of air quality and construction noise 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

4.5.4 No environmental monitoring was conducted during the Reporting Period.

5 WASTE MANAGEMENT

5.1 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.

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

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

5.4 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.

5 WASTE MANAGEMENT

- 5.1 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.
- 5.2 The quantity of waste for disposal or reuse during the Reporting Period is summarized in *Monthly Summary of Waste Flow Table in Annex K*.
- 5.3 *Work Processes or Activities Requiring Timber for Temporary Works* is also enclosed in *Annex K*.
- 5.4 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.
- 5.5 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.

6 SITE INSPECTION AND ENVIRONMENTAL AUDIT

6.1 FINDINGS/DEFICIENCIES OF THE SITE INSPECTION AND ENVIRONMENTAL AUDIT

- 6.1.1 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.
- 6.1.2 During the Reporting Period, the ET’s site inspection and environmental audit was conducted on 24 May 2013. 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
24 May 2013	No adverse environmental impacts were observed during the site inspection. However, full implementation of the required environmental mitigation measures is reminded.	Not required for general reminders.

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

6.2 DISCUSSION AND CONCLUSION

- 6.2.1 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.

6.3 RECOMMENDATION

- 6.3.1 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, full implementation of the recommended environmental mitigation measures, in particular wheel washing of the construction vehicles prior to exit the site.

7 ENVIRONMENTAL COMPLAINT, SUMMONS AND PROSECUTION

7.1 ENVIRONMENTAL COMPLAINTS

7.1.1 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 May 2013	0	0	Not Applicable

7.2 ENVIRONMENTAL SUMMONS

7.2.1 No environmental summons were 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 May 2013	0	0	Not Applicable

7.3 ENVIRONMENTAL PROSECUTION

7.3.1 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 May 2013	0	0	Not Applicable

8 IMPACT FORECAST

8.1 KEY ENVIRONMENTAL ISSUES

8.1.1 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;

8.2 ENVIRONMENTAL MITIGATION MEASURES FOR THE COMING MONTH

8.2.1 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.

9 CONCLUSIONS AND RECOMMENDATIONS

9.1 CONCLUSIONS

9.1.1 No environmental monitoring was conducted during the Reporting Period.

9.1.2 The baseline environmental monitoring of air quality and construction noise 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.

9.1.3 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.

9.1.4 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.

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

9.2 RECOMMENDATION

9.2.1 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.

9.2.2 Attention is drawn to implementation of air quality mitigation measures, in particular wheel washing of the construction vehicles prior to exit the site.

9.2.3 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.

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

ANNEX A

LOCATION PLAN FOR THE WORKS

Key

 Project Area

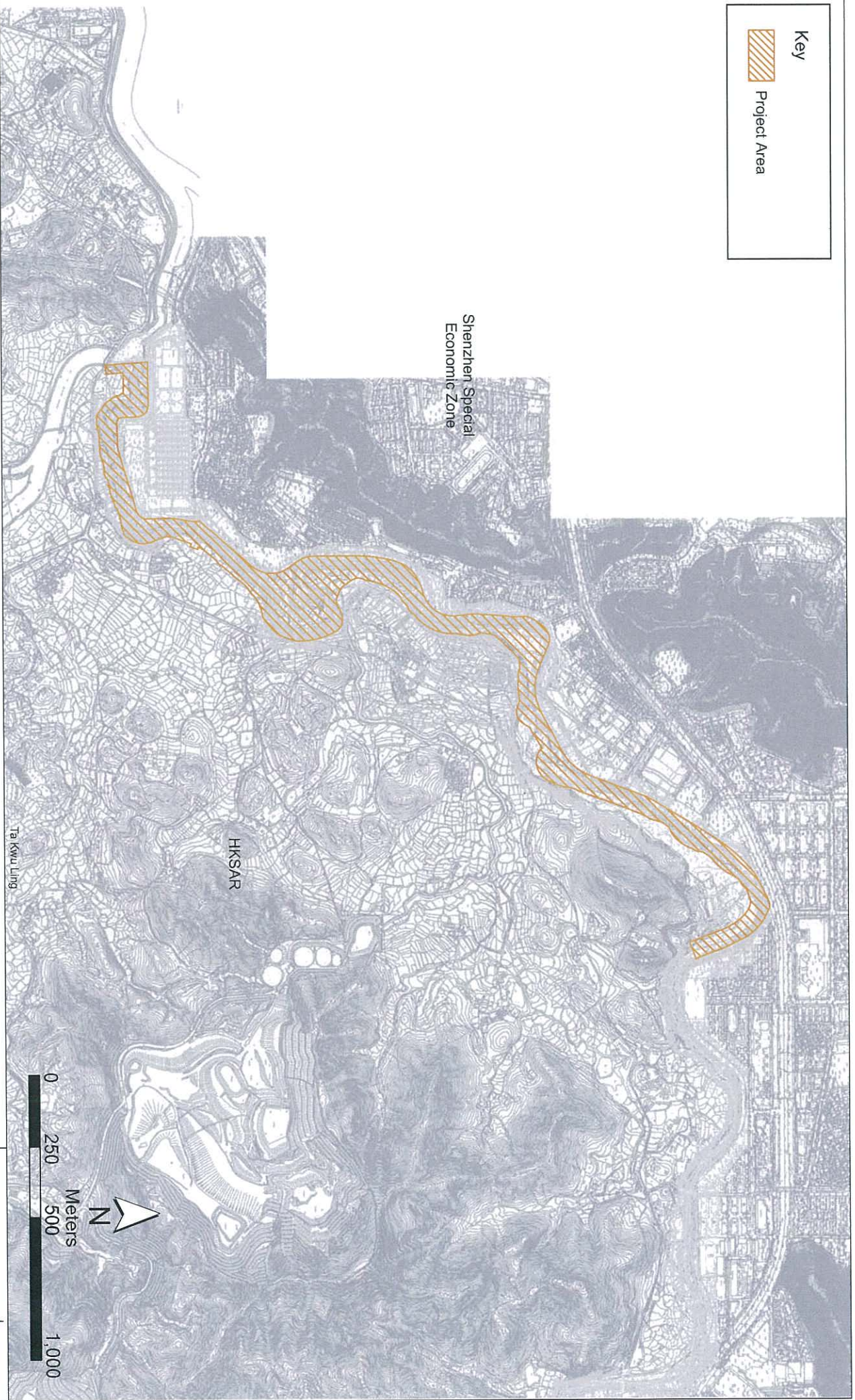


Figure A1-1

Location of Project Site

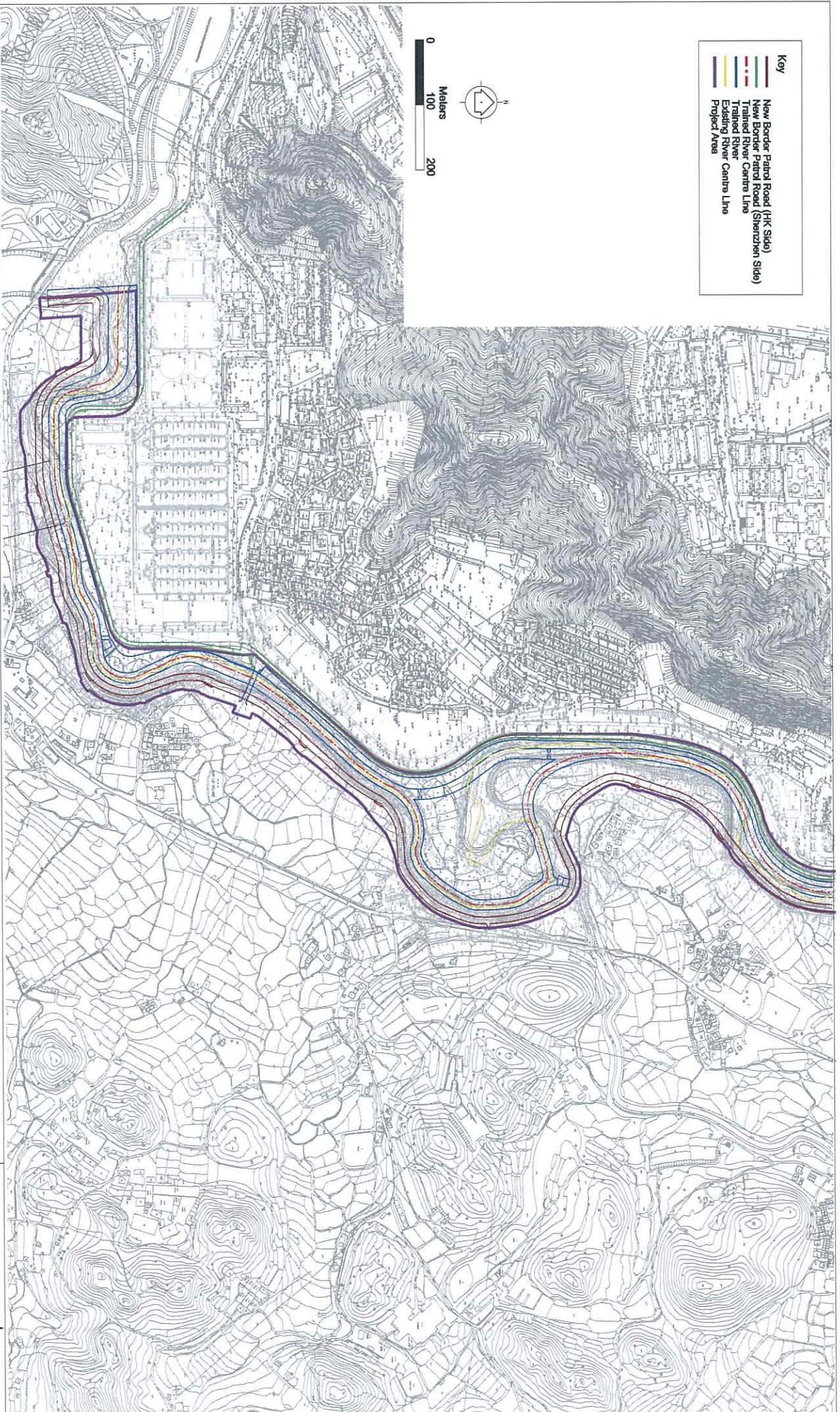
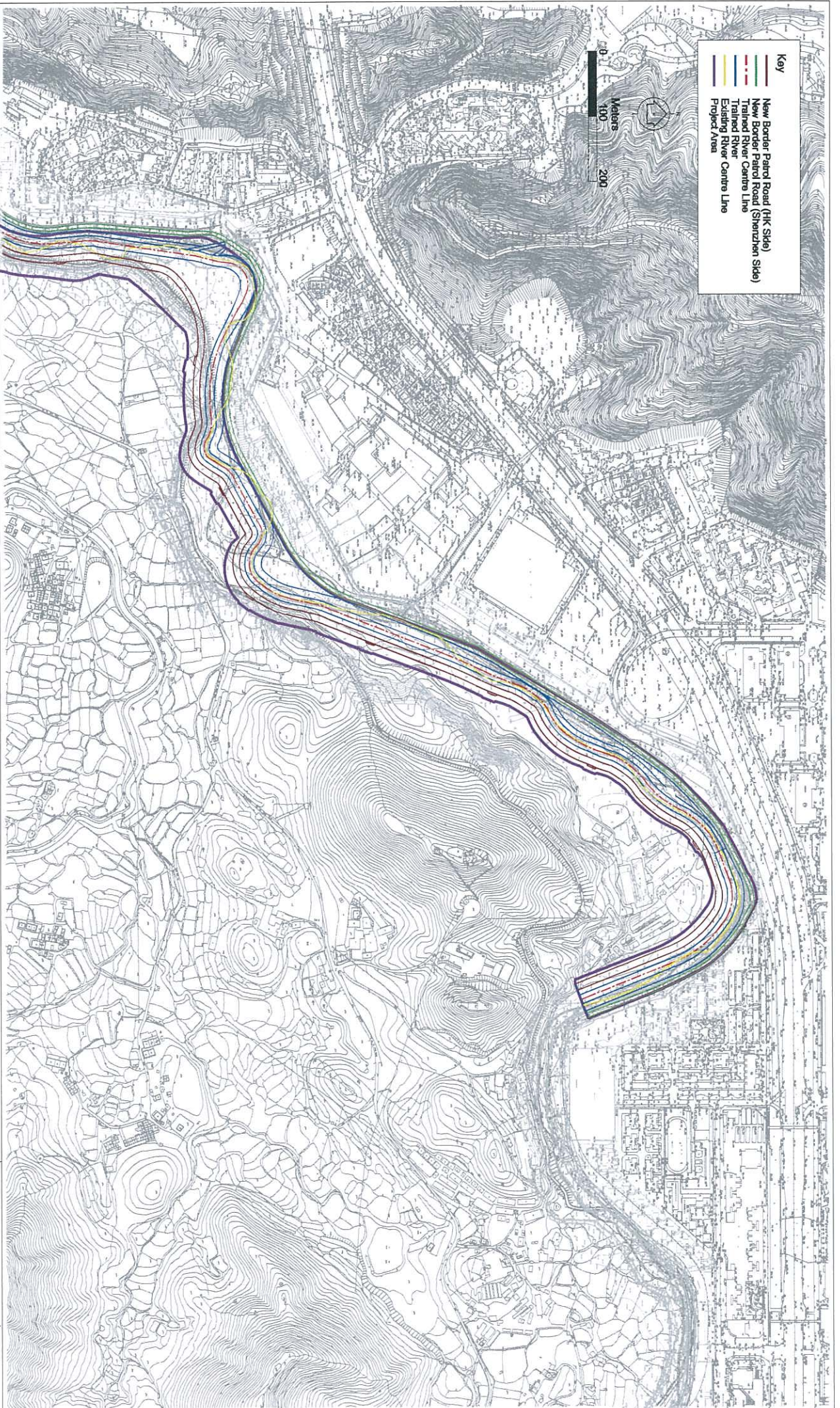


Figure A1-2

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



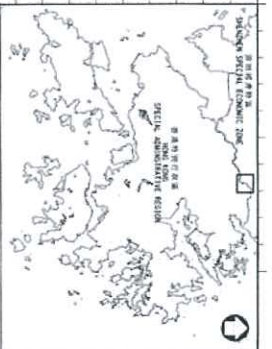
- Key**
- New Border Patrol Road (HK Side)
 - New Border Patrol Road (Shenzhen Side)
 - Trained River Centre Line
 - Existing River Centre Line
 - Project Area

0 100 200
Meters

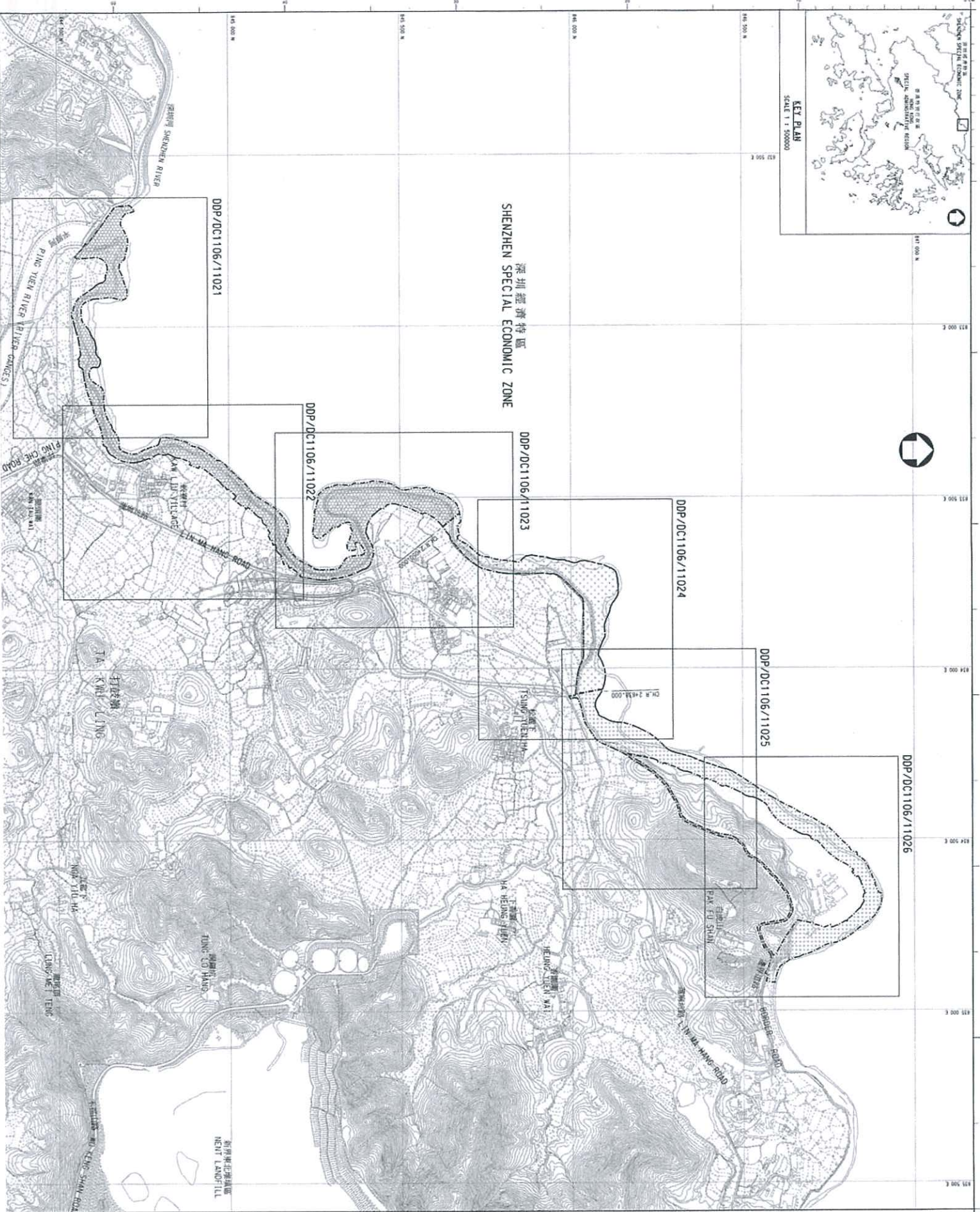
Figure A1-2

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

FILE: 010172641-3-4.dgn
DATE: 23/10/2009



KEY PLAN
SCALE 1 : 50000



DDP/DC1106/11026

DDP/DC1106/11025

DDP/DC1106/11024

DDP/DC1106/11023

DDP/DC1106/11022

DDP/DC1106/11021

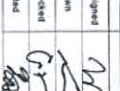
- NOTES:
1. GRID LINES ARE HONG KONG GRID 1980.
 2. ALL LEVELS ARE IN METRES AND REFERRED TO M.S.L.
 3. FOR SETTING OUT DETAILS OF SITE LIMIT TO REFER TO DRAWING NO. DDP/DC1106/11011 TO DDP/DC1106/11021.
 4. FOR DETAILS OF AREAS B1, B2 B3 & B4 REFER TO DRAWING NO. DDP/DC1106/11022.

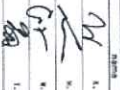
LEGEND:


- LIMIT OF THE SITE
- ▨ PORTION A
- ▨ PORTION B
- ▨ AREA B1
- ▨ AREA B2
- ▨ AREA B3
- ▨ AREA B4
- ▨ PORTION C

DATA 2008.000 QUANTIFY FOR BORDER ROAD

NO.	DATE	DESCRIPTION	BY
1	28 NOV 2011	ISSUED	W. K. LI
2	28 NOV 2011	REVISED	W. K. LI
3	28 NOV 2011	REVISED	W. K. LI
4	28 NOV 2011	REVISED	W. K. LI
5	28 NOV 2011	REVISED	W. K. LI

approved: 
W. K. LI
S. E. LI
28 NOV 2011

checked: 
W. K. LI
28 NOV 2011

verified: 
T. C. LAU
28 NOV 2011


Ag. Chief Engineer
A. S. TUNG
28 NOV 2011
Date

contract no. DC/2011/06
the no. DP/8/501868
project no. 501868

REPRODUCTION OF BOUNDARY PATROL ROAD AND ASSOCIATED SECURITY FACILITIES BETWEEN PING TSEI RIVER AND PAK FO SHAN AND DRAINAGE WORKS IN NORTH DISTRICT

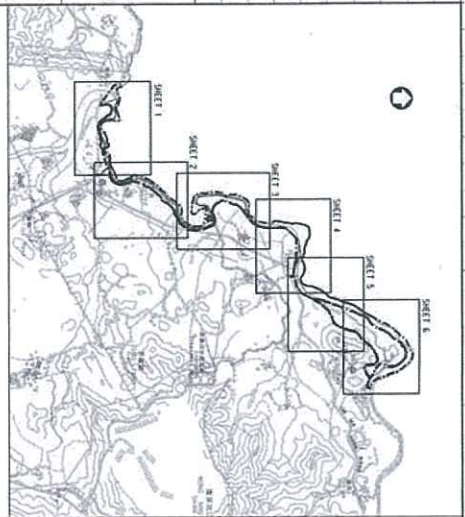
SCOPE OF WORKS AT PORTION A, B AND C OF THE SITE

SHEET 1 OF 21
drawing no. DDP/DC1106/11011
scale 1 : 5 000

office:  DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION

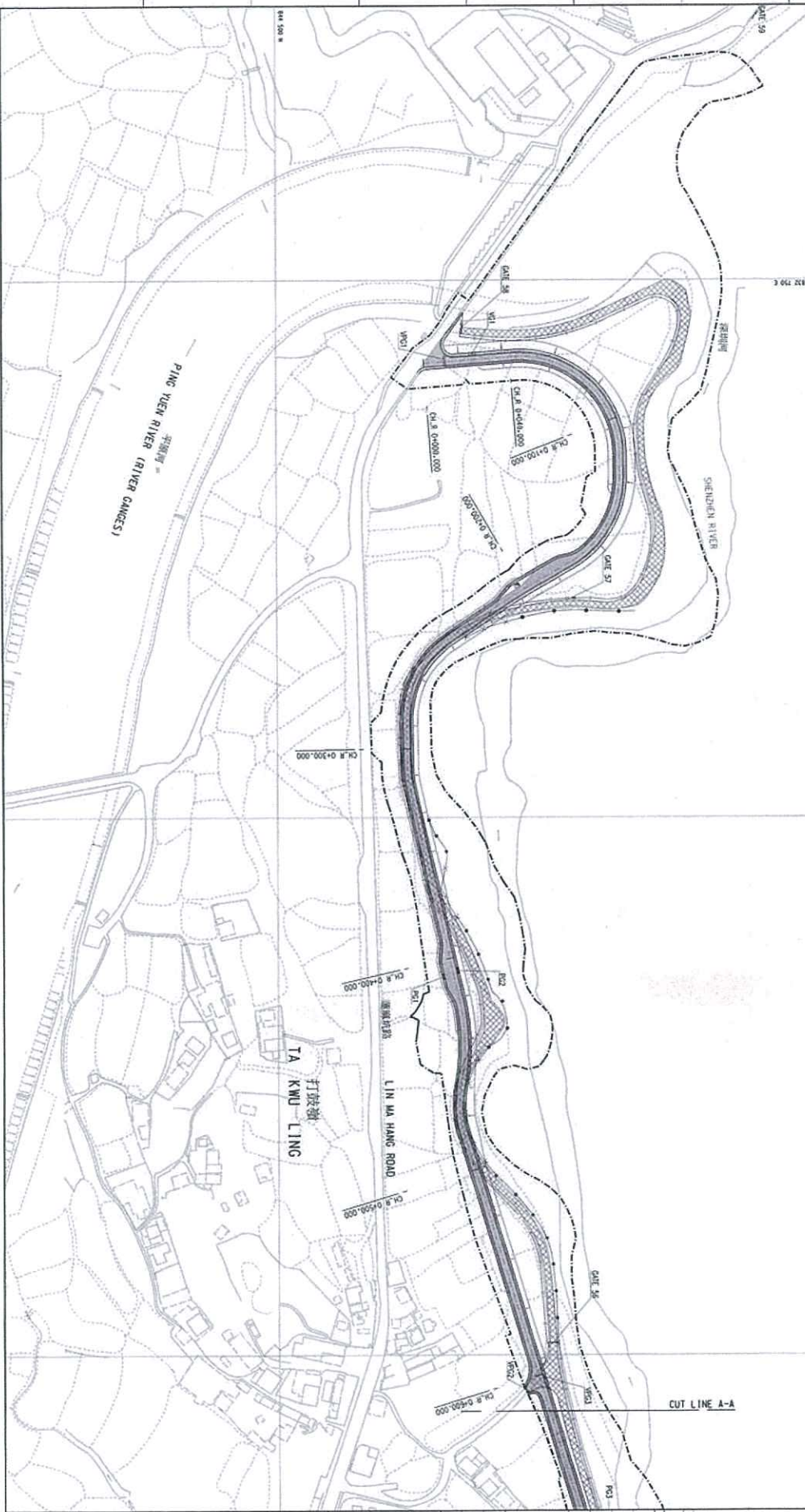
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LOCATION PLAN
SCALE 1:20000

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SHENZHEN SHI



NOTES:

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2. ALL LENGTHS ARE IN METRES AND REFERRED TO IN METRES.

LEGEND:

- LIMIT OF THE SITE
- EXISTING BOUNDARY PATROL ROAD
- EXISTING BOUNDARY PATROL ROAD TO BE RECONSTRUCTED
- PROPOSED BOUNDARY PATROL ROAD
- PROPOSED PAVEMENT
- PROPOSED PAVEMENT PRIMARY
- PROPOSED PAVEMENT SECONDARY
- EXISTING BOUNDARY FENCE AND ASSOCIATED LAMP POSTS AND PILLAR BOX
- EXISTING BOUNDARY FENCE AND ASSOCIATED LAMP POSTS AND PILLAR BOX TO BE DEMOLISHED
- PROPOSED BOUNDARY FENCE AND ASSOCIATED LAMP POSTS AND PILLAR BOX
- EXISTING CHAIN LINK FENCE
- EXISTING CHAIN LINK FENCE TO BE DEMOLISHED
- PROPOSED CHAIN LINK FENCE TO BE DEMOLISHED
- PROPOSED CUT SLOPE
- PROPOSED FILL SLOPE
- CHAINED FROM BOUNDARY ROAD
- PROPOSED VERGEE AS AND RESTRICTION GATE (V.R.G.)
- PROPOSED VERGEE AT GATE 1921
- PROPOSED RESTRICTION GATE 1921
- EXISTING GATE
- EXISTING GATE TO BE DEMOLISHED
- PILLAR BOX
- SWITCH ROOM

NO.	DATE	DESCRIPTION	INITIALS
1	28 NOV 2011	DESIGNED	C. L. CHAN
2	28 NOV 2011	CHECKED	W. H. LIU
3	28 NOV 2011	APPROVED	W. H. NG
4	28 NOV 2011	REVISION	W. H. NG

Project no. 501808
Contract no. DC/2011/06
Contract no. DP/8/501808

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

DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION

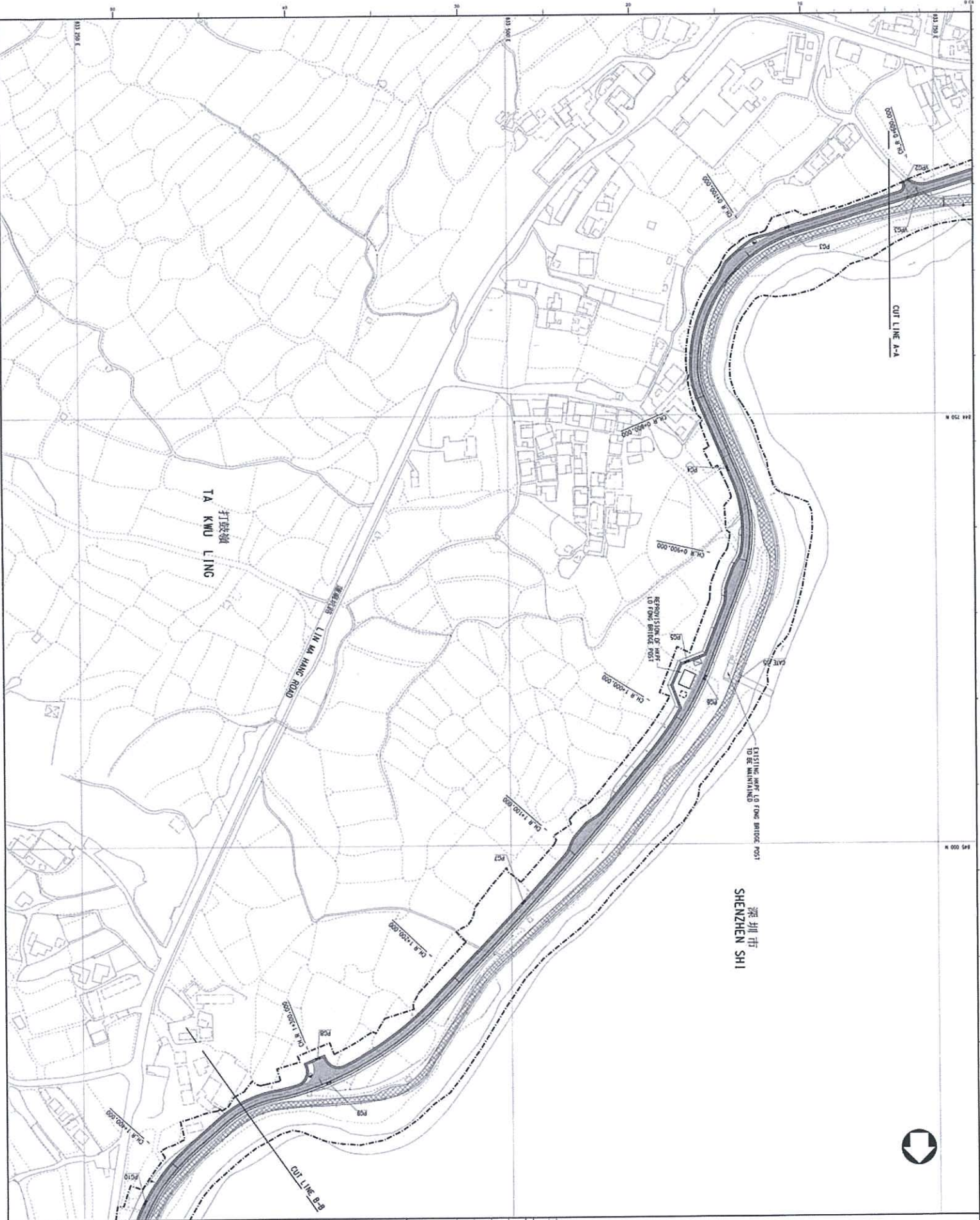
drawing title: GENERAL LAYOUT

drawing no.: DDP/DC/1106/11021

scale: 1:1,000

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3	28 NOV 2011	DESIGN	
4	28 NOV 2011	DESIGN	
5	28 NOV 2011	DESIGN	

Ag. Chief Engineer
 S. L. LING
 28 NOV 2011
 12:50

contract no. DC/2011/05
 file no. DP/8/5018C8
 project no. 5018C8

REPROVISIONING OF BOUNDARY PATROL ROAD AND ASSOCIATED SECURITY FACILITIES BETWEEN PING TSEN RIVER AND PAK TSI AND DRAINAGE WORKS IN NORTH DISTRICT

drawing title
GENERAL LAYOUT

(SHEET 2 OF 5)

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3	28 NOV 2011	CHECKED	
4	28 NOV 2011	VERIFIED	
5	28 NOV 2011	APPROVED	

DESIGNED: *[Signature]* S. Y. CHAN 28 NOV 2011
 DRAWN: *[Signature]* K. M. NG 28 NOV 2011
 CHECKED: *[Signature]* S. C. LAM 28 NOV 2011
 VERIFIED: *[Signature]* S. C. LAM 28 NOV 2011
 APPROVED: *[Signature]* S. Y. CHAN 28 NOV 2011
 Ag. Chief Engineer

contract no. DC/2011/05
 file no. DP/8/5018CB
 project no. 5018CB
 contract

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

drawing title
 GENERAL LAYOUT

SHEET 3 OF 51
 drawing no. DDP/DC1106/11023
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REVISION			
DESIGNED	C. F. CHAN	29 NOV 2011	
DRAWN	W. H. POON	29 NOV 2011	
CHECKED	L. C. LAM	29 NOV 2011	
APPROVED			

Ag. Chief Engineer
 29 NOV 2011
 DATE

contract no. DP/8/501808
 file no. 501808
 project no. 501808

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

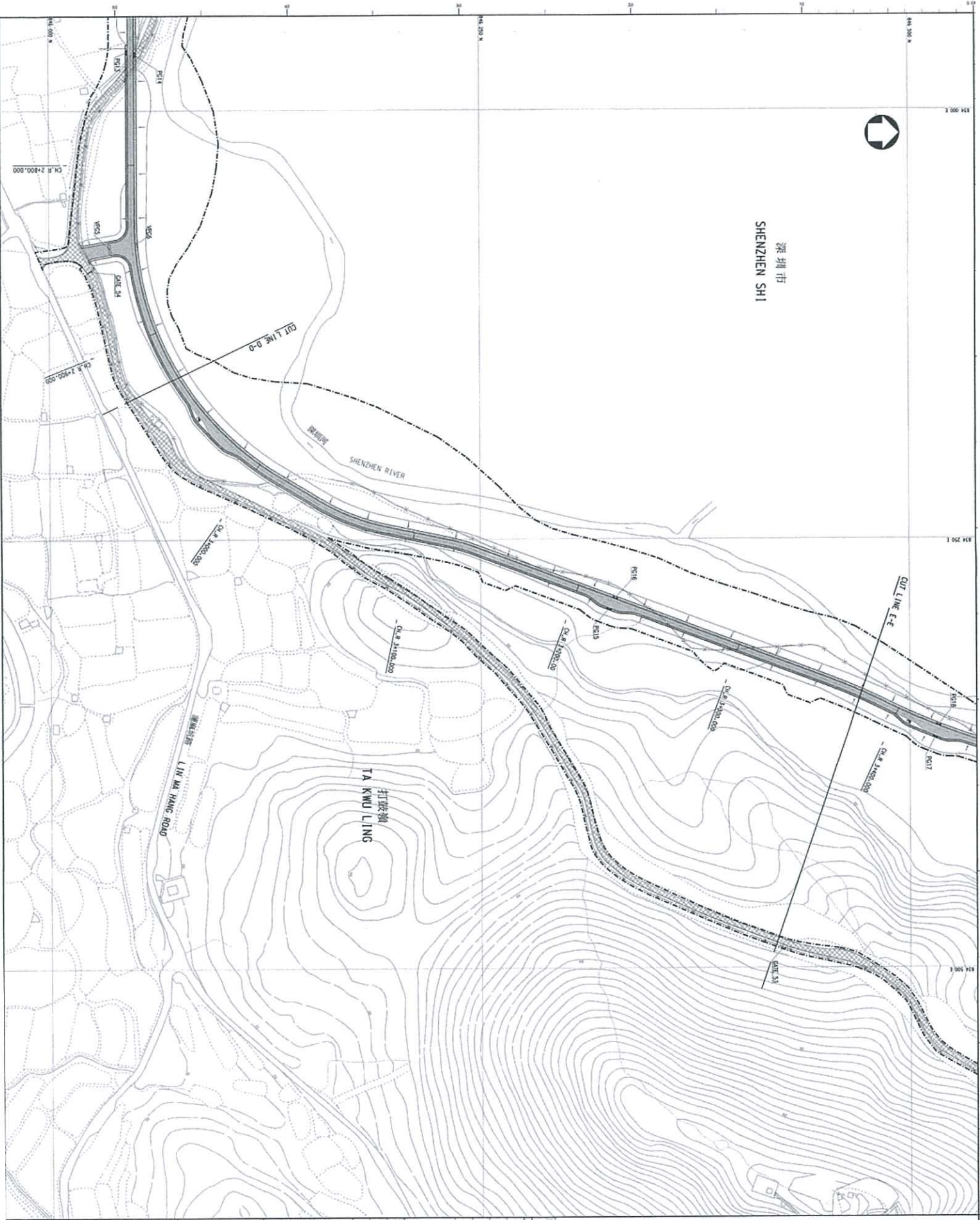
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NO.	DATE	DESCRIPTION	INITIAL
1			

DESIGNED: C. F. CHAN 28 NOV 2011
 DRAWN: T. M. LIU 28 NOV 2011
 CHECKED: W. H. NG 28 NOV 2011
 VERIFIED: L. L. YAU 28 NOV 2011
 APPROVED: [Signature] 28 NOV 2011

Ag. Chief Engineer
 Contract no. DC/2011/05
 File no. DP/8/501808
 Project no. 501808

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

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NO.	DATE	DESCRIPTION	INITIAL
1			

REVISION	NAME	DATE
DESIGNED	L. F. CHAN	28 NOV 2011
DRAWN	L. M. LEE	28 NOV 2011
CHECKED	M. N. HOON	28 NOV 2011
VALIDATED	L. C. LAM	28 NOV 2011
APPROVED		

Ag. Chief Engineer

 28 NOV 2011
 DATE

contract no. DC/2011/06
 H/S no. DP/8/501808
 project no. 501808
 contract

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

drawing title
 GENERAL LAYOUT

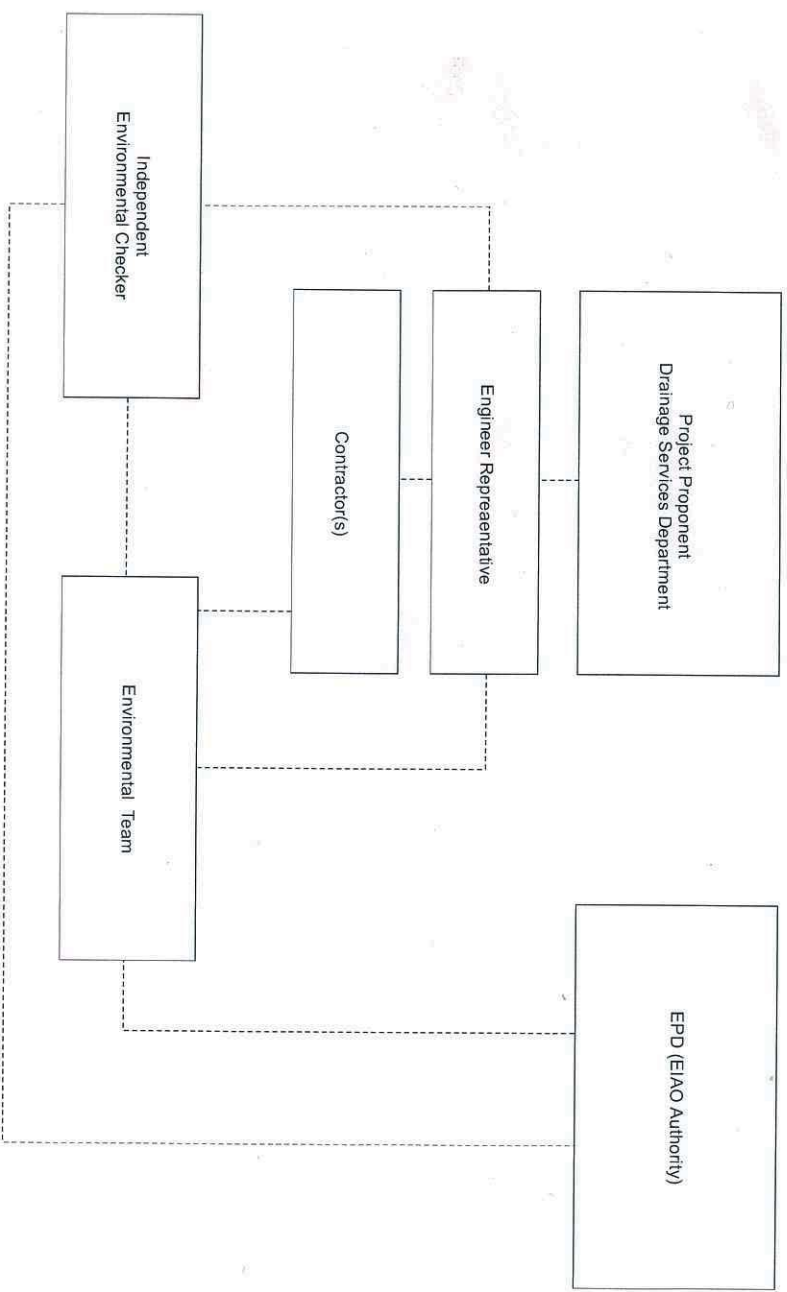
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ANNEX B

***ENVIRONMENTAL MANAGEMENT ORGANIZATION
AND COMMUNICATION LINES***



Key
----- Line of Communication

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	Senior Environmental Consultant	Mr. Wong Fu Nam	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	Implementati on Agent	Implementation Stage			Relevant Legislation & Guidelines
				Des C	Post-C	O	
1. Air Quality							
S4.8	<p>Dust control measures stipulated in the <i>Air Pollution Control (Construction Dust) Regulation</i> will be implemented during the construction phase to control the potential fugitive dust emissions. In particular:</p> <ol style="list-style-type: none"> i. Water spraying 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	<p>The following site practices should be followed during the construction of the Project:</p> <ol style="list-style-type: none"> i. Only well-maintained plant should be operated on-site and plant should be serviced regularly 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 noise 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	<i>Construction Site Runoff and Drainage</i> 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 immediately 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 individual(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 areas immediately 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 re-provisioned/reinstated habitats	Operation	Project Proponent/ Contractor					✓	
5. Waste Management									
S9.6	<u>General</u> 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	<i>Waste Reduction Measures</i> 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	Whole Site / During Construction	Contractor	✓			
S9.6	vii. Plan and stock construction materials carefully to reduce amount of waste generated and avoid unnecessary generation of waste	Whole Site / During Construction	Contractor	✓			

S9.6	<p><i>Excavated Materials</i></p> <p>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</p>	Contract mobilisation / During construction	Contractor	✓	✓	Waste Disposal (Charges for Disposal of Construction Waste) Regulation ETWB TC(W) No.31/2004
S9.6	<p>Ways to minimise generation of C&D materials include:</p> <p>(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.</p> <p>(ii) The Designer shall ensure that the design of levels and dimensions are reasonably accurate to avoid unnecessary demolition, excavation and fill.</p> <p>(iii) The Contractor shall be encouraged to use long lasting materials such as steel and poly-fibre for formwork on site.</p> <p>(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.</p>	Whole Site / During Construction	Contractor	✓		
	<p>Ways to maximize the use of inert C&D material include:</p> <ol style="list-style-type: none"> The Contractor shall review the WMP quarterly to improve the site practice and maximise the use of inert C&D material 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. Temporary storage areas should be identified to resolve programming mismatch between excavation and filling works. The excavated soft inert C&D materials should be reused for backfilling the boundary patrol road, channel embankment, etc. whenever practicable. Good quality top soil should be reused for landscaping. 	Whole Site / During Construction	Contractor	✓		
	<p>Ways to maximise the re-use/recycle of C&D material and/or rock on site include:</p> <ol style="list-style-type: none"> Recyclable materials such as wood and metal should be salvaged for reuse and inert materials utilized as public fill. 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	<p>Ways to maximise the use of recycled C&D materials include:</p> <ol style="list-style-type: none"> 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	<p>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.</p>	Whole Site / During Construction	Contractor	✓		

S9.6	<p><i>Chemical Waste</i> Containers used for storage of chemical waste shall be:</p> <ol style="list-style-type: none"> Maintained in good condition and clearly labelled in both English and Chinese; Suitable for the substance they are holding, resistant to corrosion, and securely closed; and 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	<p>Storage areas for chemical waste shall:</p> <ol style="list-style-type: none"> Be clearly labelled and used solely for the storage of chemical waste; Be enclosed on at least 3 sides; Have adequate ventilation; Be arranged so that incompatible materials are appropriately separated 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 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	<p><i>General Refuse</i> 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.</p>	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

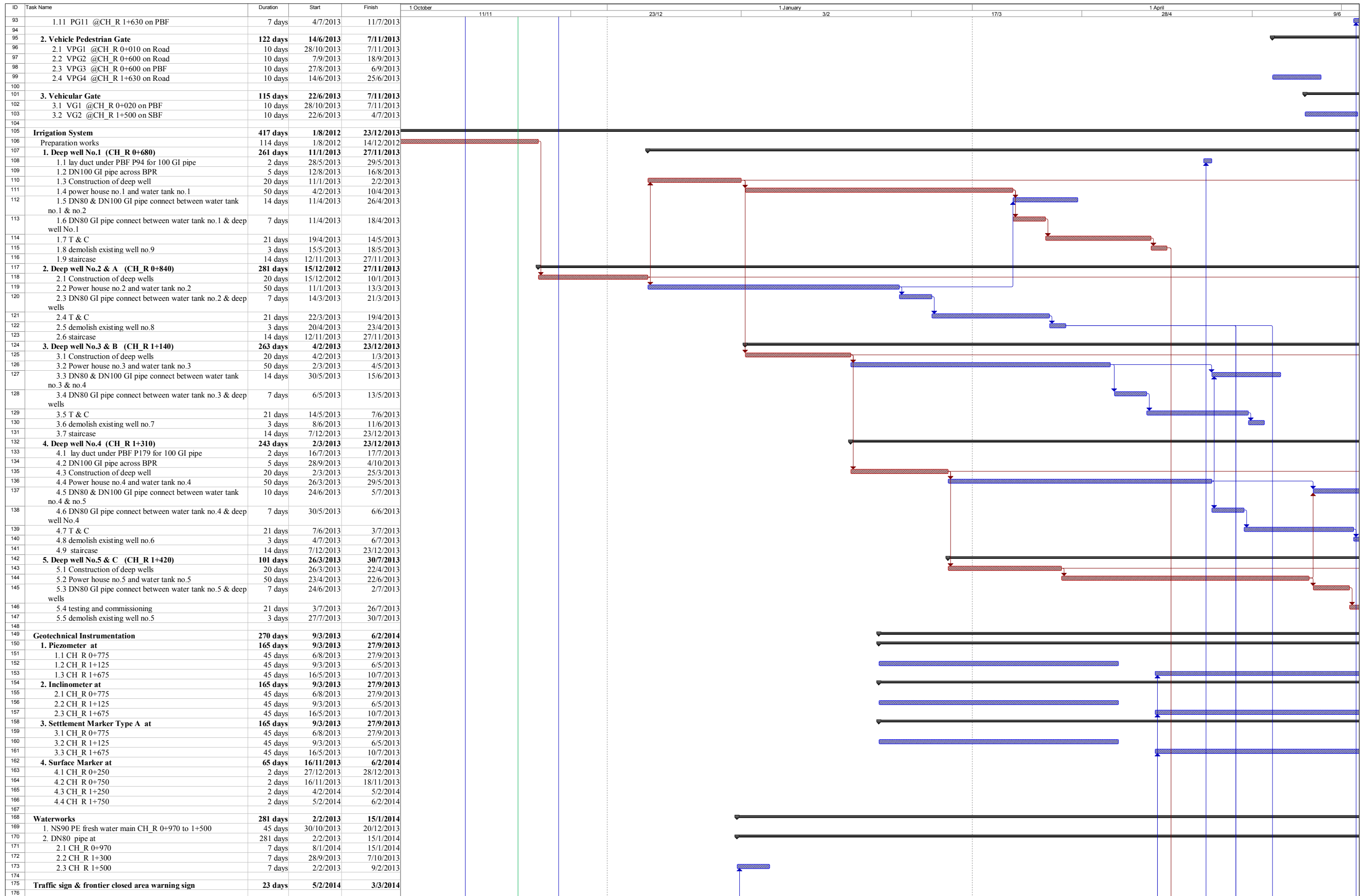
6. Cultural Heritage							
		Pursuant to the Antiquities and Monuments Ordinance, the project proponent should inform the AMO immediately in case of discovery of antiquities or supposed antiquities in the course of soil excavation works in construction stage.	Whole Site / During Construction	Project 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 7.1.3 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 ambience 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 non-concreted 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 Construction	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 October	11/11	23/12	1 January	3/2	17/3	1 April	28/4	9/6
1	Letter of Acceptance	1 day	30/3/2012	30/3/2012									
2													
3	Commencement of Works	1 day	31/3/2012	31/3/2012									
4													
5	Possession of Site	147 days	31/3/2012	27/9/2012									
6	1. Portion A	24 days	1/8/2012	28/8/2012									
7	1.1 Possession of portion A Ch 0+000 to Ch 0+600	1 day	1/8/2012	1/8/2012									
8	1.2 Possession of portion A Ch 0+600 to Ch 2+050	1 day	28/8/2012	28/8/2012									
9	2. Portion B	51 days	30/4/2012	29/6/2012									
10	2.1 Possession of portion B SZ side government land	1 day	30/4/2012	30/4/2012									
11	2.2 Possession of portion B SZ side private land	1 day	22/5/2012	22/5/2012									
12	2.3 Possession of portion B HK side	1 day	29/6/2012	29/6/2012									
13	3. Portion C	27 days	28/8/2012	27/9/2012									
14	3.1 Possession of portion C Ch 2+838 to Ch 3+400	1 day	28/8/2012	28/8/2012									
15	3.2 Possession of portion C Ch 3+400 to Ch 4+271	1 day	27/9/2012	27/9/2012									
16	4. Portion D	1 day	31/3/2012	31/3/2012									
17	5. Portion E	1 day	31/3/2012	31/3/2012									
18	6. Works Area	1 day	31/3/2012	31/3/2012									
19	Notification to EPD (EP 430)	77 days	21/5/2012	20/8/2012									
20	Liaison with HKPF on the boundary security and traffic arrangement along the BPR	145 days	31/3/2012	25/9/2012									
21	Section Completion Dates	740 days	31/3/2012	26/9/2014									
22	1. Section 1 of the Works (Portion A)- Calendar day 607 days	494 days	1/8/2012	29/3/2014									
23	2. Section 2 of the Works (Portion B)- Calendar day 548 days	447 days	30/4/2012	29/10/2013									
24	3. Section 3 of the Works (Portion C)- Calendar day 760 days	620 days	28/8/2012	26/9/2014									
25	4. Section 4 of the Works (Portion D)- Calendar day 365 days	294 days	31/3/2012	28/3/2013									
26	5. Section 5 of the Works (Portion E)- Calendar day 365 days	323 days	31/3/2012	7/5/2013									
27													
28	Safety & Environmental	739 days	2/4/2012	26/9/2014									
29	1. Safety	739 days	2/4/2012	26/9/2014									
30	1.1. Submission of safety plan	35 days	2/4/2012	18/5/2012									
31	1.2. Implementation of safety plan	704 days	19/5/2012	26/9/2014									
32	2. Environmental	739 days	2/4/2012	26/9/2014									
33	2.1. Environmental management plan	45 days	2/4/2012	30/5/2012									
34	2.2. Implementation of EM&A	694 days	31/5/2012	26/9/2014									
35	Engineer's site accommodation	70 days	31/3/2012	28/6/2012									
36	1. Submission	30 days	31/3/2012	11/5/2012									
37	2. Erection	40 days	12/5/2012	28/6/2012									
38													
39	Contractor's Site Accomodation	70 days	31/3/2012	28/6/2012									
40													
41	Construction of Portion A CH_R 0+000 to CH_R 2+050	494 days	1/8/2012	29/3/2014									
42	Possession of Site	1 day	1/8/2012	1/8/2012									
43	11Kv cable CH_R 0+000 to 2+050 by CLP	87 days	7/8/2013	19/11/2013									
44	CH0-400	18 days	28/9/2013	21/10/2013									
45	CH400-800	18 days	20/8/2013	9/9/2013									
46	CH800-1200	18 days	3/10/2013	24/10/2013									
47	CH1200-1600	18 days	30/10/2013	19/11/2013									
48	CH1600-2050	18 days	7/8/2013	27/8/2013									
49													
50	132Kv cable CH_R 1+640 to 2+040 by CLP	60 days	14/9/2013	26/11/2013									
51													
52	Pillar box for security lighting	94 days	4/10/2013	25/1/2014									
53	1. PL01a at CH_R 0+200	21 days	26/11/2013	19/12/2013									
54	2. PL01b at CH_R 0+690	21 days	18/10/2013	11/11/2013									
55	3. PL01c at CH_R 1+310	21 days	2/1/2014	25/1/2014									
56	4. PL02a at CH_R 1+770	21 days	4/10/2013	29/10/2013									
57													
58	LV Switchroom for water pumps	60 days	12/11/2013	23/1/2014									
59	1. WP01 at CH_R 0+680	60 days	12/11/2013	23/1/2014									
60	2. WP02 at CH_R 0+830	21 days	12/11/2013	5/12/2013									
61	3. WP03 at CH_R 1+150	21 days	7/12/2013	3/1/2014									
62	4. WP04 at CH_R 1+320	21 days	7/12/2013	3/1/2014									
63	5. WP05 at CH_R 1+420	21 days	7/12/2013	3/1/2014									
64													
65	LV Switchroom for security lighting PL01 at CH_R 0+990	21 days	3/10/2013	28/10/2013									
66													
67	Security Lighting pole SL001 - 082	89 days	7/8/2013	21/11/2013									
68	1. SL001-009	20 days	28/9/2013	23/10/2013									
69	2. SL010-020	20 days	28/9/2013	23/10/2013									
70	3. SL021-030	20 days	20/8/2013	11/9/2013									
71	4. SL031-041	22 days	3/10/2013	29/10/2013									
72	5. SL042-050	18 days	28/9/2013	21/10/2013									
73	6. SL051-060	20 days	30/10/2013	21/11/2013									
74	7. SL061-072	24 days	7/8/2013	3/9/2013									
75	8. SL073-082	20 days	7/8/2013	29/8/2013									
76													
77	E & M	21 days	11/11/2013	4/12/2013									
78	1. Lay cable for security lighting	14 days	11/11/2013	26/11/2013									
79	2. Lay signal cable for CCTV	14 days	19/11/2013	4/12/2013									
80													
81	Gates	148 days	14/6/2013	7/12/2013									
82	1. Pedestrian Gate	132 days	4/7/2013	7/12/2013									
83	1.1 PG1 @CH_R 0+405 on PBF	7 days	23/7/2013	30/7/2013									
84	1.2 PG2 @CH_R 0+405 on SBF	7 days	19/7/2013	26/7/2013									
85	1.3 PG3 @CH_R 0+680 on SBF	7 days	7/9/2013	14/9/2013									
86	1.4 PG4 @CH_R 0+840 on SBF	7 days	23/10/2013	30/10/2013									
87	1.5 PG5 @CH_R 0+970 on Lo Fong Bridge Police Post	7 days	23/10/2013	30/10/2013									
88	1.6 PG6 @CH_R 0+970 on PBF	7 days	10/10/2013	18/10/2013									
89	1.7 PG7 @CH_R 1+140 on SBF	7 days	27/9/2013	5/10/2013									
90	1.8 PG8 @CH_R 1+300 on SBF	7 days	27/9/2013	5/10/2013									
91	1.9 PG9 @CH_R 1+300 on PBF	7 days	30/11/2013	7/12/2013									
92	1.10 PG10 @CH_R 1+430 on SBF	7 days	27/9/2013	5/10/2013									

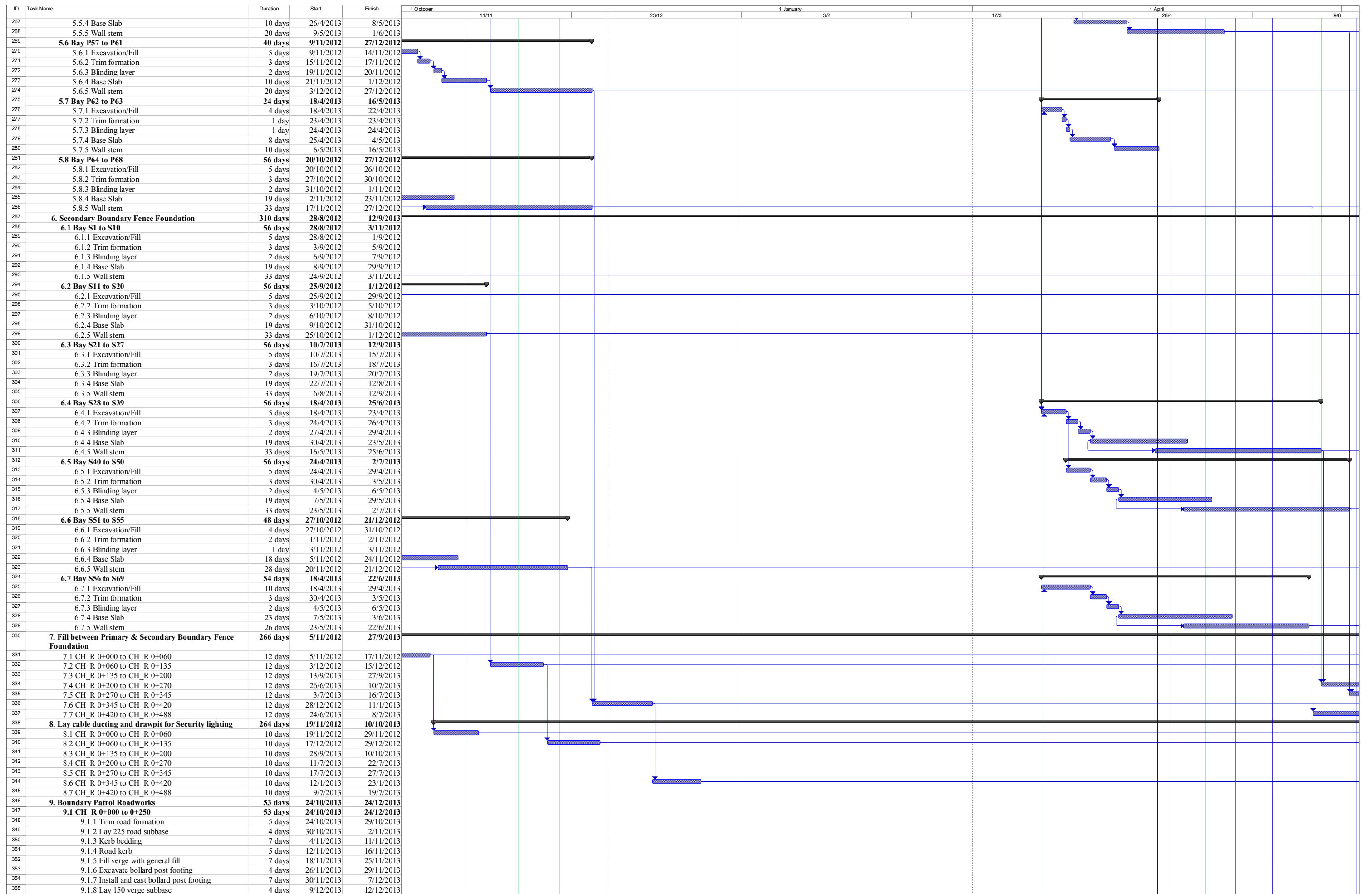


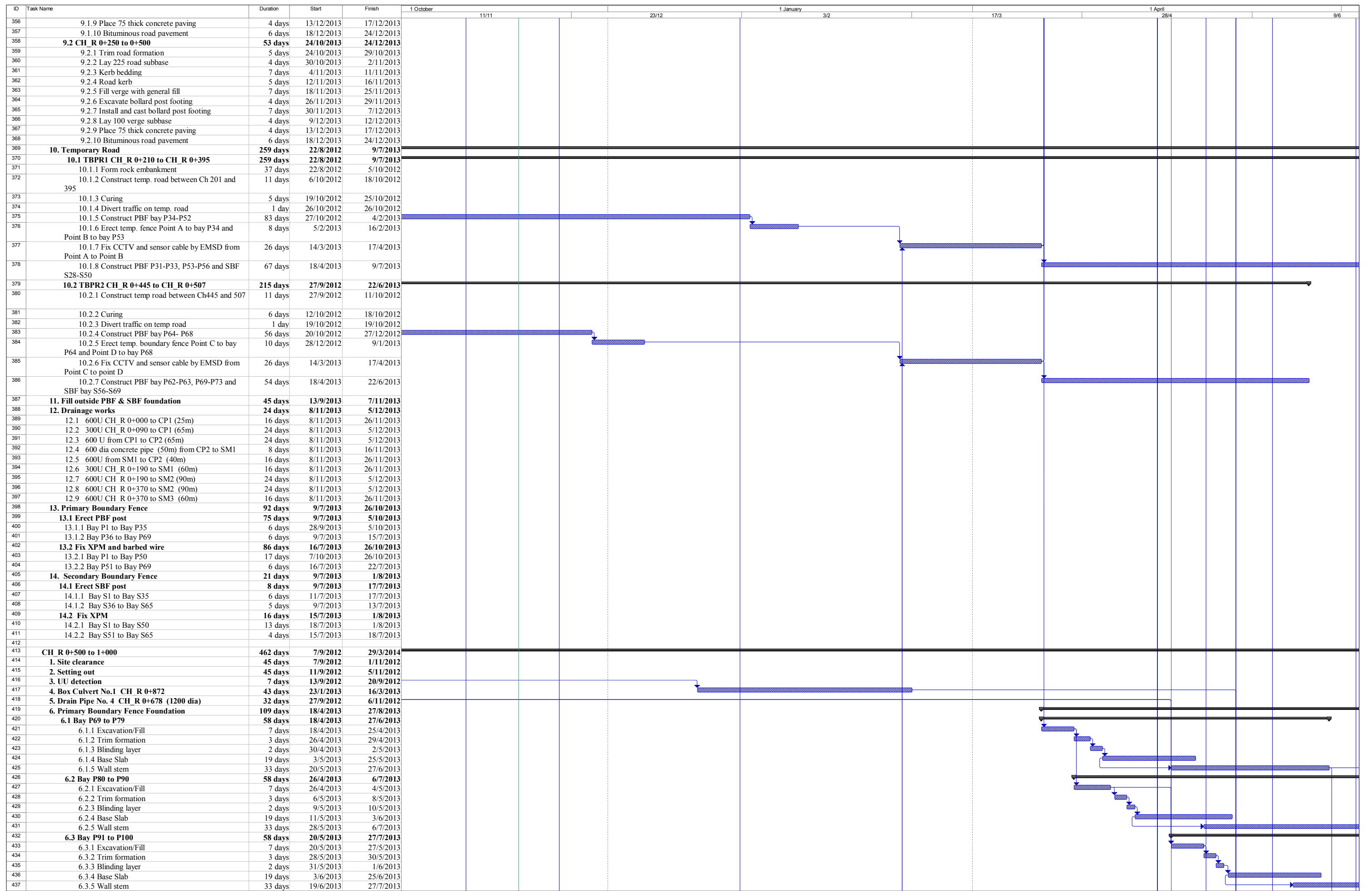
ID	Task Name	Duration	Start	Finish	1 October	11/11	23/12	1 January	3/2	17/3	1 April	28/4	9/6
177	Road marking	4 days	5/2/2014	8/2/2014									
178													
179	Boundary Patrol Road	477 days	21/8/2012	29/3/2014									
180	CH R 0+000 to 0+500	401 days	21/8/2012	24/12/2013									
181	1. Site clearance	45 days	21/8/2012	13/10/2012									
182	2. Setting out	50 days	24/8/2012	24/10/2012									
183	3. UU detection	7 days	27/8/2012	3/9/2012									
184	4. Drain Pipe	55 days	21/8/2012	26/10/2012									
185	4.1 No.1 CH R 0+135 (900 dia)	30 days	21/8/2012	24/9/2012									
186	4.2 No.2 CH R 0+275 (1200 dia)	35 days	13/9/2012	26/10/2012									
187	4.3 No.3 CH R 0+436 (1200 dia)	35 days	13/9/2012	26/10/2012									
188	5. Primary Boundary Fence Foundation	224 days	28/8/2012	1/6/2013									
189	5.1 Bay P1 to P10	52 days	28/8/2012	30/10/2012									
190	5.1.1 Excavation/Fill	5 days	28/8/2012	1/9/2012									
191	5.1.2 Trim formation	3 days	3/9/2012	5/9/2012									
192	5.1.3 Blinding layer	2 days	6/9/2012	7/9/2012									
193	5.1.4 Base Slab	19 days	8/9/2012	29/9/2012									
194	5.1.4.1 Bay P1, P3 and P5	7 days	8/9/2012	15/9/2012									
195	5.1.4.1.1 Shutter	2 days	8/9/2012	10/9/2012									
196	5.1.4.1.2 Steel fixing	2 days	11/9/2012	12/9/2012									
197	5.1.4.1.3 Misc	1 day	13/9/2012	13/9/2012									
198	5.1.4.1.4 Concrete	1 day	14/9/2012	14/9/2012									
199	5.1.4.1.5 Remove Formwork	1 day	15/9/2012	15/9/2012									
200	5.1.4.2 Bay P2 and P4	5 days	17/9/2012	21/9/2012									
201	5.1.4.2.1 Shutter	1 day	17/9/2012	17/9/2012									
202	5.1.4.2.2 Steel fixing	2 days	18/9/2012	19/9/2012									
203	5.1.4.2.3 Concrete	1 day	20/9/2012	20/9/2012									
204	5.1.4.2.4 Remove Formwork	1 day	21/9/2012	21/9/2012									
205	5.1.4.3 Bay P6, P8 and P10	7 days	17/9/2012	24/9/2012									
206	5.1.4.3.1 Shutter	2 days	17/9/2012	18/9/2012									
207	5.1.4.3.2 Steel fixing	2 days	19/9/2012	20/9/2012									
208	5.1.4.3.3 Misc	1 day	21/9/2012	21/9/2012									
209	5.1.4.3.4 Concrete	1 day	22/9/2012	22/9/2012									
210	5.1.4.3.5 Remove Formwork	1 day	24/9/2012	24/9/2012									
211	5.1.4.4 Bay P7 and P9	5 days	25/9/2012	29/9/2012									
212	5.1.4.4.1 Shutter	1 day	25/9/2012	25/9/2012									
213	5.1.4.4.2 Steel fixing	2 days	26/9/2012	27/9/2012									
214	5.1.4.4.3 Concrete	1 day	28/9/2012	28/9/2012									
215	5.1.4.4.4 Remove Formwork	1 day	29/9/2012	29/9/2012									
216	5.1.5 Wall stem	30 days	22/9/2012	30/10/2012									
217	5.1.5.1 Bay P1, P3 and P5	10 days	22/9/2012	5/10/2012									
218	5.1.5.1.1 Outer Formwork	2 days	22/9/2012	24/9/2012									
219	5.1.5.1.2 Steel fixing	2 days	25/9/2012	26/9/2012									
220	5.1.5.1.3 Inner Formwork	2 days	27/9/2012	28/9/2012									
221	5.1.5.1.4 Misc	1 day	29/9/2012	29/9/2012									
222	5.1.5.1.5 Concrete	1 day	3/10/2012	3/10/2012									
223	5.1.5.1.6 Remove Formwork	2 days	4/10/2012	5/10/2012									
224	5.1.5.2 Bay P2 and P4	10 days	6/10/2012	17/10/2012									
225	5.1.5.2.1 Outer Formwork	2 days	6/10/2012	8/10/2012									
226	5.1.5.2.2 Steel fixing	2 days	9/10/2012	10/10/2012									
227	5.1.5.2.3 Inner Formwork	2 days	11/10/2012	12/10/2012									
228	5.1.5.2.4 Misc	1 day	13/10/2012	13/10/2012									
229	5.1.5.2.5 Concrete	1 day	15/10/2012	15/10/2012									
230	5.1.5.2.6 Remove Formwork	2 days	16/10/2012	17/10/2012									
231	5.1.5.3 Bay P6, P8 and P10	10 days	6/10/2012	17/10/2012									
232	5.1.5.3.1 Outer Formwork	2 days	6/10/2012	8/10/2012									
233	5.1.5.3.2 Steel fixing	2 days	9/10/2012	10/10/2012									
234	5.1.5.3.3 Inner Formwork	2 days	11/10/2012	12/10/2012									
235	5.1.5.3.4 Misc	1 day	13/10/2012	13/10/2012									
236	5.1.5.3.5 Concrete	1 day	15/10/2012	15/10/2012									
237	5.1.5.3.6 Remove Formwork	2 days	16/10/2012	17/10/2012									
238	5.1.5.4 Bay P7 and P9	10 days	18/10/2012	30/10/2012									
239	5.1.5.4.1 Outer Formwork	2 days	18/10/2012	19/10/2012									
240	5.1.5.4.2 Steel fixing	2 days	20/10/2012	22/10/2012									
241	5.1.5.4.3 Inner Formwork	2 days	24/10/2012	25/10/2012									
242	5.1.5.4.4 Misc	1 day	26/10/2012	26/10/2012									
243	5.1.5.4.5 Concrete	1 day	27/10/2012	27/10/2012									
244	5.1.5.4.6 Remove Formwork	2 days	29/10/2012	30/10/2012									
245	5.2 Bay P11 to P30	83 days	3/9/2012	11/12/2012									
246	5.2.1 Excavation/Fill	10 days	3/9/2012	13/9/2012									
247	5.2.2 Trim formation	6 days	14/9/2012	20/9/2012									
248	5.2.3 Blinding layer	4 days	21/9/2012	25/9/2012									
249	5.2.4 Base Slab	32 days	26/9/2012	5/11/2012									
250	5.2.5 Wall stem	50 days	13/10/2012	11/12/2012									
251	5.3 Bay P31 to P33	37 days	18/4/2013	1/6/2013									
252	5.3.1 Excavation/Fill	3 days	18/4/2013	20/4/2013									
253	5.3.2 Trim formation	2 days	22/4/2013	23/4/2013									
254	5.3.3 Blinding layer	2 days	24/4/2013	25/4/2013									
255	5.3.4 Base Slab	10 days	26/4/2013	8/5/2013									
256	5.3.5 Wall stem	20 days	9/5/2013	1/6/2013									
257	5.4 Bay P34 to P52	83 days	27/10/2012	4/2/2013									
258	5.4.1 Excavation/Fill	11 days	27/10/2012	8/11/2012									
259	5.4.2 Trim formation	4 days	9/11/2012	13/11/2012									
260	5.4.3 Blinding layer	4 days	14/11/2012	17/11/2012									
261	5.4.4 Base Slab	30 days	19/11/2012	22/12/2012									
262	5.4.5 Wall stem	51 days	4/12/2012	4/2/2013									
263	5.5 Bay P53 to P56	37 days	18/4/2013	1/6/2013									
264	5.5.1 Excavation/Fill	3 days	18/4/2013	20/4/2013									
265	5.5.2 Trim formation	2 days	22/4/2013	23/4/2013									
266	5.5.3 Blinding layer	2 days	24/4/2013	25/4/2013									

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▬ Duration-only
▬ Manual Summary
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▬ Deadline
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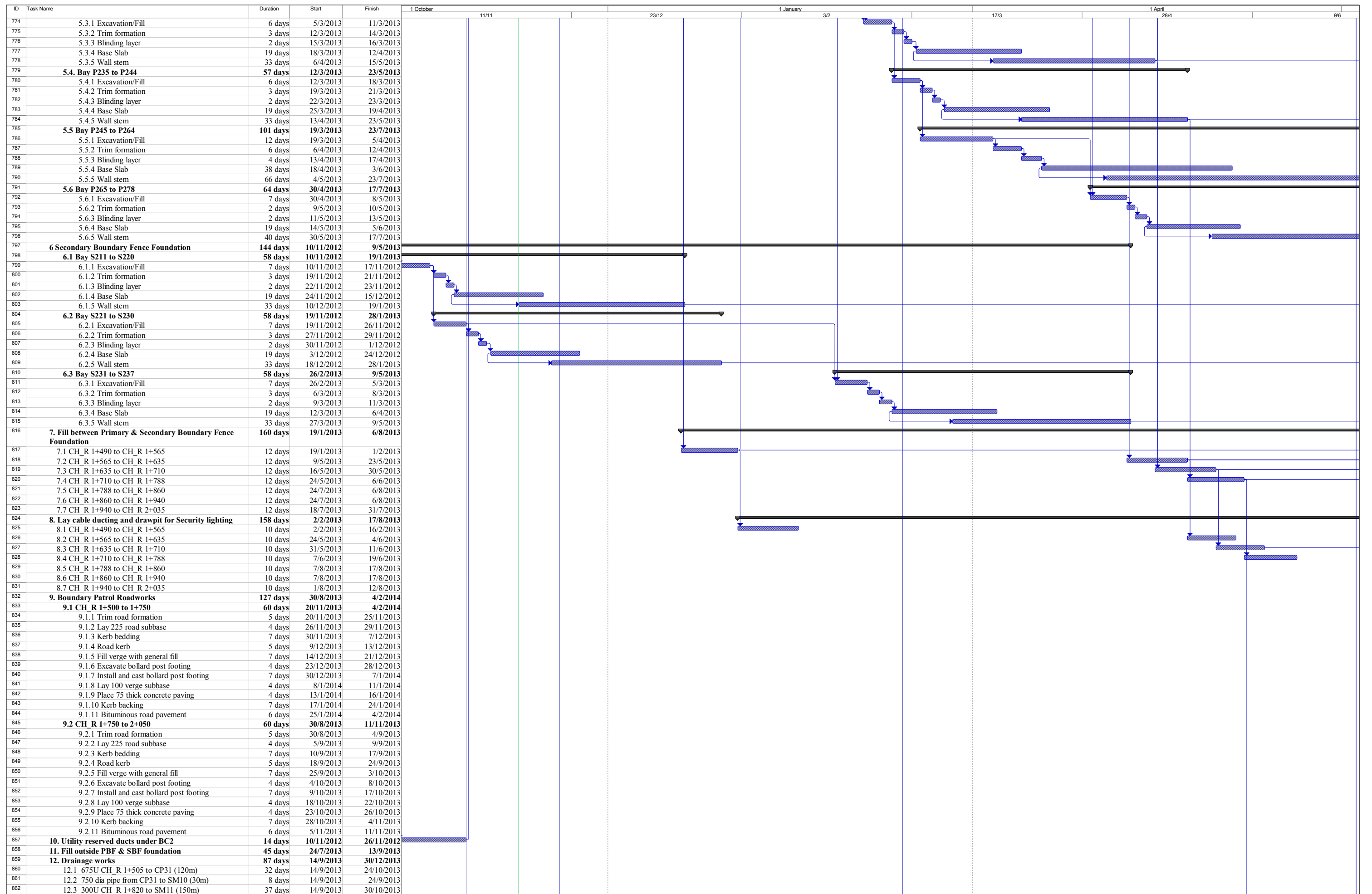
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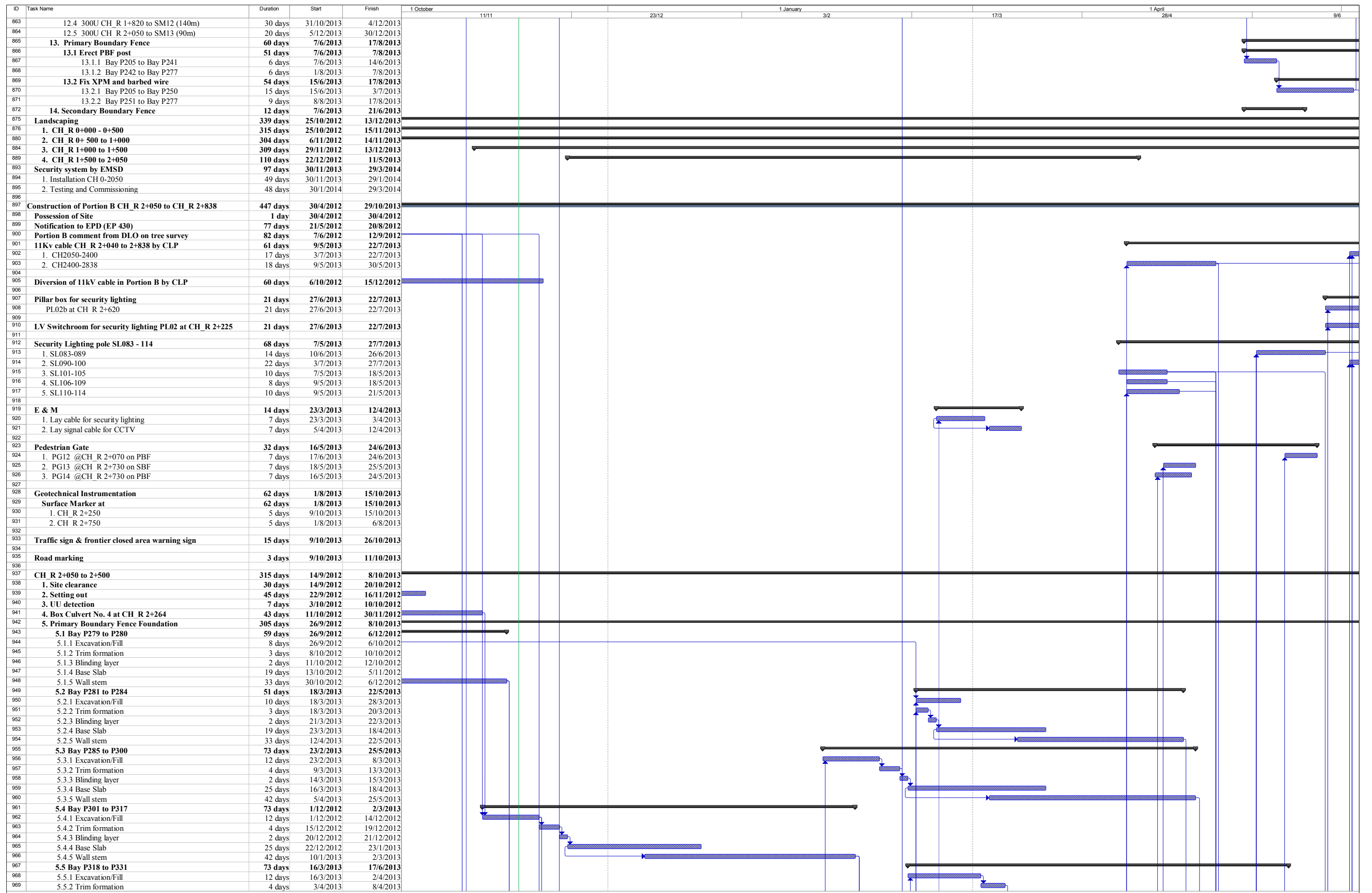




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438	6.4 Bay P101 to P110	58 days	28/5/2013	5/8/2013									
439	6.4.1 Excavation/Fill	7 days	28/5/2013	4/6/2013									
440	6.4.2 Trim formation	3 days	5/6/2013	7/6/2013									
441	6.4.3 Blinding layer	2 days	8/6/2013	10/6/2013									
442	6.4.4 Base Slab	19 days	11/6/2013	4/7/2013									
443	6.4.5 Wall stem	33 days	27/6/2013	5/8/2013									
444	6.5 Bay P111 to P120	58 days	5/6/2013	13/8/2013									
445	6.5.1 Excavation/Fill	7 days	5/6/2013	13/6/2013									
446	6.5.2 Trim formation	3 days	14/6/2013	17/6/2013									
447	6.5.3 Blinding layer	2 days	18/6/2013	19/6/2013									
448	6.5.4 Base Slab	19 days	20/6/2013	12/7/2013									
449	6.5.5 Wall stem	33 days	6/7/2013	13/8/2013									
450	6.6 Bay P121 to P130	58 days	14/6/2013	21/8/2013									
451	6.6.1 Excavation/Fill	7 days	14/6/2013	21/6/2013									
452	6.6.2 Trim formation	3 days	22/6/2013	25/6/2013									
453	6.6.3 Blinding layer	2 days	26/6/2013	27/6/2013									
454	6.6.4 Base Slab	19 days	28/6/2013	20/7/2013									
455	6.6.5 Wall stem	33 days	15/7/2013	21/8/2013									
456	6.7 Bay P131 to P137	56 days	22/6/2013	27/8/2013									
457	6.7.1 Excavation/Fill	5 days	22/6/2013	27/6/2013									
458	6.7.2 Trim formation	3 days	28/6/2013	2/7/2013									
459	6.7.3 Blinding layer	2 days	3/7/2013	4/7/2013									
460	6.7.4 Base Slab	19 days	5/7/2013	26/7/2013									
461	6.7.5 Wall stem	33 days	20/7/2013	27/8/2013									
462	7. Secondary Boundary Fence Foundation	292 days	21/9/2012	16/9/2013									
463	7.1 Bay S70 to S75	56 days	21/9/2012	28/11/2012									
464	7.1.1 Excavation/Fill	5 days	21/9/2012	26/9/2012									
465	7.1.2 Trim formation	3 days	27/9/2012	29/9/2012									
466	7.1.3 Blinding layer	2 days	3/10/2012	4/10/2012									
467	7.1.4 Base Slab	19 days	5/10/2012	27/10/2012									
468	7.1.5 Wall stem	33 days	20/10/2012	28/11/2012									
469	7.2 Bay S76 to S85	58 days	4/10/2012	11/12/2012									
470	7.2.1 Excavation/Fill	7 days	4/10/2012	11/10/2012									
471	7.2.2 Trim formation	3 days	12/10/2012	15/10/2012									
472	7.2.3 Blinding layer	2 days	16/10/2012	17/10/2012									
473	7.2.4 Base Slab	19 days	18/10/2012	9/11/2012									
474	7.2.5 Wall stem	33 days	3/11/2012	11/12/2012									
475	7.3 Bay S86 to S95	58 days	20/5/2013	27/7/2013									
476	7.3.1 Excavation/Fill	7 days	20/5/2013	27/5/2013									
477	7.3.2 Trim formation	3 days	28/5/2013	30/5/2013									
478	7.3.3 Blinding layer	2 days	31/5/2013	1/6/2013									
479	7.3.4 Base Slab	19 days	3/6/2013	25/6/2013									
480	7.3.5 Wall stem	33 days	19/6/2013	27/7/2013									
481	7.4 Bay S96 to S105	58 days	28/5/2013	5/8/2013									
482	7.4.1 Excavation/Fill	7 days	28/5/2013	4/6/2013									
483	7.4.2 Trim formation	3 days	5/6/2013	7/6/2013									
484	7.4.3 Blinding layer	2 days	8/6/2013	10/6/2013									
485	7.4.4 Base Slab	19 days	11/6/2013	4/7/2013									
486	7.4.5 Wall stem	33 days	27/6/2013	5/8/2013									
487	7.5 Bay S106 to S115	58 days	5/6/2013	13/8/2013									
488	7.5.1 Excavation/Fill	7 days	5/6/2013	13/6/2013									
489	7.5.2 Trim formation	3 days	14/6/2013	17/6/2013									
490	7.5.3 Blinding layer	2 days	18/6/2013	19/6/2013									
491	7.5.4 Base Slab	19 days	20/6/2013	12/7/2013									
492	7.5.5 Wall stem	33 days	6/7/2013	13/8/2013									
493	7.6 Bay S116 to S125	58 days	14/6/2013	21/8/2013									
494	7.6.1 Excavation/Fill	7 days	14/6/2013	21/6/2013									
495	7.6.2 Trim formation	3 days	22/6/2013	25/6/2013									
496	7.6.3 Blinding layer	2 days	26/6/2013	27/6/2013									
497	7.6.4 Base Slab	19 days	28/6/2013	20/7/2013									
498	7.6.5 Wall stem	33 days	15/7/2013	21/8/2013									
499	7.7 Bay S126 to S139	73 days	22/6/2013	16/9/2013									
500	7.7.1 Excavation/Fill	10 days	22/6/2013	4/7/2013									
501	7.7.2 Trim formation	3 days	5/7/2013	8/7/2013									
502	7.7.3 Blinding layer	2 days	9/7/2013	10/7/2013									
503	7.7.4 Base Slab	24 days	11/7/2013	7/8/2013									
504	7.7.5 Wall stem	45 days	26/7/2013	16/9/2013									
505	8. Fill between Primary & Secondary Boundary Fence Foundation	80 days	28/6/2013	2/10/2013									
506	8.1 CH_R 0+488 to CH_R 0+570	12 days	28/6/2013	12/7/2013									
507	8.2 CH_R 0+570 to CH_R 0+640	12 days	8/7/2013	20/7/2013									
508	8.3 CH_R 0+640 to CH_R 0+715	12 days	29/7/2013	10/8/2013									
509	8.4 CH_R 0+715 to CH_R 0+790	12 days	6/8/2013	19/8/2013									
510	8.5 CH_R 0+790 to CH_R 0+864	12 days	14/8/2013	27/8/2013									
511	8.6 CH_R 0+864 to CH_R 0+939	12 days	22/8/2013	4/9/2013									
512	8.7 CH_R 0+939 to CH_R 0+990	12 days	17/9/2013	2/10/2013									
513	9. Lay cable ducting and drawpit for Security lighting	78 days	13/7/2013	15/10/2013									
514	9.1 CH_R 0+488 to CH_R 0+570	10 days	13/7/2013	24/7/2013									
515	9.2 CH_R 0+570 to CH_R 0+640	10 days	22/7/2013	1/8/2013									
516	9.3 CH_R 0+640 to CH_R 0+715	10 days	12/8/2013	22/8/2013									
517	9.4 CH_R 0+715 to CH_R 0+790	10 days	20/8/2013	30/8/2013									
518	9.5 CH_R 0+790 to CH_R 0+864	10 days	28/8/2013	7/9/2013									
519	9.6 CH_R 0+864 to CH_R 0+939	10 days	5/9/2013	16/9/2013									
520	9.7 CH_R 0+939 to CH_R 0+990	10 days	3/10/2013	15/10/2013									
521	10. Boundary Patrol Roadworks	91 days	12/9/2013	2/1/2014									
522	10.1 CH_R 0+500 to 0+750	53 days	12/9/2013	15/11/2013									
523	10.1.1 Trim road formation	5 days	12/9/2013	17/9/2013									
524	10.1.2 Lay 225 road subbase	4 days	18/9/2013	23/9/2013									
525	10.1.3 Kerb bedding	7 days	24/9/2013	2/10/2013									
526	10.1.4 Road kerb	5 days	3/10/2013	8/10/2013									

ID	Task Name	Duration	Start	Finish	1 October	11/11	23/12	1 January	3/2	17/3	1 April	28/4	9/6
527	10.1.5 Fill verge with general fill	7 days	9/10/2013	17/10/2013									
528	10.1.6 Excavate bollard post footing	4 days	18/10/2013	22/10/2013									
529	10.1.7 Install and cast bollard post footing	7 days	23/10/2013	30/10/2013									
530	10.1.8 Lay 100 verge subbase	4 days	31/10/2013	4/11/2013									
531	10.1.9 Place 75 thick concrete paving	4 days	5/11/2013	8/11/2013									
532	10.1.10 Bituminous road pavement	6 days	9/11/2013	15/11/2013									
533	10.2 CH R 0+750 to 1+000	53 days	30/10/2013	2/1/2014									
534	10.2.1 Trim road formation	5 days	30/10/2013	4/11/2013									
535	10.2.2 Lay 225 road subbase	4 days	5/11/2013	8/11/2013									
536	10.2.3 Kerb bedding	7 days	9/11/2013	16/11/2013									
537	10.2.4 Road kerb	5 days	18/11/2013	22/11/2013									
538	10.2.5 Fill verge with general fill	7 days	23/11/2013	30/11/2013									
539	10.2.6 Excavate bollard post footing	4 days	2/12/2013	5/12/2013									
540	10.2.7 Install and cast bollard post footing	7 days	6/12/2013	13/12/2013									
541	10.2.8 Lay 100 verge subbase	4 days	14/12/2013	18/12/2013									
542	10.2.9 Place 75 thick concrete paving	4 days	19/12/2013	23/12/2013									
543	10.2.10 Bituminous road pavement	6 days	24/12/2013	2/1/2014									
544	11. Utility reserved ducts under	18 days	17/9/2012	9/10/2012									
545	11.1 CH R 0+600	9 days	21/9/2012	3/10/2012									
546	11.2 DP4	9 days	17/9/2012	26/9/2012									
547	11.3 Lo Fong Bridge Post	14 days	21/9/2012	9/10/2012									
548	12. Fill outside PBF & SBF foundation	45 days	17/9/2013	11/11/2013									
549	13. Drainage works	106 days	12/11/2013	21/3/2014									
550	13.1 600U CH R 0+600 to SM3 (170m)	48 days	12/11/2013	9/1/2014									
551	13.2 600U CH R 0+600 to SM4 (80m)	24 days	12/11/2013	9/12/2013									
552	13.3 600U CH R 0+810 to SM4 (130m)	40 days	12/11/2013	30/12/2013									
553	13.4 600U CH R 0+810 to SM5 (70m)	24 days	12/11/2013	9/12/2013									
554	13.5 600U CP4 to SM6 (80m)	24 days	12/11/2013	9/12/2013									
555	13.6 300U from Lo Fong Bridge Post to SM6 (70m)	24 days	22/2/2014	21/3/2014									
556	13.7 600U CP4 to CP5 (15m)	8 days	22/2/2014	3/3/2014									
557	14. Primary Boundary Fence	54 days	20/8/2013	24/10/2013									
558	14.1 Erect PBF post	42 days	20/8/2013	9/10/2013									
559	14.1.1 Bay P70 to Bay P103	6 days	20/8/2013	26/8/2013									
560	14.1.2 Bay P104 to Bay P137	6 days	3/10/2013	9/10/2013									
561	14.2 Fix XPM and barbed wire	48 days	27/8/2013	24/10/2013									
562	14.2.1 Bay P70 to Bay P100	10 days	27/8/2013	6/9/2013									
563	14.2.2 Bay P101 to Bay P137	12 days	10/10/2013	24/10/2013									
564	15. Secondary Boundary Fence	52 days	20/8/2013	22/10/2013									
565	15.1 Erect SBF post	42 days	20/8/2013	9/10/2013									
566	15.1.1 Bay S66 to Bay S103	7 days	20/8/2013	27/8/2013									
567	15.1.2 Bay S104 to Bay S139	6 days	3/10/2013	9/10/2013									
568	15.2 Fix XPM	45 days	28/8/2013	22/10/2013									
569	15.2.1 Bay S66 to Bay S100	9 days	28/8/2013	6/9/2013									
570	15.2.2 Bay S101 to Bay S139	10 days	10/10/2013	22/10/2013									
571	16. HKPF Lo Fong Bridge Post	146 days	3/10/2013	29/3/2014									
572	16.1 Excavation	5 days	3/10/2013	8/10/2013									
573	16.2 Trim formation and blinding concrete	3 days	9/10/2013	11/10/2013									
574	16.3 Foundation slab	14 days	12/10/2013	29/10/2013									
575	16.4 Wall construction	21 days	30/10/2013	22/11/2013									
576	16.5 Fill on top of foundation slab and plumbing works	14 days	23/11/2013	9/12/2013									
577	16.6 100 thick on grade slab blinding layer	1 day	10/12/2013	10/12/2013									
578	16.7 150 thick on grade slab	7 days	11/12/2013	18/12/2013									
579	16.8 Roof slab	30 days	19/12/2013	25/1/2014									
580	16.9 Door, louvre, window and roller shutter	14 days	27/1/2014	14/2/2014									
581	16.10 Intenal finishes	14 days	15/2/2014	3/3/2014									
582	16.11 External finishes	10 days	27/1/2014	10/2/2014									
583	16.12 Roofing and downpipe	35 days	27/1/2014	11/3/2014									
584	16.13 Solar panel installation and water tank	16 days	12/3/2014	29/3/2014									
585	16.14 Aluminium handrailing and cat ladder	14 days	12/3/2014	27/3/2014									
586	16.15 Sludge tank	14 days	19/12/2013	7/1/2014									
587	16.16 Outdoor concrete paving	10 days	11/2/2014	21/2/2014									
588	17. Electrical meter cabinet of HKPF Lo Fong Bridge Post at CH R 0+980	41 days	11/2/2014	29/3/2014									
589	17.1 Construction of electrical meter cabinet	15 days	11/2/2014	27/2/2014									
590	17.2 Installation of electrical device in electrical cabinet	26 days	28/2/2014	29/3/2014									
591													
592	CH R 1+000 to 1+500	407 days	3/10/2012	17/2/2014									
593													
594	CH R 1+500 to -2+050	376 days	27/10/2012	4/2/2014									
595	1. Site clearance	30 days	27/10/2012	30/11/2012									
596	2. Setting out	45 days	31/10/2012	21/12/2012									
597	3. UU detection	7 days	2/11/2012	9/11/2012									
598	4. Box Culvert	136 days	10/11/2012	29/4/2013									
599	4.1 No. 2 at CH R 1+661	72 days	27/11/2012	25/2/2013									
600	4.2 No. 3 at CH R 1+960	136 days	10/11/2012	29/4/2013									
601	5. Primary Boundary Fence Foundation	205 days	10/11/2012	23/7/2013									
602	5.1 Bay P205 to P214	57 days	10/11/2012	18/1/2013									
603	5.1.1 Excavation/Fill	6 days	10/11/2012	16/11/2012									
604	5.1.2 Trim formation	3 days	17/11/2012	20/11/2012									
605	5.1.3 Blinding layer	2 days	21/11/2012	22/11/2012									
606	5.1.4 Base Slab	19 days	23/11/2012	14/12/2012									
607	5.1.5 Wall stem	33 days	8/12/2012	18/1/2013									
608	5.2 Bay P215 to P224	57 days	26/2/2013	8/5/2013									
609	5.2.1 Excavation/Fill	6 days	26/2/2013	4/3/2013									
610	5.2.2 Trim formation	3 days	5/3/2013	7/3/2013									
611	5.2.3 Blinding layer	2 days	8/3/2013	9/3/2013									
612	5.2.4 Base Slab	19 days	11/3/2013	5/4/2013									
613	5.2.5 Wall stem	33 days	26/3/2013	8/5/2013									
614	5.3 Bay P225 to P234	57 days	5/3/2013	15/5/2013									

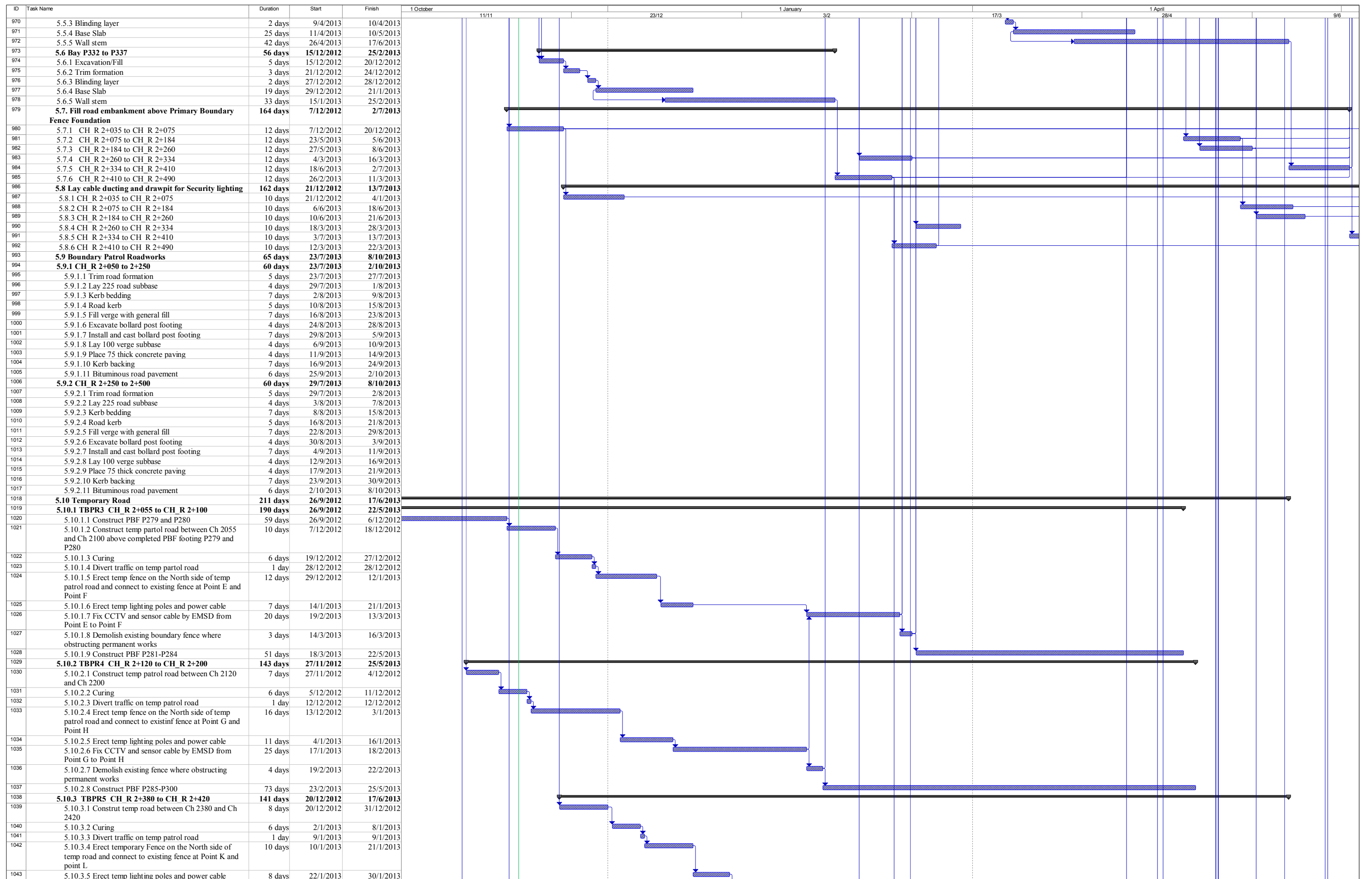


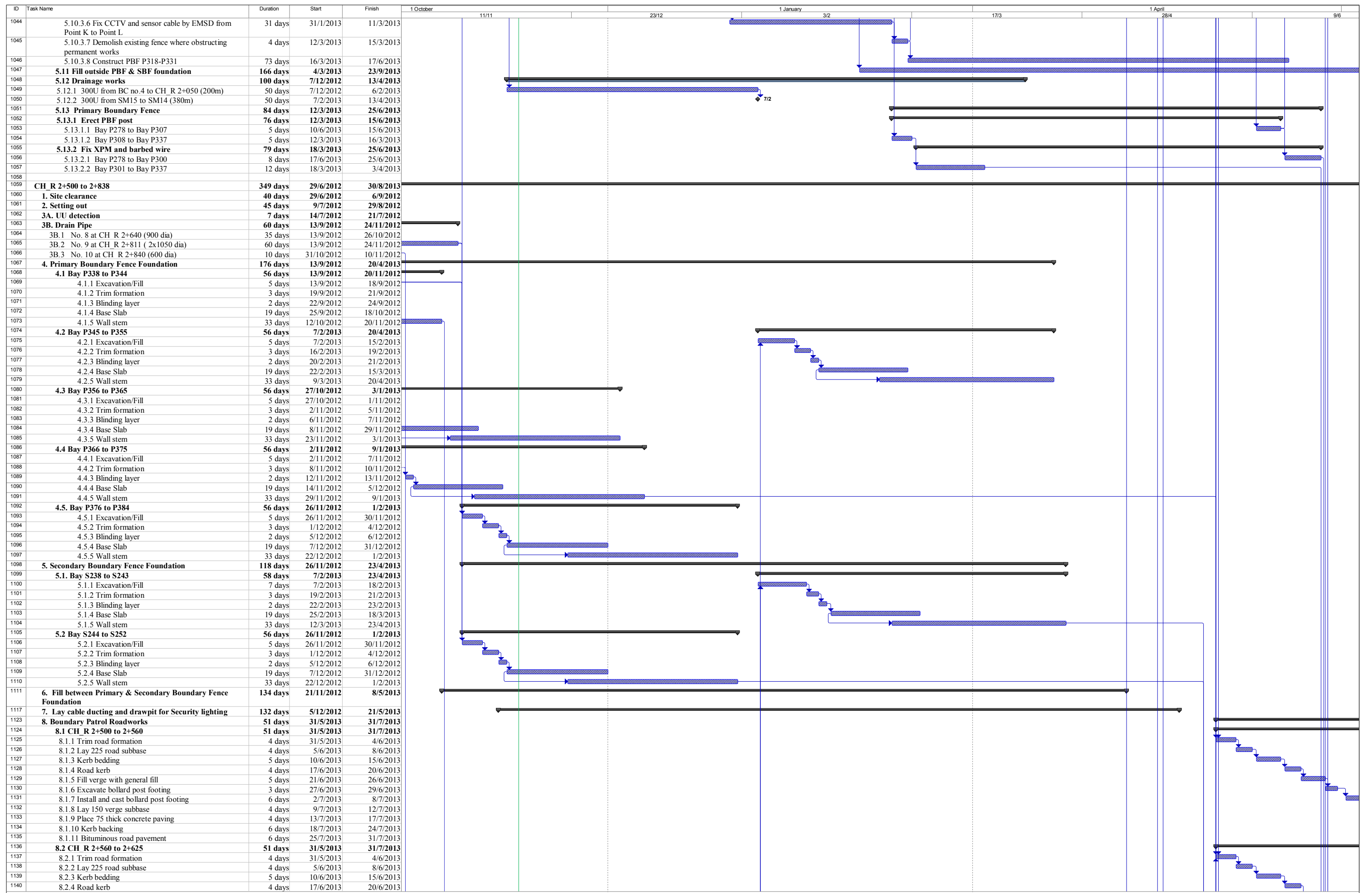


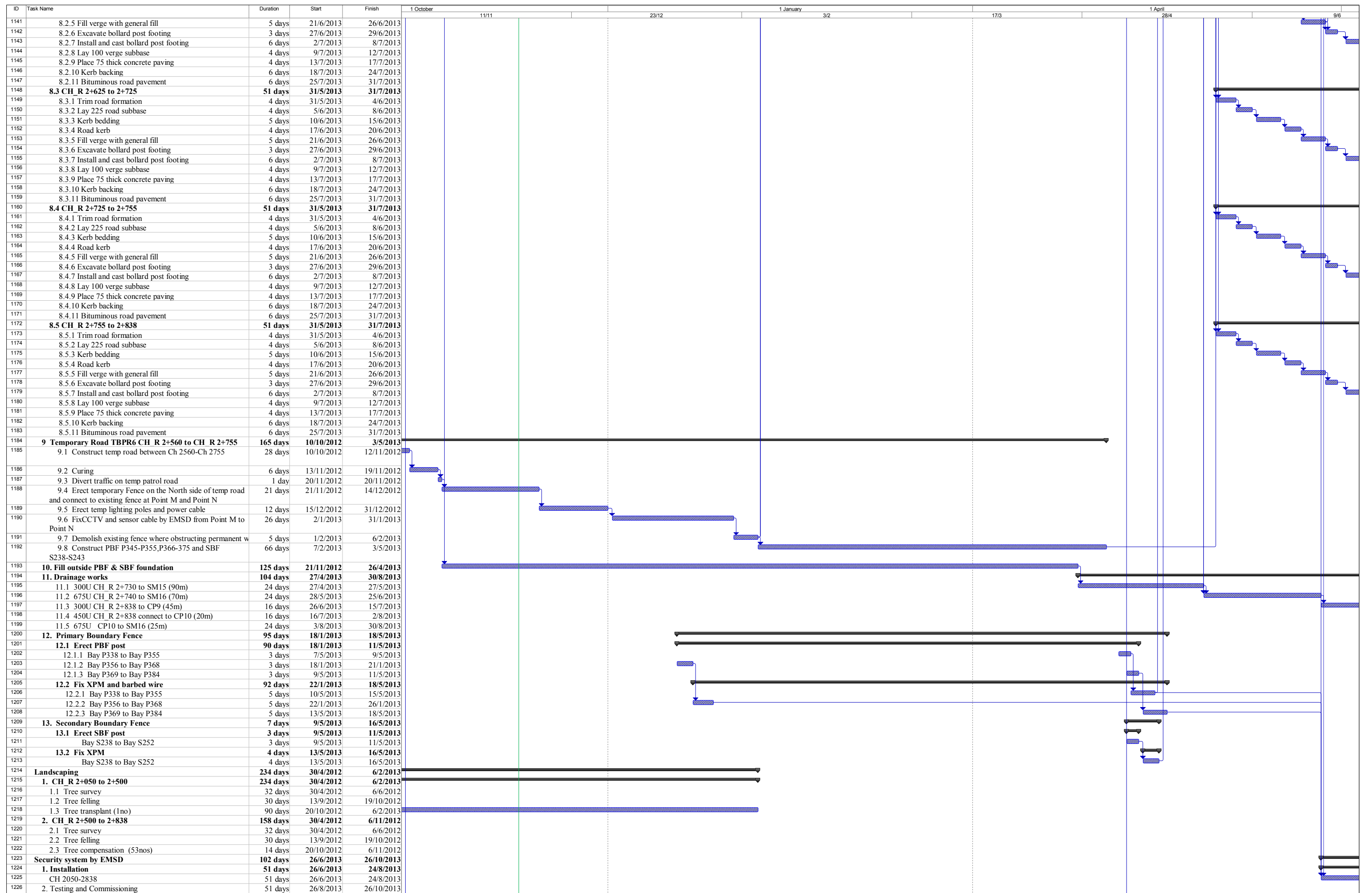
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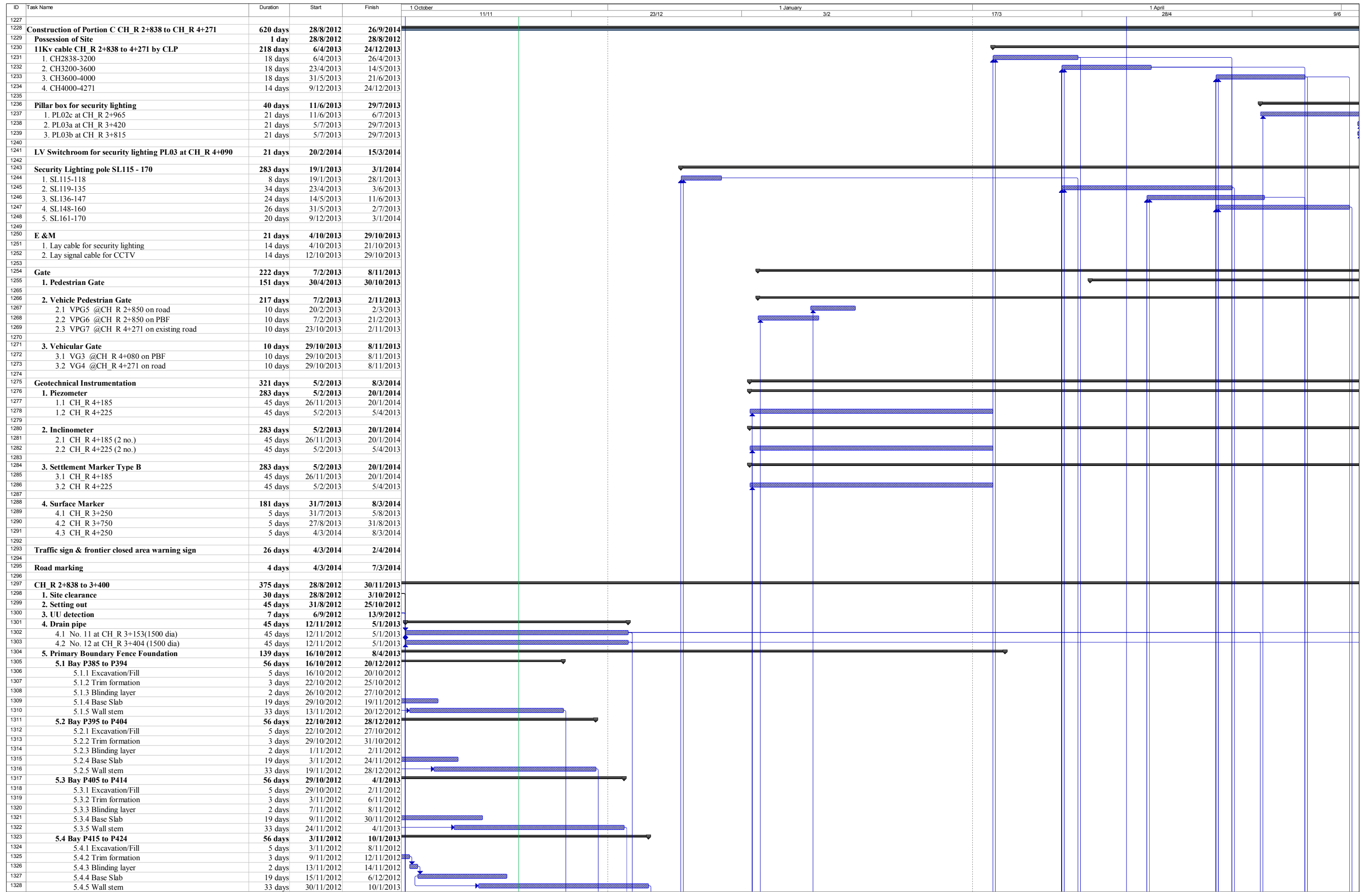
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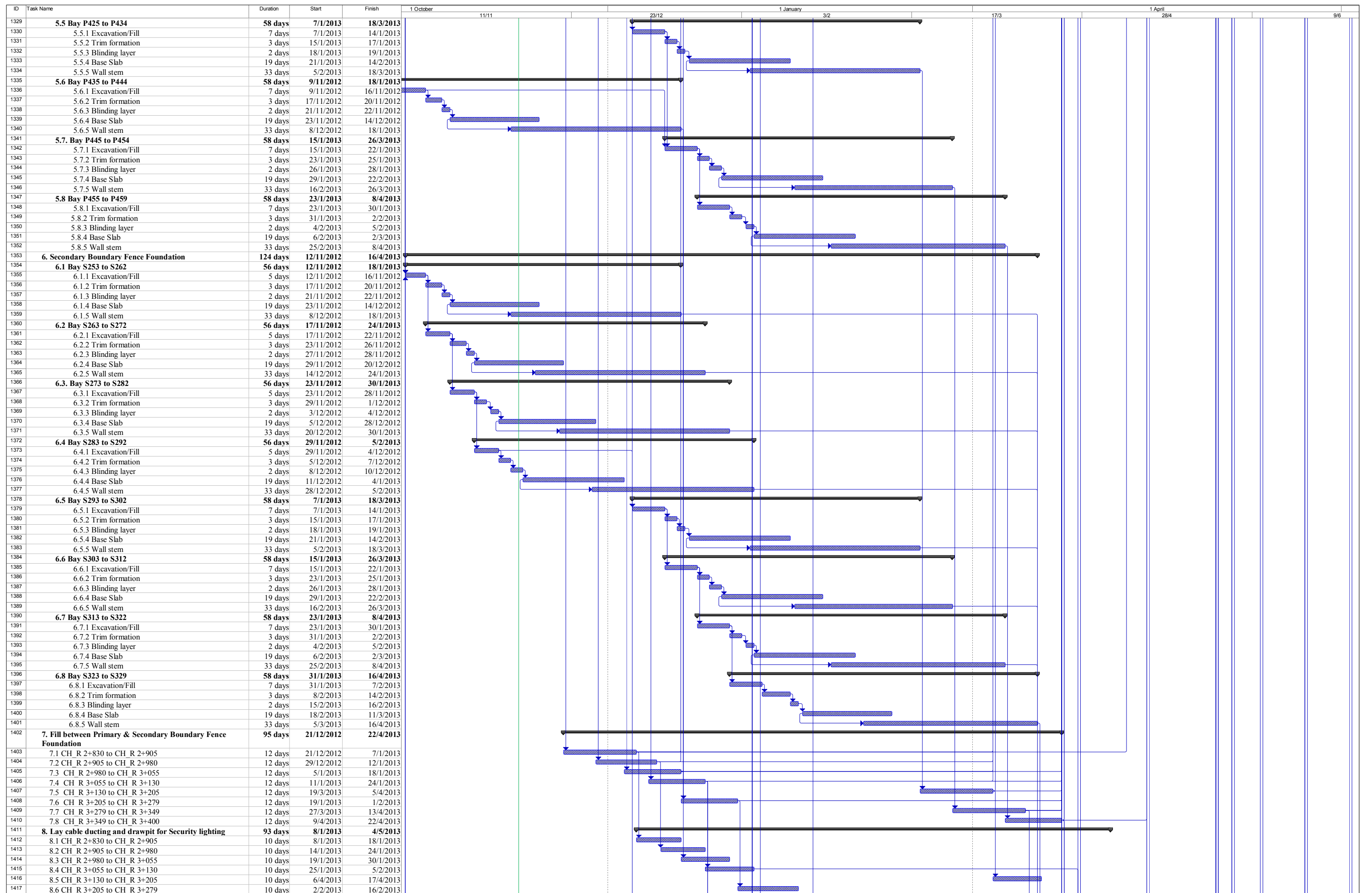
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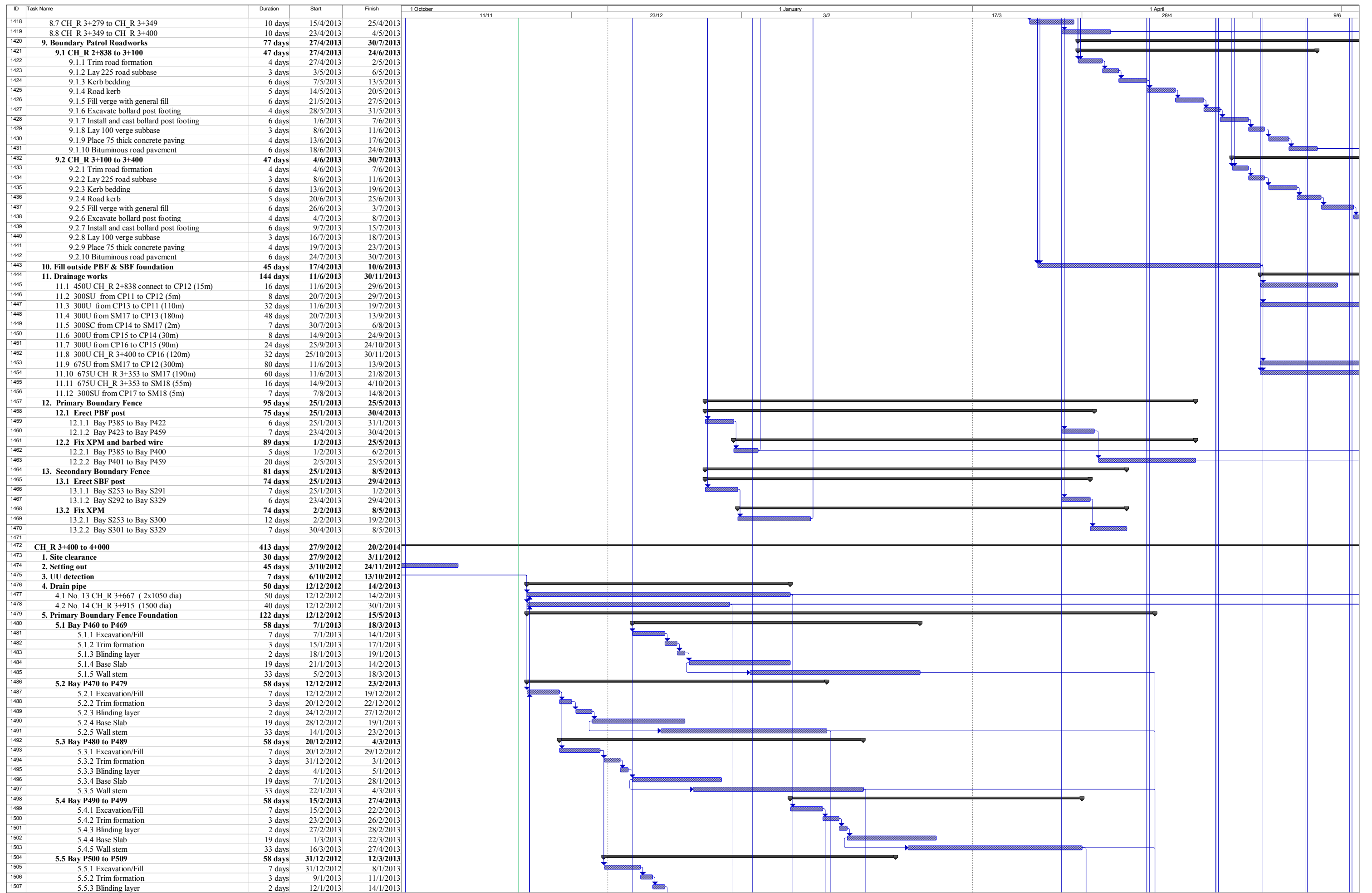


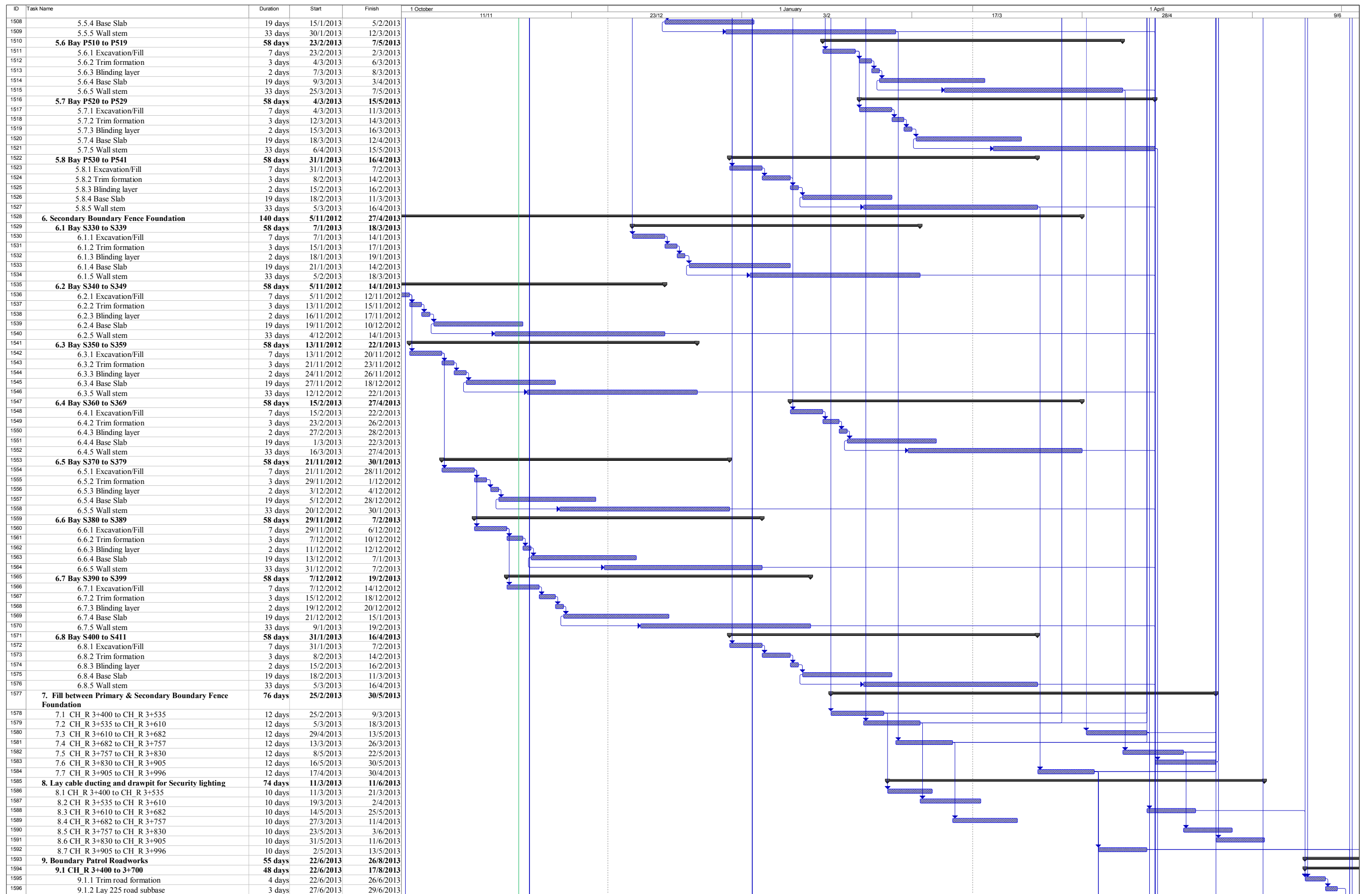


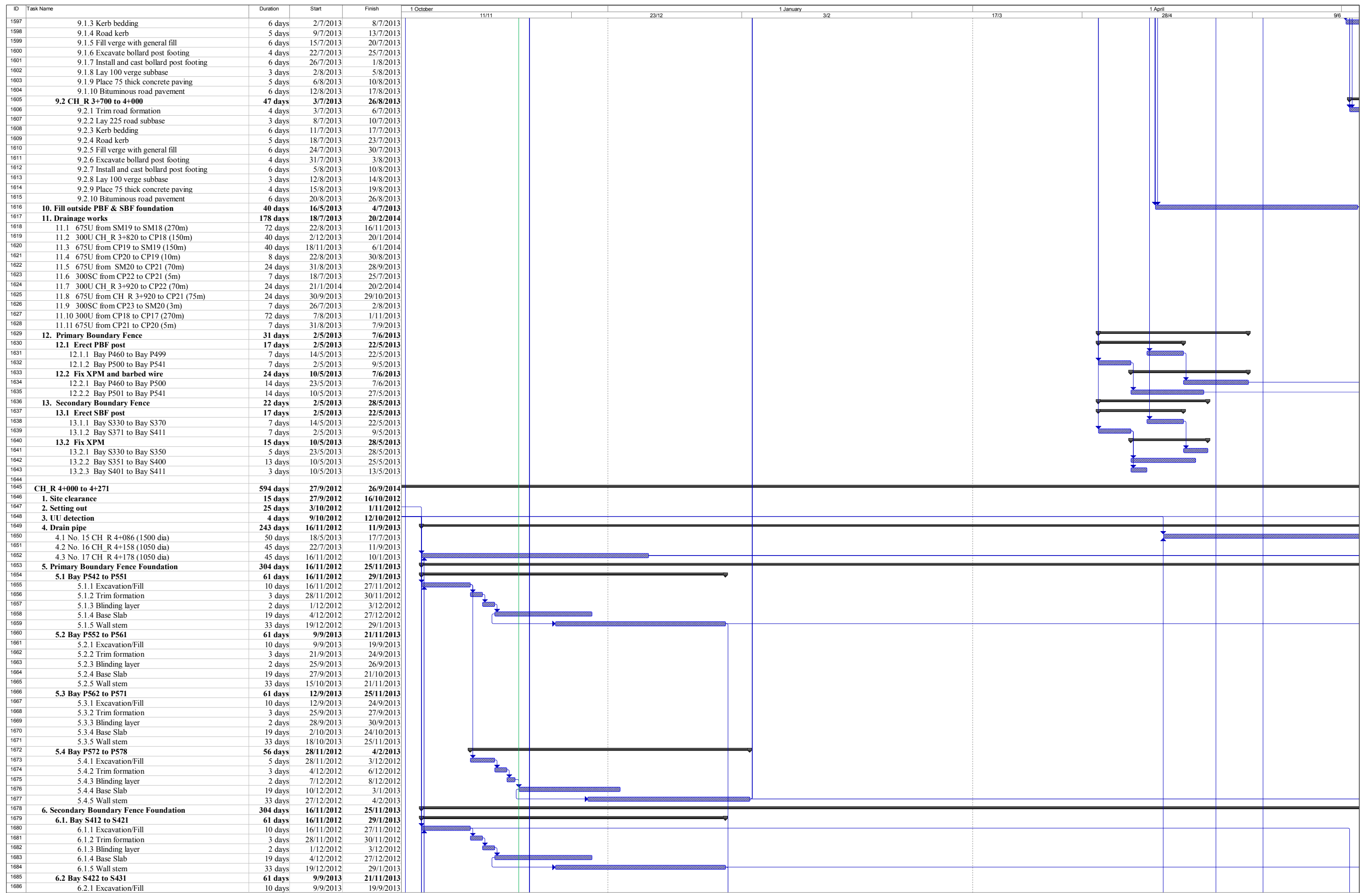


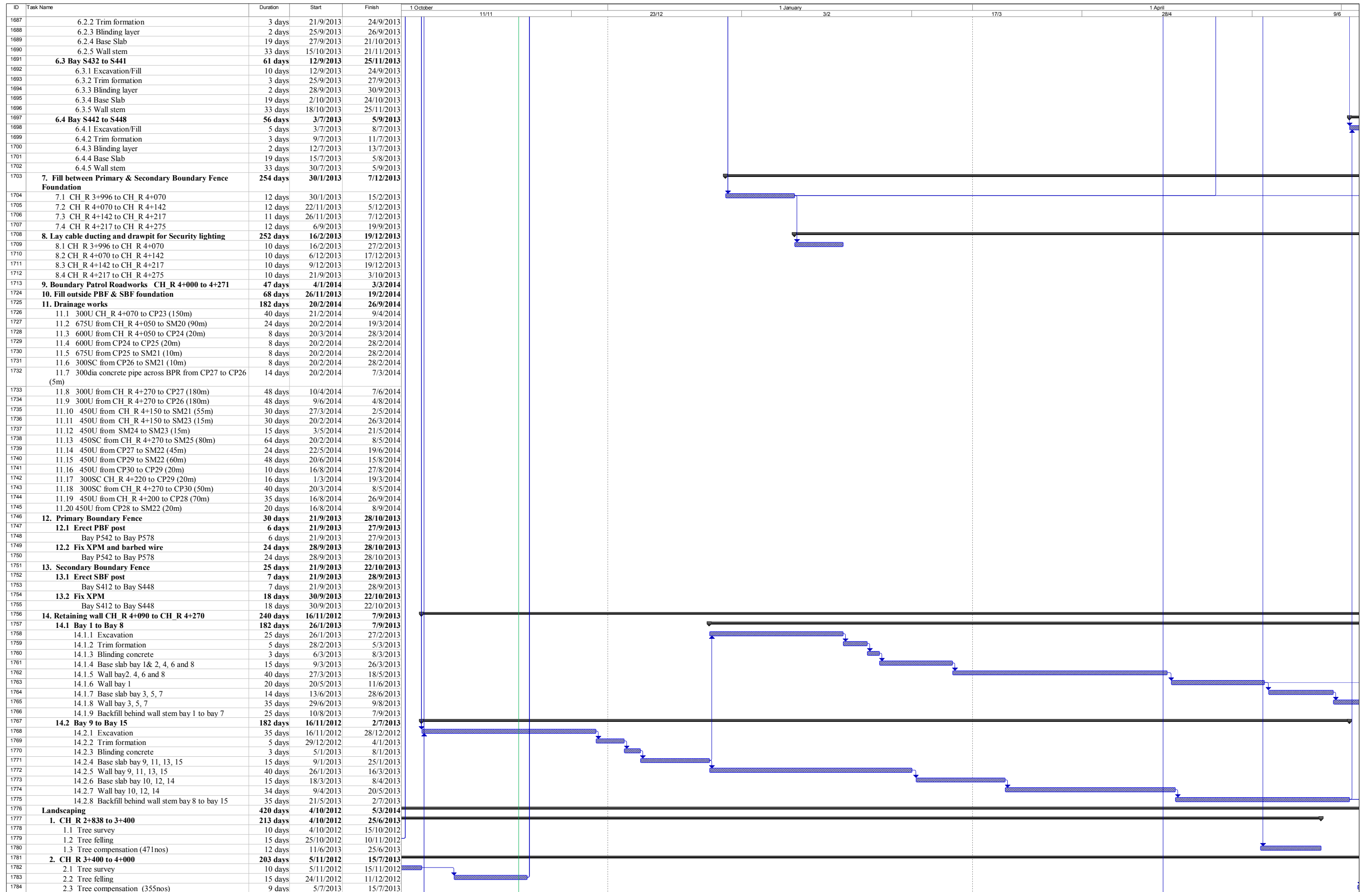










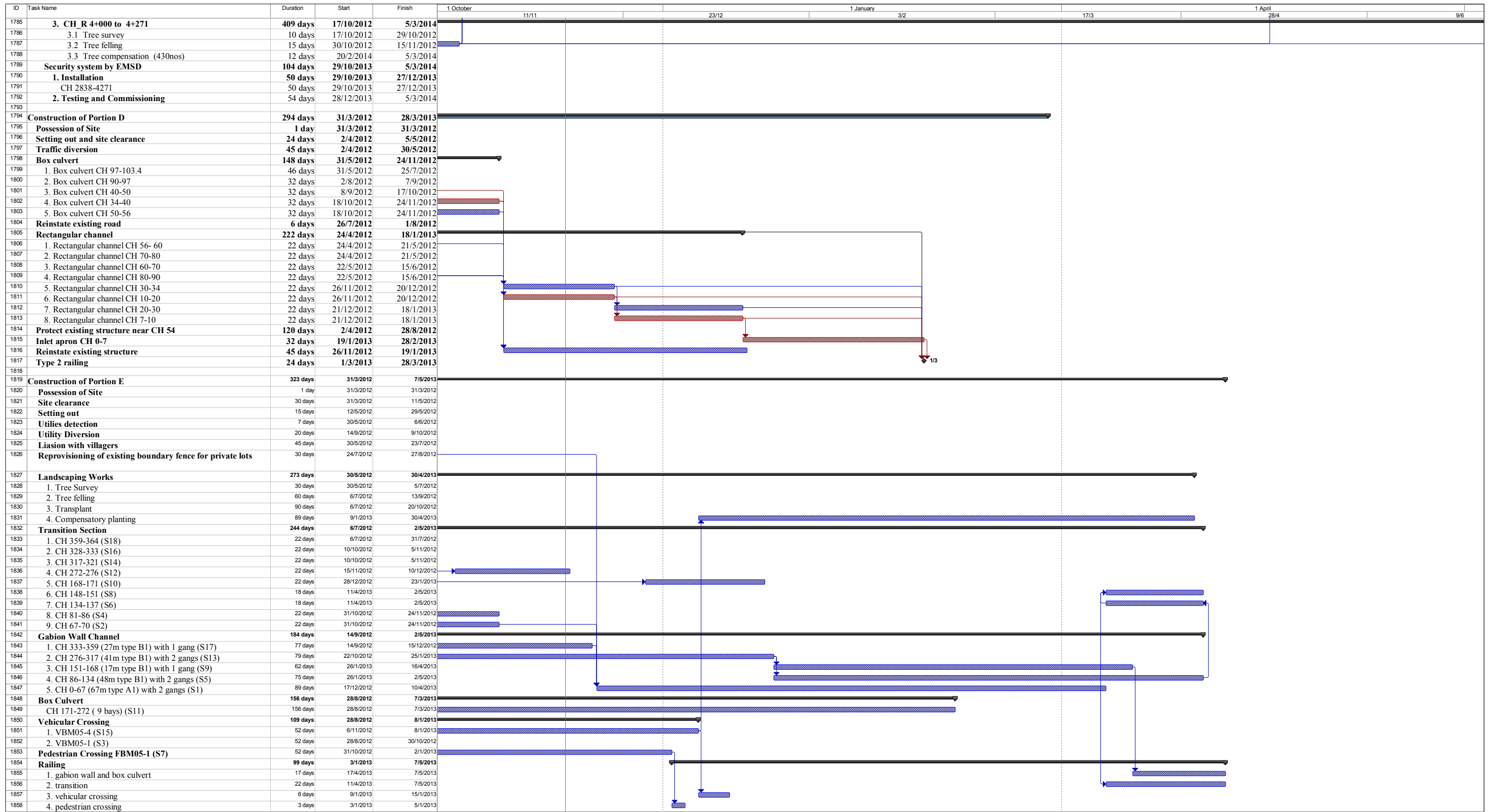


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progress Milestone Project Summary External Milestone Inactive Task Inactive Summary Duration-only Manual Summary Finish-only Critical Split Deadline

Split Summary External Tasks Inactive Task Inactive Milestone Manual Task Manual Summary Rollup Start-only Critical Progress

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ANNEX E

MONTHLY SUMMARY WASTE FLOW TABLE

AND

**SUMMARY TABLE FOR WORK PROCESSES
OR ACTIVITIES REQUIRING TIMBER FOR TEMPORARY WORKS**

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: May-13

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)	Temporery formwork & falsework design	10	9	
2	Transition formwork & falsework (Portion A,B,C)	Temporery formwork & falsework design	25	18	
3	Transition formwork & falsework (Portion A,B,C,E)	Temporery formwork & falsework design	52	40	
4	Transition formwork & falsework (Portion A,B,C,E)	Temporery formwork & falsework design	77	72	
5	Transition formwork & falsework (Portion A,B,C,E)	Temporery formwork & falsework design	102	86	
6	Transition formwork & falsework (Portion A,B,C,E)	Temporery formwork & falsework design	115	103	
7	Transition formwork & falsework (Portion A,B,C,E)	Temporery formwork & falsework design	121	112	
8	Transition formwork & falsework (Portion A,B,C,E)	Temporery 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