



# Lam Geotechnics Limited

Ground Investigation & Instrumentation Professionals

Ref : G1120/CS/L616/FEP-10/364/2009/B  
Date : 02 January 2014

**China State Construction Engineering (Hong Kong) Ltd**  
P.O. Box 35159  
King's Road Post Office

**Attn: Site Agent, Dr. Dave Chan**

Dear Dr. Chan,

**Contract No. HY/2010/08**  
**Central – WanChai Bypass Tunnel (Slip Road 8 Section)**

**Noise Management Plan (Rev. 3)**

Referring to the captioned submission dated 24 December 2013 received through email on 02 January 2014, we have reviewed your submitted details and hereby certified this submission in accordance with Condition 2.9 of FEP-10/364/2009/B.

Should you have any enquiry, please feel free to contact the undersigned at 2839 5666.

Yours faithfully,

Raymond Dai  
Environmental Team Leader

C.C.

HyD	- Mr. Jones Lai	(By Fax: 2714 5289)
CEDD	- Mr. Robert Tsoi	(By Fax: 2577 5040)
AECOM	- Mr. Frankie Fan	(By Fax: 2587 1877)
ENVIRON	- Mr. David Yeung	(By Fax: 3548 6988)

華益土力有限公司



Ref.: AACWBIECEM00\_0\_4771L.14

3 January 2014

China State Construction Engineering (Hong Kong) Ltd  
P.O. Box 35159  
King's Road Post Office

By Post

Attention: Dr. Dave Chan

Dear Sir,

**Re: FEP-10/364/2009/B**  
**Contract No. HY/2010/08**  
**Central –Wan Chai Bypass Tunnel (Slip Road 8 Section)**  
**Noise Management Plan (Revision 3)**

Reference is made to your submission of the Noise Management Plan (Revision 3 dated 24 December 2013) to us through E-mail on 2 January 2014 for our review and comment.

Please be informed that we have no adverse comment on the captioned submission. We write to verify the captioned submission in accordance with Condition 2.9 of FEP-10/364/2009/B.

Please feel free to contact the undersigned should you have any queries.

Yours sincerely,



David Yeung  
Independent Environmental Checker

c.c.	HyD	Mr. Jones Lai	by fax: 2714 5289
	CEDD	Mr. Robert Tsoi	by fax: 2577 5040
	AECOM	Mr. Dennis Norton (CRE)	by fax: 3912 3010
	AECOM	Mr. Conrad Ng	by fax: 2691 2649
	LAM	Mr. Raymond Dai (ETL)	by fax: 2882 3331

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**中國建築工程(香港)有限公司**  
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

**Central – Wan Chai Bypass Tunnel  
(Slip Road Section 8)  
Contract No. HY/2010/08**

**Noise Management Plan under condition 2.16 of FEP-10/ 364/2009/B**

Revision: 3

December 2013

Prepared by: Environmental Officer	C.M. Wong	Date: 24 December 2013
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**This document contains confidential information of China State Construction Engineering (Hong Kong) Limited and shall not be copied or amended without the approval of the Contractor's Representative**

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## 1 INTRODUCTION

### 1.1 PROJECT DESCRIPTION

“Wan Chai Development phase II and Central-Wan Chai Bypass” and “Central-Wan Chai Bypass and Island Eastern Corridor Link” (hereafter called “the Project”) are Designed Project (DP) under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO). The Environmental Impact Assessment (EIA) Reports for Central-Wan Chai Bypass and Island Eastern Corridor Link (Register No. AEIAR-041/2001) and Wan Chai Development phase II and Central-Wan Chai Bypass (Register No.: AEIAR-125/2008) have been approved on 31 August 2001 and 11 December 2008 respectively.

The key purpose of Wan Chai Development Phase II (WDII) is to provide land at Wan Chai North and North Point for construction of the Central-Wan Chai Bypass and Island Eastern Corridor Link (CWB). Land formed under the project will be developed as a world-class waterfront promenade joining that at the new Central waterfront for public enjoyment.

There is a compelling and present need for the CWB to provide relief to the very congested east-west Connaught Road Central/Harcourt Road / Gloucester Road Corridor (the Corridor) which is currently operating beyond its capacity. The CWB will provide relief to the existing congestion along the Corridor and cater for the anticipated growth of traffic on Hong Kong Island. Without the CWB and its access roads, there will not be sufficient capacity to serve the heavy traffic demands at both strategic and local levels.

China State Construction Engineering (HK) Limited was commissioned by Highways Department (HyD), as the main contractor of HY/2010/08, to undertake part of the tunnel section construction within Causeway Bay Typhoon Shelter (CBTS) and the slip road 8 section of the Project.

### 1.2 PURPOSE OF NOISE MANAGEMENT PLAN

Under Condition 2.9 of Environmental Permit No EP-364/2009/B (EP), a noise management plan should be prepared and submitted to EPD one month before the commencement of the corresponding parts of the Project. In accordance to

the Environmental Impact Assessment (EIA) Report and Section 3 of the relevant EM&A Manual, the noise mitigation measures are proposed to alleviate the noise impact due to the project. This noise management plan provides details regarding the works to be conducted at Slip Road 8 Section including works within Victoria Park.

## 2 ENVIRONMENTAL LEGISLATION, POLICIES, PLANS, STANDARDS AND CRITERIA

Environmental Impact Assessment Process (EIAO) and Noise Control Ordinance (NCO) provide the statutory framework for noise control. The following regulations, but not limited to, should be followed.

- Noise Control (Construction Work) Regulation
- Noise Control (Construction Work Designated Areas) Notice
- Noise Control (Hand Held Percussive Breakers) Regulations
- Noise Control (Air Compressors) Regulations

Pursuant to Technical Memorandum of EIA, noise standard for daytime construction activities as list in Table 1:

Noise Sources	0700 to 1900 hours on any day not being a Sunday or general holiday	1900 to 0700 hours or any time on Sundays or general holiday
Noise Standard	Leq (30 mins) dB(A)	
Uses		
All domestic premises including temporary housing accommodation	75	The criteria laid down in the relevant technical memoranda under the Noise Control Ordinance for designated areas and construction works other than percussive piling may be used for planning purpose. A Construction Noise Permit (CNP) shall be required for the carrying out of the construction work during the period.
Hotels and hostels	75	
Educational institutions including kindergartens, nurseries and all others where unaided voice communication is required	70  65 (During examinations)	

Table 1: Noise Standards for Daytime Construction Activities

### 3 NOISE SENSITIVE RECEIVERS AND ANTICIPATED CONSTRUCTION NOISE IMPACTS

#### 3.1 NOISE SENSITIVE RECEIVERS (NSRs)

The nearest Noise Sensitive Receivers (NSRs) as identified in the EIA report of the Project are listed in the following table. Pursuant to TM of EIA, the noise standard for both NSRs shall be 75 Leq (30mins) dB(A) during 0700 to 1900 hours on any day not being a Sunday or general holiday. **Appendix A** shows the NSRs and the layout of the work areas.

Noise Sensitive Receivers nearby

Location	Name of building	Catalogue
Causeway Bay	Riviera Mansion	Residential
Causeway Bay	Marco Polo Mansion	Residential
Causeway Bay	Viking Garden	Residential
Tin Hau	Victoria Court	Residential
Tin Hau	Mayson Garden	Residential
Tin Hau	Gordon House	Residential
Tin Hau	Belle House	Residential

#### 3.2 ANTICIPATED CONSTRUCTION NOISE IMPACTS

Scope of Designated Project under FEP-10/364/2009/B

- Construction of about 360 meters long CWB Tunnel structure in the CBTS by cut- and -cover method;
- Construction of about 100m long Slip Road 8 tunnel structure in CBTS by cut-and cover method;
- Construction of about 200m slip road 8 tunnel underneath Victoria Park Road and within Victoria Park by cut-and- cover method;
- Construction of about 410m at grade carriageway connecting to Tsing Fung Street;
- Reprovisioning of exiting Victoria Park facilities

Having reviewed the construction methodologies and construction programme, potential construction noise impacts arise from this Project (land based activity) includes:

- Ground Investigation
- Diaphragm Wall and ELS Construction
- Ground Treatment Works
- Piling Works
- Cut and Cover Tunnel Works
- Road Works
- Backfilling, Reinstatement and Reprovision Works

## 4 MITIGATION OF NOISE IMPACTS DUE TO CONSTRUCTION

In order to reduce the excessive noise impacts at the affected NSR during normal daytime working hours, mitigation measures such as implementing quiet powered mechanical equipment, movable noise barriers and good site practices are recommended.

### 4.1 QUITE POWERED MECHANICAL EQUIPMENT (QPME)

Availability of QPME in the market will be sourced out based on EPD QPME's Inventory. Types of Construction Equipment included in the QPME system subject to the availability of the of market Also, the major powered mechanical equipment (PME) to be used on site will be considered with reference to Appendix 4.13 of the approved EIA report (Register No.: AEIAR-125/2008) during different construction tasks. Detailed list of PMEs will be proposed in corresponding method statement submitted to the Engineer.

Adaption of QPME can be applied in the works which carried out in Victoria Park.

Detailed Construction Works Programme refers to **Appendix C**.

### 4.2 NOISE MITIGATION MEASURES

#### A. MOVABLE NOISE BARRIER

To alleviate the construction noise impact on the affected NSR, movable noise barriers are proposed to be provided for particular items of plant and construction works. It is anticipated that a movable noise barrier comprised of minimum 50mm thick sound absorbing lining and 10mm thick plywood (or 1mm thick steel) backing with a cantilevered upper portion located within 5m from any static or mobile plant, that PME will be totally screened when viewed from the NSR, a negative correction of 5-10 dB(A) noise reduction would be achieved. The actual transmission loss of moveable noise barrier would be measured on substantiate site condition. "Guide on Design of Noise Barrier" from EPD would be one of the references during the design of the movable noise

barriers. A sample photo for the proposed movable noise barrier is shown in **Appendix B – Photo 1**.

#### B. NOISE ENCLOSURE

It is anticipated that full enclosure/partial enclosure comprised of minimum 50mm thick sound absorbing lining and 10mm thick plywood (or 1mm thick steel sheet) enclosing the PME would be provided where appropriate. The PME will be totally screened when viewed from the NSR and a negative correction of 5-10 dB(A) noise reduction would be achieved. A sample photo for the proposed partial enclosure is shown in **Appendix B – Photo 2-4**.

#### C. ACOUSTIC MAT

To alleviate the construction noise emitted by the noise emission source of the PME, it is anticipated that acoustic mat would be used to wrap around the noise emission source of the PME to reduce noise. A negative correction of 3 dB(A) noise reduction would be achieved. A sample photo of the proposed acoustic mat is shown in **Appendix B – Photo 5**.

#### D. SILENCER

To alleviate the construction noise emitted due to the use of air blower, silencer would be installed for air blowers where appropriate. A sample photo for the silencer to be adopted is shown in **Appendix B – Photo 6**.

### 4.3 GOOD SITE PRACTICES

The following good site practices should be adopted to further ameliorate the noise impacts:

- Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction program;
- Silencers or mufflers on construction equipment shall be utilized as applicable and shall be properly maintained during the construction program;
- Mobile plant, if any, shall be sited as far away from NSR as applicable;
- Machines and plant (such as trucks) that may be in intermittent use must be shut down between works periods or shall be throttled down to a minimum;

- Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSR; and
- Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities.

#### 4.4 ADOPTION OF MULTIPLE-PHASE CONSTRUCTION SCHEDULE

Considering the works proceed on site as stipulated under the Contract, concurrent works/ multiple work fronts may be adopted in order to shorten the time consumed and minimize the nuisance to the public nearby.

Joint arrangements such as frontier management, front line workforce, mobilization of plants, delivery of material, sequencing of works, handling of works areas, training of workers, inspection of environmental management will be made amongst different categories of works together with work fronts.

Detailed Construction Works Programme refers to **Appendix C**

## 5 IMPACT MONITORING DURING CONSTRUCTION

### 5.1 EXTERNAL MONITORING

Environmental Monitoring and Audit (EM&A) Manual will serve as a guideline to set up of an EM&A programme to ensure compliance with the Environmental Impact Assessment (EIA) study recommendations, to assess the effectiveness of the recommended mitigation measures and to identify any further need for additional mitigation measures or remedial action.

The Environmental Team will be responsible for the setup, implement and maintain of EM&A system. Mitigation measures will be immediately implemented once the construction noise level exceeded the limit and action levels under the Manual's requirement.

## 5.2 INTERNAL MONITORING

Site inspections will be conducted in order to ensure the effectiveness of implemented noise mitigation measures and construction noise levels generated are fully complied with requirements.

## 5.3 ADDITIONAL MEASURES TO BE IMPLEMENTED AT VICTORIA PARK

Implementing an additional mitigation measures on top of those recommended in the EIA report listed above during waterbirds wintering season (from Oct to March).

Such measures might include:

- (a) avoiding heavy construction work and limiting all construction works to daylight hours within a sufficient buffer distance (say 30m to 50m) from waterbirds roosting sites and
- (b) placing light diffusers on the construction site lighting, if any, within this buffer distance.

Location plan showing the location of the water birds roosting sites and the buffer distance from heavy construction works, please refers to **Appendix D**.

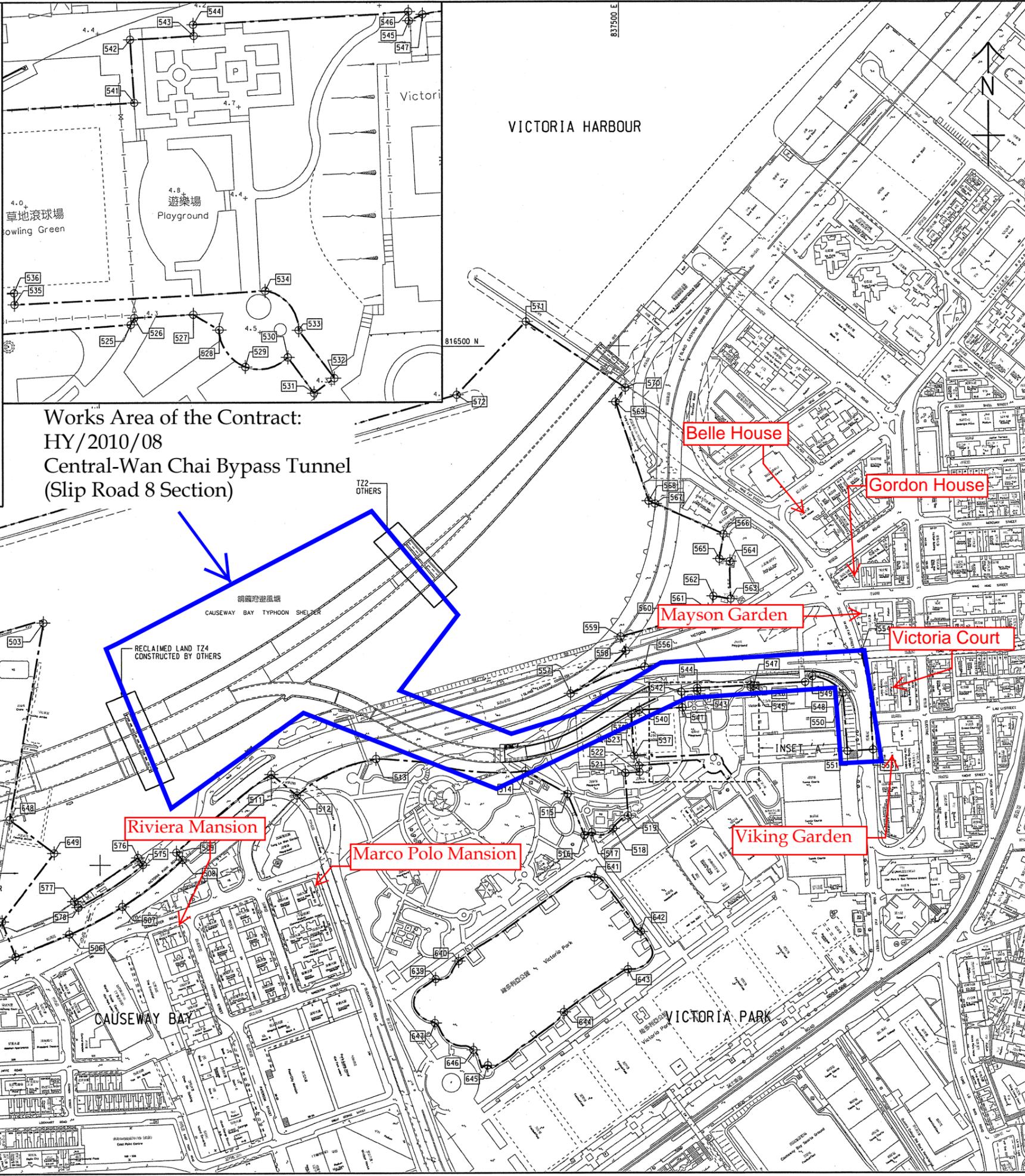
Photo of light diffusers used on construction site, please refers to **Appendix E**.

## APPENDIX A

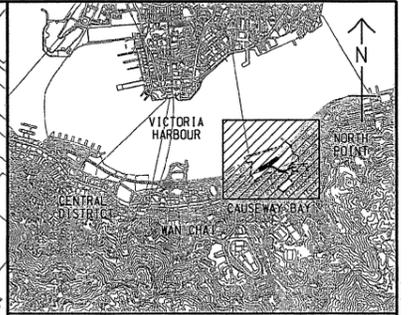
### Site Layout Plans and Noise Sensitive Receivers (NSRs)



SETTING OUT POINT	COORDINATE		SETTING OUT POINT	COORDINATE	
	EASTING	NORTHING		EASTING	NORTHING
501	836834.654	816307.053	560	837553.668	816236.393
502	836872.619	816216.508	561	837585.734	816245.792
503	836945.132	816234.375	562	837590.726	816258.832
505	836917.671	815911.415	563	837607.548	816256.268
506	836970.018	815932.954	564	837606.695	816292.565
507	837021.214	815959.576	565	837596.488	816294.986
508	837079.921	816004.859	566	837600.533	816318.981
509	837073.916	816011.852	567	837534.474	816348.401
511	837165.638	816087.100	568	837528.378	816351.116
512	837190.364	816066.670	569	837496.712	816446.217
513	837266.408	816101.801	570	837506.143	816459.701
514	837410.032	816089.928	571	837410.934	816523.765
515	837450.507	816067.349	572	837344.386	816453.325
516	837466.630	816027.453	575	837041.237	816000.027
517	837473.629	816030.282	576	837036.516	816006.971
518	837493.915	816033.802	577	836974.738	815964.852
519	837508.273	816046.332	578	836978.719	815958.996
521	837505.793	816087.606	639	837323.361	815888.727
522	837519.320	816088.530	640	837345.577	815906.013
523	837518.851	816094.820	641	837475.955	815986.456
525	837559.660	816097.721	642	837520.471	815934.035
526	837560.526	816099.355	643	837507.994	815897.484
527	837574.907	816100.135	644	837446.668	815856.474
528	837581.189	816096.430	645	837373.643	815805.415
529	837587.391	816087.496	646	837359.746	815820.364
530	837597.625	816089.774	647	837322.594	815846.270
531	837603.921	816081.148	648	836912.225	816043.885
532	837608.806	816084.714	649	836955.096	816011.630
533	837600.246	816096.314	650	836904.562	815945.321
534	837592.181	816105.802			
535	837531.534	816102.607			
536	837531.442	816105.401			
537	837514.273	816104.428			
539	837511.734	816144.714			
540	837519.057	816148.795			
541	837560.575	816151.097			
542	837559.579	816166.316			
543	837575.057	816167.209			
544	837574.917	816169.930			
545	837626.766	816170.783			
546	837626.621	816173.030			
547	837630.020	816172.310			
548	837679.081	816175.812			
549	837685.893	816181.330			
550	837715.118	816165.153			
551	837719.566	816108.737			
553	837744.174	816110.151			
554	837733.251	816204.909			
556	837524.380	816190.704			
557	837453.512	816164.827			
558	837506.486	816206.018			
559	837501.445	816219.760			



Works Area of the Contract:  
HY/2010/08  
Central-Wan Chai Bypass Tunnel  
(Slip Road 8 Section)



LOCATION PLAN  
SCALE A1 1 : 50000  
A3 1 : 100000

- NOTES:
- ALL COORDINATES GIVEN ACCORDING TO HONG KONG (1980) GRID IN METERS.
  - COORDINATES TO BE VERIFIED WITH THE ENGINEER ON SITE.
  - THIS DRAWING SHALL BE READ IN CONNECTION WITH DRAWING NO. 60095653/T2/1102 AND 1103

LEGEND:

--- SITE BOUNDARY

○ SETTING OUT POINT

SETTING OUT POINT	COORDINATE	
	EASTING	NORTHING
652	813055.694	817117.076
653	813099.429	817078.191
654	813125.333	817107.346
655	813103.658	817126.607
656	813083.936	817118.715
657	813068.906	817132.091
662	813272.658	817273.155
663	813267.320	817276.040
664	813263.643	817276.260
665	813174.315	817221.758
666	813126.969	817198.951
667	813136.310	817222.643
668	813141.945	817243.542
669	813174.898	817247.094
670	813262.526	817301.530
671	813280.714	817278.683
674	834794.531	811537.874
675	834827.583	811489.761
676	834969.773	811499.102
677	835088.314	811388.359
678	835077.993	811225.951
679	834986.804	811108.427
680	834992.939	811082.830
681	834985.709	811073.445
682	834797.862	811030.209
683	834791.050	811058.028
684	834780.743	811078.331
685	834748.106	811170.611
686	834730.947	811395.771
687	834713.773	811464.060
688	834617.598	811103.804
689	834699.994	811126.324
690	834740.857	810940.338
691	834654.505	810921.365

REV.	DESCRIPTION	DATE	BY	CHECKED	DATE
B	WORKING DRAWING		JYHC	RPCM	MAR.13
A	TENDER ADDENDUM NO. 1		JYHC	RPCM	AUG.12
-	TENDER DRAWING		JYHC	RPCM	JUL.12

Highways Department 路政署  
Major Works Project Management Office

CENTRAL - WAN CHAI BYPASS AND IEC LINK

PWP ITEM NO. 579 TH  
工務計劃項目編號

CENTRAL - WAN CHAI BYPASS - TUNNEL  
(SLIP ROAD 8 SECTION)  
**LIMIT OF SITE BOUNDARY  
AND SETTING OUT PLAN**  
SHEET 1 OF 3

**AECOM**

DRG. NO. 圖紙編號	60095653/T2/1101 B	CONTRACT NO. 合約編號	HY/2010/08	P. DTS. 批准人	CW
DESIGNED BY 設計	JYHC	STATUS 審核	ZNL	APPROVED 核准	CW
SCALE 比例	A1 1 : 2000 A3 1 : 4000	<b>WORKING DRAWING</b>			
DIMENSIONS ARE IN METRES					
© COPYRIGHT RESERVED 版權所有					

## APPENDIX B

### Noise Mitigation Measures





Photo 1 – Noise Barrier



Photo 2 – Partial Enclosure



Photo 3 – Enclosure for Drilling Plant



Photo 4 –Breaker Tips were wrapped with noise absorbing material

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Photo 5 – Acoustic Mat to wrap the noise emission source of the PME



Photo 6 – Silencer for air blower

## APPENDIX C

### Construction Programme of the Project



Activity ID	Activity Name	Calendar	Original Duration	Start	Finish	Total Float	2013-2019																															
							2013				2014				2015				2016				2017				2018				2019							
							Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
<b>DWP: HY/2010/08- Central-Wan Chai Bypass Tunnel (Slip Road 8 Section)</b>							1																															
<b>Key Dates</b>																																						
<b>Commencement of Works</b>																																						
100	Project Start	Cal 3 - 7 days / wk (no holidays)	2039.9	21-Mar-13	20-Nov-19	0.0	◆ Project Start																															
110	Contract Completion	Cal 3 - 7 days / wk (no holidays)	2436.0	21-Mar-13	20-Nov-19	0.0	◆																															
<b>Site Possession Dates</b>																																						
XIV	Site Possession of Portion XIV (0d)	Cal 3 - 7 days / wk (no holidays)	1096.0	21-Mar-13	21-Mar-16	0.0	◆ Site Possession of Portion XIV (0d)																															
XV	Site Possession of Portion XV (0d)	Cal 3 - 7 days / wk (no holidays)	0.0	21-Mar-13*		0.0	◆ Site Possession of Portion XV (0d)																															
XVII	Site Possession of Portion XVII (0d)	Cal 3 - 7 days / wk (no holidays)	0.0	21-Mar-13*		0.0	◆ Site Possession of Portion XVII (0d)																															
XIX	Site Possession of Portion XIX (0d)	Cal 3 - 7 days / wk (no holidays)	0.0	21-Mar-13*		0.0	◆ Site Possession of Portion XIX (0d)																															
XX	Site Possession of Portion XX (0d)	Cal 3 - 7 days / wk (no holidays)	0.0	21-Mar-13*		0.0	◆ Site Possession of Portion XX (0d)																															
II	Site Possession of Portion II (0d)	Cal 3 - 7 days / wk (no holidays)	0.0	21-Mar-13*		0.0	◆ Site Possession of Portion II (0d)																															
IVA	Site Possession of Portion IVA (0d)	Cal 3 - 7 days / wk (no holidays)	0.0	21-Mar-13*		0.0	◆ Site Possession of Portion IVA (0d)																															
IVB	Site Possession of Portion IVB (0d)	Cal 3 - 7 days / wk (no holidays)	0.0	21-Mar-13*		0.0	◆ Site Possession of Portion IVB (0d)																															
VA	Site Possession of Portion VA (0d)	Cal 3 - 7 days / wk (no holidays)	0.0	21-Mar-13*		0.0	◆ Site Possession of Portion VA (0d)																															
VB	Site Possession of Portion VB (0d)	Cal 3 - 7 days / wk (no holidays)	0.0	21-Mar-13*		0.0	◆ Site Possession of Portion VB (0d)																															
XVIII	Site Possession of Portion XVIII (180d)	Cal 3 - 7 days / wk (no holidays)	0.0	17-Sep-13*		0.0	◆ Site Possession of Portion XVIII (180d)																															
XI	Site Possession of Portion XI (245d)	Cal 3 - 7 days / wk (no holidays)	0.0	21-Nov-13*		0.0	◆ Site Possession of Portion XI (245d)																															
XII	Site Possession of Portion XII (245d)	Cal 3 - 7 days / wk (no holidays)	0.0	21-Nov-13*		0.0	◆ Site Possession of Portion XII (245d)																															
VI	Site Possession of Portion VI (245d)	Cal 3 - 7 days / wk (no holidays)	0.0	21-Nov-13*		0.0	◆ Site Possession of Portion VI (245d)																															
IA	Site Possession of Portion IA (389d)	Cal 3 - 7 days / wk (no holidays)	0.0	14-Apr-14*		0.0	◆ Site Possession of Portion IA (389d)																															
IB	Site Possession of Portion IB (389d)	Cal 3 - 7 days / wk (no holidays)	0.0	14-Apr-14*		0.0	◆ Site Possession of Portion IB (389d)																															
X	Site Possession of Portion X (420d)	Cal 3 - 7 days / wk (no holidays)	0.0	15-May-14*		0.0	◆ Site Possession of Portion X (420d)																															
XIIIA	Site Possession of Portion XIIIA (420d)	Cal 3 - 7 days / wk (no holidays)	0.0	15-May-14*		0.0	◆ Site Possession of Portion XIIIA (420d)																															
XIIIB	Site Possession of Portion XIIIB (420d)	Cal 3 - 7 days / wk (no holidays)	0.0	15-May-14*		0.0	◆ Site Possession of Portion XIIIB (420d)																															
XVI	Site Possession of Portion XVI (420d)	Cal 3 - 7 days / wk (no holidays)	0.0	15-May-14*		0.0	◆ Site Possession of Portion XVI (420d)																															
III	Site Possession of Portion III (420d)	Cal 3 - 7 days / wk (no holidays)	0.0	15-May-14*		0.0	◆ Site Possession of Portion III (420d)																															
VIII	Site Possession of Portion VIII (486d)	Cal 3 - 7 days / wk (no holidays)	0.0	20-Jul-14*		0.0	◆ Site Possession of Portion VIII (486d)																															
VII	Site Possession of Portion VII (665d)	Cal 3 - 7 days / wk (no holidays)	0.0	15-Jan-15*		0.0	◆ Site Possession of Portion VII (665d)																															
IECM	Instruction to proceed with Section 8 (IEC Abutment M)- subject to excision 945d	Cal 3 - 7 days / wk (no holidays)	0.0	22-Oct-15*		0.0	◆ Instruction to proceed with Section 8 (IEC Abutment M)- subject to excision 945d																															
IX	Site Possession of Portion IX (1096d)	Cal 3 - 7 days / wk (no holidays)	0.0	21-Mar-16*		0.0	◆ Site Possession of Portion IX (1096d)																															
<b>Stage / Section Completion of Works</b>																																						
KD1	KD1 - Achievement of Stage 1 (120d)	Cal 3 - 7 days / wk (no holidays)	2316.0	18-Jul-13	20-Nov-19	0.0	◆ KD1 - Achievement of Stage 1 (120d)																															
KD16	KD16 - Completion of Section 10A of the Works (240d)	Cal 3 - 7 days / wk (no holidays)	0.0		15-Nov-13*	0.0	◆ KD16 - Completion of Section 10A of the Works (240d)																															
KD4	KD4 - Completion of Section 1B of the Works (635d)	Cal 3 - 7 days / wk (no holidays)	0.0		15-Dec-14*	0.0	◆ KD4 - Completion of Section 1B of the Works (635d)																															
KD3	KD3 - Completion of Section 1A of the Works (635d)	Cal 3 - 7 days / wk (no holidays)	0.0		15-Dec-14*	0.0	◆ KD3 - Completion of Section 1A of the Works (635d)																															
KD5	KD5 - Completion of Section 2 of the Works (849d)	Cal 3 - 7 days / wk (no holidays)	0.0		17-Jul-15*	0.0	◆ KD5 - Completion of Section 2 of the Works (849d)																															
KD15	KD15 - Completion of Section 9 of the Works (994d)	Cal 3 - 7 days / wk (no holidays)	0.0		09-Dec-15*	0.0	◆ KD15 - Completion of Section 9 of the Works (994d)																															
KD2	KD2 - Achievement of Stage 2 (994d)	Cal 3 - 7 days / wk (no holidays)	0.0		09-Dec-15*	0.0	◆ KD2 - Achievement of Stage 2 (994d)																															
KD6	KD6 - Completion of Section 3 of the Works (1125d)	Cal 3 - 7 days / wk (no holidays)	0.0		18-Apr-16*	0.0	◆ KD6 - Completion of Section 3 of the Works (1125d)																															
KD14	KD14 - Completion of Section 8 of the Works (1125d)	Cal 3 - 7 days / wk (no holidays)	0.0		18-Apr-16*	0.0	◆ KD14 - Completion of Section 8 of the Works (1125d)																															
KD12	KD12 - Completion of Section 7B of the Works (1214d)	Cal 3 - 7 days / wk (no holidays)	0.0		16-Jul-16*	0.0	◆ KD12 - Completion of Section 7B of the Works (1214d)																															
KD7	KD7 - Completion of Section 4 of the Works (1226d)	Cal 3 - 7 days / wk (no holidays)	0.0		28-Jul-16*	0.0	◆ KD7 - Completion of Section 4 of the Works (1226d)																															
KD9	KD9 - Completion of Section 5B of the Works (1341d)	Cal 3 - 7 days / wk (no holidays)	0.0		20-Nov-16*	0.0	◆ KD9 - Completion of Section 5B of the Works (1341d)																															
KD10	KD10 - Completion of Section 6 of the Works (1341d)	Cal 3 - 7 days / wk (no holidays)	0.0		20-Nov-16*	0.0	◆ KD10 - Completion of Section 6 of the Works (1341d)																															
KD8	KD8 - Completion of Section 5A of the Works (1399d)	Cal 3 - 7 days / wk (no holidays)	0.0		17-Jan-17*	0.0	◆ KD8 - Completion of Section 5A of the Works (1399d)																															
KD17	KD17 - Completion of Section 10B of the Works (1706d)	Cal 3 - 7 days / wk (no holidays)	0.0		20-Nov-17*	0.0	◆ KD17 - Completion of Section 10B of the Works (1706d)																															
KD13	KD13 - Completion of Section 7C of the Works (1706d)	Cal 3 - 7 days / wk (no holidays)	0.0		20-Nov-17*	0.0	◆ KD13 - Completion of Section 7C of the Works (1706d)																															
KD11	KD11 - Completion of Section 7A of the Works (1730d)	Cal 3 - 7 days / wk (no holidays)	0.0		14-Dec-17*	0.0	◆ KD11 - Completion of Section 7A of the Works (1730d)																															
KD18	KD18 - Completion of Section 11 of the Works (2436d)	Cal 3 - 7 days / wk (no holidays)	0.0		20-Nov-19*	0.0	◆																															
<b>Handover Dates</b>																																						
HXVII	Handover of Portion XVII	Cal 3 - 7 days / wk (no holidays)	1279.0	15-Aug-13	14-Feb-17	1009.0	◆ Handover of Portion XVII																															





Activity ID	Activity Name	Calendar	Original Duration	Start	Finish	Total Float	2013				2014				2015				2016				2017				2018				2019			
							Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Stage 1 - Water Intake Works</b>																																		
TS3_1170.10	Install Water Intake Interim Measures and connection to WSD	Cal 1 - 6 days / wk less holidays	98.0	20-Nov-14	20-Mar-15	10.0	■ Install Water Intake Interim Measures and connection to WSD																											
TS3_1170.20	Sheet Piling and ELS	Cal 1 - 6 days / wk less holidays	24.0	18-Dec-14	17-Jan-15	10.0	■ Sheet Piling and ELS																											
TS3_1170.30	Construction of Concrete Sump and Install Sump Pump	Cal 1 - 6 days / wk less holidays	24.0	19-Jan-15	14-Feb-15	10.0	■ Construction of Concrete Sump and Install Sump Pump																											
TS3_1170.40	Extension of Water Intake Pipes to to East and West of Reclamation	Cal 1 - 6 days / wk less holidays	36.0	02-Feb-15	18-Mar-15	10.0	■ Extension of Water Intake Pipes to to East and West of Reclamation																											
TS3_1170.50	Test and trial run	Cal 1 - 6 days / wk less holidays	2.0	19-Mar-15	20-Mar-15	10.0	Test and trial run																											
<b>Stage 2 - Water Intake Shutdown and Connection</b>																																		
TS3_1180.10	Shut Down intake from WSD and Connect Water Intake to Extended Systems	Cal 1 - 6 days / wk less holidays	1.0	21-Mar-15	21-Mar-15	10.0	Shut Down intake from WSD and Connect Water Intake to Extended Systems																											
TS3_1180.20	Backfilling and Removal of Sheet Pile and Struts	Cal 1 - 6 days / wk less holidays	12.0	23-Mar-15	09-Apr-15	10.0	■ Backfilling and Removal of Sheet Pile and Struts																											
<b>Box Culvert Q</b>																																		
<b>Stage 1 - TZ4 Interface Island (Upon Possession of TZ4)</b>																																		
TS3_1145.10	Site Possession of TZ4	Cal 1 - 6 days / wk less holidays	0.0	15-May-14		43.0	◆ Site Possession of TZ4																											
TS3_1145.20	Sheet Piling	Cal 1 - 6 days / wk less holidays	12.0	15-May-14	28-May-14	43.0	■ Sheet Piling																											
TS3_1145.30	Ground Treatment / Grouting	Cal 1 - 6 days / wk less holidays	12.0	29-May-14	12-Jun-14	43.0	■ Ground Treatment / Grouting																											
TS3_1145.40	Excavation and Lateral Support	Cal 1 - 6 days / wk less holidays	24.0	13-Jun-14	11-Jul-14	43.0	■ Excavation and Lateral Support																											
TS3_1145.50	Install 2 Pipe Culvert with concrete surround	Cal 1 - 6 days / wk less holidays	24.0	27-Jun-14	25-Jul-14	43.0	■ Install 2 Pipe Culvert with concrete surround																											
TS3_1145.130	Backfill and Remove Strutting and Sheet Pile	Cal 1 - 6 days / wk less holidays	12.0	26-Jul-14	08-Aug-14	43.0	■ Backfill and Remove Strutting and Sheet Pile																											
TS3_1145.110	Precast Box Culvert Connection	Cal 1 - 6 days / wk less holidays	18.0	23-Aug-14	13-Sep-14	31.0	■ Precast Box Culvert Connection																											
<b>Stage 2 - During Reclamation (Culvert Parallel to D-Wall)</b>																																		
TS3_1145.60	Site Reclamation complete at West Portion	Cal 1 - 6 days / wk less holidays	0.0	18-Oct-14		4.0	◆ Site Reclamation complete at West Portion																											
TS3_1145.70	Sheet Piling	Cal 1 - 6 days / wk less holidays	6.0	18-Oct-14	24-Oct-14	4.0	■ Sheet Piling																											
TS3_1145.80	Ground Treatment / Grouting	Cal 1 - 6 days / wk less holidays	12.0	25-Oct-14	07-Nov-14	4.0	■ Ground Treatment / Grouting																											
TS3_1145.90	Excavation and Lateral Support	Cal 1 - 6 days / wk less holidays	24.0	08-Nov-14	05-Dec-14	4.0	■ Excavation and Lateral Support																											
TS3_1145.100	Install 2 Pipe Culvert with concrete surround	Cal 1 - 6 days / wk less holidays	24.0	22-Nov-14	19-Dec-14	4.0	■ Install 2 Pipe Culvert with concrete surround																											
TS3_1145.120	Backfill and Remove Strutting and Sheet Pile	Cal 1 - 6 days / wk less holidays	8.0	20-Dec-14	31-Dec-14	4.0	■ Backfill and Remove Strutting and Sheet Pile																											
<b>Stage 3 - Outfall Connection</b>																																		
TS3_1160.01.1	Divert Water to Out Fall Box B	Cal 1 - 6 days / wk less holidays	4.0	25-Oct-14	29-Oct-14	10.0	Divert Water to Out Fall Box B																											
TS3_1160.01.2	Sheet Piling + ELS to divert Water to West of Outfall and Isolate Box A	Cal 1 - 6 days / wk less holidays	12.0	28-Oct-14	10-Nov-14	10.0	■ Sheet Piling + ELS to divert Water to West of Outfall and Isolate Box A																											
TS3_1160.01.3	Backfill to Invert Level and Install Precast Concrete Box A and connect to Outfall A	Cal 1 - 6 days / wk less holidays	8.0	11-Nov-14	19-Nov-14	10.0	■ Backfill to Invert Level and Install Precast Concrete Box A and connect to Outfall A																											
TS3_1160.01.4	Divert Water to Outfall A / Precast Concrete Box A	Cal 1 - 6 days / wk less holidays	2.0	27-Nov-14	28-Nov-14	10.0	Divert Water to Outfall A / Precast Concrete Box A																											
TS3_1160.01.5	Backfill and Remove Struts and Sheet File	Cal 1 - 6 days / wk less holidays	8.0	29-Nov-14	08-Dec-14	10.0	■ Backfill and Remove Struts and Sheet File																											
TS3_1160.01.6	Sheet piling + ELS to Invert Level (Outfall Box B)	Cal 1 - 6 days / wk less holidays	12.0	09-Dec-14	22-Dec-14	10.0	■ Sheet piling + ELS to Invert Level (Outfall Box B)																											
TS3_1160.01.7	Install 2nd Precast Concrete Box and connect to Outfall B	Cal 1 - 6 days / wk less holidays	12.0	02-Jan-15	15-Jan-15	4.0	■ Install 2nd Precast Concrete Box and connect to Outfall B																											
TS3_1160.01.8	Remove Diversion to Outfall	Cal 1 - 6 days / wk less holidays	2.0	16-Jan-15	17-Jan-15	4.0	Remove Diversion to Outfall																											
TS3_1160.01.9	Box Culvert Q diversion - backfilling	Cal 1 - 6 days / wk less holidays	8.0	19-Jan-15	27-Jan-15	4.0	■ Box Culvert Q diversion - backfilling																											
<b>Works in TS3-East</b>																																		
<b>Diaphragm Wall</b>																																		
<b>TS3 East ELS Temporary Works Design Submission to AECOM/GEO</b>																																		
TS3E_2000	1st Submission - preparation and submission to AECOM	Cal 1 - 6 days / wk less holidays	24.0	16-Nov-13	13-Dec-13	20.0	■ 1st Submission - preparation and submission to AECOM																											
TS3E_2005	1st Submission - Review and comments by Aecom	Cal 1 - 6 days / wk less holidays	24.0	14-Dec-13	14-Jan-14	20.0	■ 1st Submission - Review and comments by Aecom																											
TS3E_2010	1st Submission - preparation, and formal submission (with ICE) to AECOM/GEO	Cal 1 - 6 days / wk less holidays	12.0	15-Jan-14	28-Jan-14	20.0	■ 1st Submission - preparation, and formal submission (with ICE) to AECOM/GEO																											
TS3E_2015	1st Submission - Review and approval by Aecom	Cal 1 - 6 days / wk less holidays	24.0	29-Jan-14	28-Feb-14	20.0	■ 1st Submission - Review and approval by Aecom																											
TS3E_2020	1st Submission - Review by GEO (assume 4 months)	Cal 1 - 6 days / wk less holidays	120.0	29-Jan-14	28-Jun-14	28.0	■ 1st Submission - Review by GEO (assume 4 months)																											
<b>Method Statement</b>																																		
TS3E_2025	(01)Diaphragm wall method statement - submission	Cal 1 - 6 days / wk less holidays	24.0	01-Mar-14	28-Mar-14	20.0	■ (01)Diaphragm wall method statement - submission																											
TS3E_2030	(01)Diaphragm wall method statement- review and approval by AECOM	Cal 1 - 6 days / wk less holidays	24.0	29-Mar-14	30-Apr-14	20.0	■ (01)Diaphragm wall method statement- review and approval by AECOM																											
<b>TS3-East Pre-D/wall Works</b>																																		
TS3E_2510	Bentonite silo & plant establishment	Cal 1 - 6 days / wk less holidays	48.0	02-Aug-14	27-Sep-14	0.0	■ Bentonite silo & plant establishment																											
TS3E_2520	Ground Investigation (SI)	Cal 1 - 6 days / wk less holidays	48.0	02-Aug-14	27-Sep-14	0.0	■ Ground Investigation (SI)																											
TS3E_2530	Curtain grout/soil pre-treatment/slurry wall	Cal 1 - 6 days / wk less holidays	98.0	02-Aug-14	27-Nov-14	0.0	■ Curtain grout/soil pre-treatment/slurry wall																											
TS3E_2540	Guidewall construction	Cal 1 - 6 days / wk less holidays	21.0	02-Aug-14	26-Aug-14	0.0	■ Guidewall construction																											
<b>TS3-East Diaphragm Construction</b>																																		
TS3E_3110	Diaphragm wall construction (49 panels @ proposed bulkhead)	Cal 1 - 6 days / wk less holidays	98.0	19-Aug-14	13-Dec-14	0.0	■ Diaphragm wall construction (49 panels @ proposed bulkhead)																											





Activity ID	Activity Name	Calendar	Original Duration	Start	Finish	Total Float	2013				2014				2015				2016				2017				2018				2019			
							Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>Method Statement</b>																																		
TS3W_2025	(01) D Wall works method statement - submission	Cal 1 - 6 days / wk less holidays	48.0	05-Aug-14	30-Sep-14	41.0	■ (01) D Wall works method statement - submission																											
TS3W_2030	(01) D Wall works method statement - review and approval by AECOM	Cal 1 - 6 days / wk less holidays	24.0	02-Sep-14	30-Sep-14	41.0	■ (01) D Wall works method statement - review and approval by AECOM																											
<b>TS3-West Pre-D/wall Works</b>																																		
TS3W_2510	Bentonite silo & plant establishment	Cal 1 - 6 days / wk less holidays	48.0	20-Nov-14	17-Jan-15	0.0	■ Bentonite silo & plant establishment																											
TS3W_2540	Guidewall construction	Cal 1 - 6 days / wk less holidays	60.0	20-Nov-14	31-Jan-15	0.0	■ Guidewall construction																											
TS3W_2520	Ground Investigation (SI)	Cal 1 - 6 days / wk less holidays	82.0	20-Nov-14	02-Mar-15	0.0	■ Ground Investigation (SI)																											
TS3W_2530	Curtain grout/soil pre-treatment/slurry wall	Cal 1 - 6 days / wk less holidays	137.0	20-Nov-14	11-May-15	0.0	■ Curtain grout/soil pre-treatment/slurry wall																											
<b>TS3-West Diaphragm Construction</b>																																		
TS3W_3110	Diaphragm wall construction (137 panels)	Cal 1 - 6 days / wk less holidays	206.0	15-Dec-14	27-Aug-15	0.0	■ Diaphragm wall construction (137 panels)																											
<b>TS3-West Post D/wall Works</b>																																		
TS3W_3510	D/wall Interface coring + grouting	Cal 1 - 6 days / wk less holidays	48.0	31-Jul-15	24-Sep-15	0.0	■ D/wall Interface coring + grouting																											
TS3W_3520	D/wall coring + fissure grouting	Cal 1 - 6 days / wk less holidays	48.0	31-Jul-15	24-Sep-15	0.0	■ D/wall coring + fissure grouting																											
TS3W_3530	D/wall integrity test	Cal 1 - 6 days / wk less holidays	48.0	31-Jul-15	24-Sep-15	0.0	■ D/wall integrity test																											
TS3W_3540	Dewatering & observation well installation	Cal 1 - 6 days / wk less holidays	36.0	31-Jul-15	10-Sep-15	0.0	■ Dewatering & observation well installation																											
TS3W_3550	Pumping test	Cal 1 - 6 days / wk less holidays	12.0	11-Sep-15	24-Sep-15	0.0	■ Pumping test																											
<b>ELS &amp; Rock Excavation</b>																																		
<b>ELS Fabrication Works</b>																																		
TS3W_2095	Shop drawing submission	Cal 1 - 6 days / wk less holidays	24.0	17-Nov-14	13-Dec-14	8.0	■ Shop drawing submission																											
TS3W_2100	Review and approval by AECOM	Cal 1 - 6 days / wk less holidays	24.0	15-Dec-14	14-Jan-15	8.0	■ Review and approval by AECOM																											
TS3W_2105	Shop drawing re-submission	Cal 1 - 6 days / wk less holidays	24.0	15-Jan-15	11-Feb-15	8.0	■ Shop drawing re-submission																											
TS3W_2110	Review and approval by AECOM	Cal 1 - 6 days / wk less holidays	24.0	12-Feb-15	14-Mar-15	8.0	■ Review and approval by AECOM																											
TS3W_4510	ELS struts & waling fabrication	Cal 1 - 6 days / wk less holidays	120.0	24-Apr-15	15-Sep-15	8.0	■ ELS struts & waling fabrication																											
<b>Method Statement</b>																																		
TS3W_2115	(01) ELS works method statement - submission	Cal 1 - 6 days / wk less holidays	48.0	16-Mar-15	15-May-15	86.0	■ (01) ELS works method statement - submission																											
TS3W_2120	(01) ELS works method statement - review and approval by AECOM	Cal 1 - 6 days / wk less holidays	24.0	17-Apr-15	15-May-15	86.0	■ (01) ELS works method statement - review and approval by AECOM																											
<b>TS3-West ELS Works</b>																																		
TS3W_4515	King Post installation	Cal 1 - 6 days / wk less holidays	35.0	28-Aug-15	09-Oct-15	0.0	■ King Post installation																											
TS3W_4520	Start of ELS - Layer 1: Soft excavation struts installation	Cal 1 - 6 days / wk less holidays	30.0	25-Sep-15	02-Nov-15	0.0	■ Start of ELS - Layer 1: Soft excavation struts installation																											
TS3W_4530	Layer 2: Soft excavation struts installation	Cal 1 - 6 days / wk less holidays	23.0	15-Oct-15	11-Nov-15	0.0	■ Layer 2: Soft excavation struts installation																											
TS3W_4540	Layer 3: Soft excavation struts installation	Cal 1 - 6 days / wk less holidays	23.0	26-Oct-15	20-Nov-15	0.0	■ Layer 3: Soft excavation struts installation																											
TS3W_4550	Layer 4 Soft excavation struts installation	Cal 1 - 6 days / wk less holidays	23.0	04-Nov-15	30-Nov-15	0.0	■ Layer 4 Soft excavation struts installation																											
TS3W_4560	Layer 5: Soft excavation struts installation	Cal 1 - 6 days / wk less holidays	23.0	13-Nov-15	09-Dec-15	0.0	■ Layer 5: Soft excavation struts installation																											
TS3W_4570	Layer 6: Soft excavation struts installation	Cal 1 - 6 days / wk less holidays	23.0	21-Nov-15	17-Dec-15	0.0	■ Layer 6: Soft excavation struts installation																											
TS3W_4580	Layer 7: Soft excavation struts installation	Cal 1 - 6 days / wk less holidays	23.0	30-Nov-15	28-Dec-15	0.0	■ Layer 7: Soft excavation struts installation																											
TS3W_4660	Soft excavation up to rock head level	Cal 1 - 6 days / wk less holidays	23.0	05-Dec-15	04-Jan-16	0.0	■ Soft excavation up to rock head level																											
TS3W_4670	Rock excavation up to formation level	Cal 1 - 6 days / wk less holidays	21.0	19-Dec-15	15-Jan-16	0.0	■ Rock excavation up to formation level																											
<b>Cut &amp; Cover Tunnel Structure</b>																																		
<b>Temporary Works Design</b>																																		
TS3W_2125	(01) RC Temp Work Design - submission	Cal 1 - 6 days / wk less holidays	48.0	23-Sep-15	20-Nov-15	44.0	■ (01) RC Temp Work Design - submission																											
TS3W_2130	(01) RC Temp Work Design - review and approval by AECOM	Cal 1 - 6 days / wk less holidays	24.0	24-Oct-15	20-Nov-15	44.0	■ (01) RC Temp Work Design - review and approval by AECOM																											
<b>Method Statement</b>																																		
TS3W_2135	(01) RC works method statement - submission	Cal 1 - 6 days / wk less holidays	48.0	27-Oct-15	21-Dec-15	18.0	■ (01) RC works method statement - submission																											
TS3W_2140	(01) RC works method statement - review and approval by AECOM	Cal 1 - 6 days / wk less holidays	24.0	24-Nov-15	21-Dec-15	18.0	■ (01) RC works method statement - review and approval by AECOM																											
<b>TS3-West CCT</b>																																		
<b>TS3 West Box Structure (TS4 Bulkhead CH.4265.200 to CH.4300.000)</b>																																		
<b>TS3W Box Structure - Blinding + Waterproofing</b>																																		
TS3W_5510.10	Blinding Bay 1 to Bay 3	Cal 1 - 6 days / wk less holidays	18.0	16-Jan-16	09-Feb-16	0.0	■ Blinding Bay 1 to Bay 3																											
TS3W_5510.20	Waterproofing - Bay 1 to Bay 3	Cal 1 - 6 days / wk less holidays	12.0	23-Jan-16	09-Feb-16	0.0	■ Waterproofing - Bay 1 to Bay 3																											
<b>TS3W Box Structure - Base Slab + Drainage</b>																																		
TS3W_5520.10	Base Slab + Drainage - Bay 1 (Commence at CH.4265.200)	Cal 1 - 6 days / wk less holidays	21.0	30-Jan-16	26-Feb-16	0.0	■ Base Slab + Drainage - Bay 1 (Commence at CH.4265.200)																											
TS3W_5520.20	Base Slab + Drainage - Bay 2	Cal 1 - 6 days / wk less holidays	8.0	30-Jan-16	11-Feb-16	0.0	■ Base Slab + Drainage - Bay 2																											
TS3W_5520.30	Base Slab + Drainage - Bay 3	Cal 1 - 6 days / wk less holidays	8.0	11-Feb-16	19-Feb-16	0.0	■ Base Slab + Drainage - Bay 3																											
TS3W_5520.30	Base Slab + Drainage - Bay 3	Cal 1 - 6 days / wk less holidays	8.0	18-Feb-16	26-Feb-16	0.0	■ Base Slab + Drainage - Bay 3																											

Activity ID	Activity Name	Calendar	Original Duration	Start	Finish	Total Float	2013				2014				2015				2016				2017				2018				2019								
							Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4					
<b>TS3W Box Structure - Walls</b>							Cal 1 - 6 days / wk less holidays	25.0	12-Feb-16	11-Mar-16	0.0																												
TS3W_5530.10	Walls - Bay 1	Cal 1 - 6 days / wk less holidays	12.0	12-Feb-16	25-Feb-16	0.0	■ Walls - Bay 1																																
TS3W_5530.20	Walls - Bay 2	Cal 1 - 6 days / wk less holidays	12.0	20-Feb-16	04-Mar-16	0.0	■ Walls - Bay 2																																
TS3W_5530.30	Walls - Bay 3	Cal 1 - 6 days / wk less holidays	12.0	27-Feb-16	11-Mar-16	0.0	■ Walls - Bay 3																																
<b>TS3W Box Structure - OHVD Slab</b>							Cal 1 - 6 days / wk less holidays	30.0	26-Feb-16	05-Apr-16	1.0																												
TS3W_5540.10	OVHD Slab - Bay 1	Cal 1 - 6 days / wk less holidays	10.0	26-Feb-16	08-Mar-16	1.0	■ OVHD Slab - Bay 1																																
TS3W_5540.20	OVHD Slab - Bay 2	Cal 1 - 6 days / wk less holidays	10.0	09-Mar-16	19-Mar-16	1.0	■ OVHD Slab - Bay 2																																
TS3W_5540.30	OVHD Slab - Bay 3	Cal 1 - 6 days / wk less holidays	10.0	21-Mar-16	05-Apr-16	1.0	■ OVHD Slab - Bay 3																																
<b>TS3W Box Structure - Walls &amp; Roof Slab</b>							Cal 1 - 6 days / wk less holidays	36.0	09-Mar-16	23-Apr-16	1.0																												
TS3W_5550.10	Walls and Roof Slab - Bay 1	Cal 1 - 6 days / wk less holidays	12.0	09-Mar-16	22-Mar-16	1.0	■ Walls and Roof Slab - Bay 1																																
TS3W_5550.20	Walls and Roof Slab - Bay 2	Cal 1 - 6 days / wk less holidays	12.0	23-Mar-16	09-Apr-16	1.0	■ Walls and Roof Slab - Bay 2																																
TS3W_5550.30	Walls and Roof Slab - Bay 3	Cal 1 - 6 days / wk less holidays	12.0	11-Apr-16	23-Apr-16	1.0	■ Walls and Roof Slab - Bay 3																																
<b>TS3W Box Structure - Waterproofing + Screeding + Cable Trough</b>							Cal 1 - 6 days / wk less holidays	57.0	12-Mar-16	23-May-16	31.0																												
TS3W_5560.10	Waterproofing to Walls Bay 1 to Bay 3	Cal 1 - 6 days / wk less holidays	20.0	12-Mar-16	08-Apr-16	44.0	■ Waterproofing to Walls Bay 1 to Bay 3																																
TS3W_5560.20	Waterproofing to Roof Slab Bay 1 to Bay 3	Cal 1 - 6 days / wk less holidays	12.0	25-Apr-16	07-May-16	31.0	■ Waterproofing to Roof Slab Bay 1 to Bay 3																																
TS3W_5560.40	Cable Trough - Bay 1 to Bay 3	Cal 1 - 6 days / wk less holidays	20.0	25-Apr-16	18-May-16	35.0	■ Cable Trough - Bay 1 to Bay 3																																
TS3W_5560.30	Screeding to Roof Slab Bay 1 to Bay 3	Cal 1 - 6 days / wk less holidays	12.0	09-May-16	23-May-16	31.0	■ Screeding to Roof Slab Bay 1 to Bay 3																																
<b>Bay 1-13 TS3 West CCT Structure - Ch.4300.000 to Ch.4440.000 (Ref. East Bound)</b>							Cal 1 - 6 days / wk less holidays	162.0	05-Jan-16	22-Jul-16	5.0																												
<b>Blinding + Waterproofing Bay 1-13 (Ch.4300.000 to Ch.4440.000)</b>							Cal 1 - 6 days / wk less holidays	17.0	05-Jan-16	23-Jan-16	0.0																												
TS3W_5610.10	TS3(W) CCT Blinding - Bay 1 - 13	Cal 1 - 6 days / wk less holidays	13.0	05-Jan-16	19-Jan-16	0.0	■ TS3(W) CCT Blinding - Bay 1 - 13																																
TS3W_5610.15	TS3(W) - Waterproofing Bay 1 - 13	Cal 1 - 6 days / wk less holidays	13.0	09-Jan-16	23-Jan-16	0.0	■ TS3(W) - Waterproofing Bay 1 - 13																																
<b>Base Slab + Drainage Bay 1-13 (Ch.4300.000 to Ch.4440.000)</b>							Cal 1 - 6 days / wk less holidays	92.0	15-Jan-16	09-May-16	2.0																												
TS3W_5630	TS3(W) Base Slab + Drainage - Bay 1 Ch.4300.000 to Ch. 4310.000 (Ref. Eastbound)	Cal 1 - 6 days / wk less holidays	8.0	15-Jan-16	23-Jan-16	0.0	■ TS3(W) Base Slab + Drainage - Bay 1 Ch.4300.000 to Ch. 4310.000 (Ref. Eastbound)																																
TS3W_5640	TS3(W) Base Slab + Drainage - Bay 2 Ch.4310.000 to Ch. 4320.000 (Ref. Eastbound)	Cal 1 - 6 days / wk less holidays	8.0	22-Jan-16	30-Jan-16	0.0	■ TS3(W) Base Slab + Drainage - Bay 2 Ch.4310.000 to Ch. 4320.000 (Ref. Eastbound)																																
TS3W_5650	TS3(W) Base Slab + Drainage - Bay 3 Ch.4320.000 to Ch. 4330.000 (Ref. Eastbound)	Cal 1 - 6 days / wk less holidays	8.0	29-Jan-16	10-Feb-16	0.0	■ TS3(W) Base Slab + Drainage - Bay 3 Ch.4320.000 to Ch. 4330.000 (Ref. Eastbound)																																
TS3W_5660	TS3(W) Base Slab + Drainage - Bay 4 Ch.4330.000 to Ch. 4340.000 (Ref. Eastbound)	Cal 1 - 6 days / wk less holidays	8.0	11-Feb-16	19-Feb-16	0.0	■ TS3(W) Base Slab + Drainage - Bay 4 Ch.4330.000 to Ch. 4340.000 (Ref. Eastbound)																																
TS3W_5670	TS3(W) Base Slab + Drainage - Bay 5 Ch.4340.000 to Ch. 4350.000 (Ref. Eastbound)	Cal 1 - 6 days / wk less holidays	8.0	18-Feb-16	26-Feb-16	0.0	■ TS3(W) Base Slab + Drainage - Bay 5 Ch.4340.000 to Ch. 4350.000 (Ref. Eastbound)																																
TS3W_5680	TS3(W) Base Slab + Drainage - Bay 6 Ch.4350.000 to Ch. 4360.000 (Ref. Eastbound)	Cal 1 - 6 days / wk less holidays	8.0	27-Feb-16	07-Mar-16	0.0	■ TS3(W) Base Slab + Drainage - Bay 6 Ch.4350.000 to Ch. 4360.000 (Ref. Eastbound)																																
TS3W_5690	TS3(W) Base Slab + Drainage - Bay 7 Ch.4360.000 to Ch. 4370.000 (Ref. Eastbound)	Cal 1 - 6 days / wk less holidays	8.0	05-Mar-16	14-Mar-16	0.0	■ TS3(W) Base Slab + Drainage - Bay 7 Ch.4360.000 to Ch. 4370.000 (Ref. Eastbound)																																
TS3W_5700	TS3(W) Base Slab + Drainage - Bay 8 Ch.4380.000 to Ch. 4390.000 (Ref. Eastbound)	Cal 1 - 6 days / wk less holidays	8.0	15-Mar-16	23-Mar-16	0.0	■ TS3(W) Base Slab + Drainage - Bay 8 Ch.4380.000 to Ch. 4390.000 (Ref. Eastbound)																																
TS3W_5710	TS3(W) Base Slab + Drainage - Bay 9 Ch.4390.000 to Ch. 4400.000 (Ref. Eastbound)	Cal 1 - 6 days / wk less holidays	8.0	22-Mar-16	04-Apr-16	0.0	■ TS3(W) Base Slab + Drainage - Bay 9 Ch.4390.000 to Ch. 4400.000 (Ref. Eastbound)																																
TS3W_5720	TS3(W) Base Slab + Drainage - Bay 10 Ch.4400.000 to Ch. 4410.000 (Ref. Eastbound)	Cal 1 - 6 days / wk less holidays	8.0	05-Apr-16	13-Apr-16	0.0	■ TS3(W) Base Slab + Drainage - Bay 10 Ch.4400.000 to Ch. 4410.000 (Ref. Eastbound)																																
TS3W_5730	TS3(W) Base Slab + Drainage - Bay 11 Ch.4410.000 to Ch. 4420.000 (Ref. Eastbound)	Cal 1 - 6 days / wk less holidays	8.0	12-Apr-16	20-Apr-16	0.0	■ TS3(W) Base Slab + Drainage - Bay 11 Ch.4410.000 to Ch. 4420.000 (Ref. Eastbound)																																
TS3W_5740	TS3(W) Base Slab + Drainage - Bay 12 Ch.4420.000 to Ch. 4430.000 (Ref. Eastbound)	Cal 1 - 6 days / wk less holidays	8.0	21-Apr-16	29-Apr-16	0.0	■ TS3(W) Base Slab + Drainage - Bay 12 Ch.4420.000 to Ch. 4430.000 (Ref. Eastbound)																																
TS3W_5750	TS3(W) Base Slab + Drainage - Bay 13 Ch.4430.000 to Ch. 4440.000 (Ref. Eastbound)	Cal 1 - 6 days / wk less holidays	8.0	30-Apr-16	09-May-16	2.0	■ TS3(W) Base Slab + Drainage - Bay 13 Ch.4430.000 to Ch. 4440.000 (Ref. Eastbound)																																
<b>Intermediated Walls Bay 1 - 13 (Ch.4300.000 to Ch. 4440.000)</b>							Cal 1 - 6 days / wk less holidays	98.0	22-Jan-16	24-May-16	0.0																												
TS3W_5820	TS3(W) Intermediate Walls - Bay 1	Cal 1 - 6 days / wk less holidays	10.0	22-Jan-16	05-Feb-16	0.0	■ TS3(W) Intermediate Walls - Bay 1																																
TS3W_5830	TS3(W) Intermediate Walls - Bay 2	Cal 1 - 6 days / wk less holidays	10.0	01-Feb-16	15-Feb-16	0.0	■ TS3(W) Intermediate Walls - Bay 2																																
TS3W_5840	TS3(W) Intermediate Walls - Bay 3	Cal 1 - 6 days / wk less holidays	10.0	13-Feb-16	24-Feb-16	0.0	■ TS3(W) Intermediate Walls - Bay 3																																
TS3W_5850	TS3(W) Intermediate Walls - Bay 4	Cal 1 - 6 days / wk less holidays	10.0	20-Feb-16	02-Mar-16	0.0	■ TS3(W) Intermediate Walls - Bay 4																																
TS3W_5860	TS3(W) Intermediate Walls - Bay 5	Cal 1 - 6 days / wk less holidays	10.0	27-Feb-16	09-Mar-16	0.0	■ TS3(W) Intermediate Walls - Bay 5																																
TS3W_5870	TS3(W) Intermediate Walls - Bay 6	Cal 1 - 6 days / wk less holidays	10.0	08-Mar-16	18-Mar-16	0.0	■ TS3(W) Intermediate Walls - Bay 6																																
TS3W_5880	TS3(W) Intermediate Walls - Bay 7	Cal 1 - 6 days / wk less holidays	10.0	15-Mar-16	29-Mar-16	0.0	■ TS3(W) Intermediate Walls - Bay 7																																
TS3W_5890	TS3(W) Intermediate Walls - Bay 8	Cal 1 - 6 days / wk less holidays	10.0	24-Mar-16	08-Apr-16	0.0	■ TS3(W) Intermediate Walls - Bay 8																																
TS3W_5900	TS3(W) Intermediate Walls - Bay 9	Cal 1 - 6 days / wk less holidays	10.0	07-Apr-16	18-Apr-16	0.0	■ TS3(W) Intermediate Walls - Bay 9																																
TS3W_5910	TS3(W) Intermediate Walls - Bay 10	Cal 1 - 6 days / wk less holidays	10.0	14-Apr-16	25-Apr-16	0.0	■ TS3(W) Intermediate Walls - Bay 10																																
TS3W_5920	TS3(W) Intermediate Walls - Bay 11	Cal 1 - 6 days / wk less holidays	10.0	21-Apr-16	02-May-16	0.0	■ TS3(W) Intermediate Walls - Bay 11																																
TS3W_5930	TS3(W) Intermediate Walls - Bay 12	Cal 1 - 6 days / wk less holidays	10.0	30-Apr-16	11-May-16	0.0	■ TS3(W) Intermediate Walls - Bay 12																																
TS3W_5940	TS3(W) Intermediate Walls - Bay 13	Cal 1 - 6 days / wk less holidays	10.0	12-May-16	24-May-16	0.0	■ TS3(W) Intermediate Walls - Bay 13																																
<b>OHVD Bay 1 to Bay 13 (Ch.4300.000 to Ch.4440.000)</b>							Cal 1 - 6 days / wk less holidays	98.0	06-Feb-16	04-Jun-16	0.0																												
TS3W_6020	TS3(W) Overhead Ventilation Duct (OVHD) - Bay 1	Cal 1 - 6 days / wk less holidays	10.0	06-Feb-16	17-Feb-16	0.0	■ TS3(W) Overhead Ventilation Duct (OVHD) - Bay 1																																
TS3W_6030	TS3(W) Overhead Ventilation Duct (OVHD) - Bay 2	Cal 1 - 6 days / wk less holidays	10.0	16-Feb-16	26-Feb-16	0.0	■ TS3(W) Overhead Ventilation Duct (OVHD) - Bay 2																																
TS3W_6040	TS3(W) Overhead Ventilation Duct (OVHD) - Bay 3	Cal 1 - 6 days / wk less holidays	10.0	25-Feb-16	07-Mar-16	0.0	■ TS3(W) Overhead Ventilation Duct (OVHD) - Bay 3																																









Activity ID	Activity Name	Calendar	Original Duration	Start	Finish	Total Float	2013				2014				2015				2016				2017				2018				2019			
							Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
<b>TTA Stage 0 (East Bound)</b>																																		
<b>Piling / Utility Diversion Stage 1 - Area 1B</b>																																		
SR8_1212	ULG coordination with UU for diversions works	Cal 1 - 6 days / wk less holidays	310.0	21-Mar-13	07-Apr-14	0.0	■ ULG coordination with UU for diversions works																											
SR8_1080	Receipt of excavation permit	Cal 1 - 6 days / wk less holidays	0.0	21-Mar-13	30-Nov-13	0.0	◆ Receipt of excavation permit																											
SR8_1210	Trial pit excavation	Cal 1 - 6 days / wk less holidays	21.0	21-Jun-13	16-Jul-13	0.0	■ Trial pit excavation																											
SR8_1120	Install new traffic signs prior to removal of existing sign gantry	Cal 1 - 6 days / wk less holidays	12.0	17-Jul-13	30-Jul-13	0.0	■ Install new traffic signs prior to removal of existing sign gantry																											
SR8_1220	SI drilling	Cal 1 - 6 days / wk less holidays	24.0	31-Jul-13	27-Aug-13	0.0	■ SI drilling																											
SR8_1240.01	Trench Excavation to expose underground Utilities	Cal 1 - 6 days / wk less holidays	12.0	28-Aug-13	10-Sep-13	0.0	■ Trench Excavation to expose underground Utilities																											
SR8_1240.10	Diversion 11kv Cable to top of 132kv trough along Seafront	Cal 1 - 6 days / wk less holidays	13.0	11-Sep-13	26-Sep-13	0.0	■ Diversion 11kv Cable to top of 132kv trough along Seafront																											
SR8_1240.20	Diversion / Protection of Telecom Cables along Seafront	Cal 1 - 6 days / wk less holidays	13.0	26-Sep-13	11-Oct-13	0.0	■ Diversion / Protection of Telecom Cables along Seafront																											
SR8_1230	Site Formation / Working Platform / Footpath diversion	Cal 1 - 6 days / wk less holidays	14.0	12-Oct-13	29-Oct-13	0.0	■ Site Formation / Working Platform / Footpath diversion																											
SR8_1300.10	Temporary pipe pile - Stage 1	Cal 1 - 6 days / wk less holidays	28.0	30-Oct-13	30-Nov-13	0.0	■ Temporary pipe pile - Stage 1																											
<b>Piling / Utility Diversion Stage 2 - Area 1B</b>																																		
SR8_1240.30	Diversion of Water Mains along Seafront	Cal 1 - 6 days / wk less holidays	15.0	02-Dec-13	18-Dec-13	0.0	■ Diversion of Water Mains along Seafront																											
SR8_1240.40	Diversion of Town Gas Pipes along Seafront (Footpath)	Cal 1 - 6 days / wk less holidays	15.0	19-Dec-13	08-Jan-14	0.0	■ Diversion of Town Gas Pipes along Seafront (Footpath)																											
SR8_1300.20	Temporary pipe pile - Stage 2	Cal 1 - 6 days / wk less holidays	28.0	21-Dec-13	25-Jan-14	0.0	■ Temporary pipe pile - Stage 2																											
SR8_1240.50	Diversion of Town Gas along Sea Front (carriage way)	Cal 1 - 6 days / wk less holidays	15.0	09-Jan-14	25-Jan-14	0.0	■ Diversion of Town Gas along Sea Front (carriage way)																											
SR8_1320	Pile Foundation - Pre-Bored H Piles	Cal 1 - 6 days / wk less holidays	30.0	23-Jan-14	01-Mar-14	0.0	■ Pile Foundation - Pre-Bored H Piles																											
SR8_1330	Curtain grout & ground improvement works	Cal 1 - 6 days / wk less holidays	30.0	30-Jan-14	08-Mar-14	0.0	■ Curtain grout & ground improvement works																											
SR8_1240.60	Escavate and Install Steel Hangers to support Utilities	Cal 1 - 6 days / wk less holidays	24.0	10-Feb-14	08-Mar-14	0.0	■ Escavate and Install Steel Hangers to support Utilities																											
SR8_1360	Temp. Decking for TTA - Area 1B / Pit A	Cal 1 - 6 days / wk less holidays	24.0	10-Mar-14	07-Apr-14	0.0	■ Temp. Decking for TTA - Area 1B / Pit A																											
SR8_1355	Install D. Wells & Carry out Pump test	Cal 1 - 6 days / wk less holidays	12.0	10-Mar-14	22-Mar-14	0.0	■ Install D. Wells & Carry out Pump test																											
<b>Area 2 / Pit C (Ch 490 to Ch 480 - Retrieval Pit)</b>																																		
<b>TTA (Submissions, Approvals and Implementation)</b>																																		
SR8_150	Preparation and submission	Cal 1 - 6 days / wk less holidays	24.0	16-Dec-13	15-Jan-14	30.0	■ Preparation and submission																											
SR8_155	TMLG - review and approval	Cal 1 - 6 days / wk less holidays	24.0	16-Jan-14	15-Feb-14	30.0	■ TMLG - review and approval																											
SR8_160	TTA drawing endorsement	Cal 1 - 6 days / wk less holidays	0.0	15-Feb-14	15-Feb-14	30.0	◆ TTA drawing endorsement																											
SR8_165	Apply and receive RWA	Cal 1 - 6 days / wk less holidays	12.0	17-Feb-14	01-Mar-14	30.0	■ Apply and receive RWA																											
<b>Method Statement</b>																																		
SR8_140	(01)ELS works method statement - submission	Cal 1 - 6 days / wk less holidays	24.0	06-Jan-14	05-Feb-14	27.0	■ (01)ELS works method statement - submission																											
SR8_145	(01)ELS works method statement - review and approval by AECOM	Cal 1 - 6 days / wk less holidays	24.0	06-Feb-14	05-Mar-14	27.0	■ (01)ELS works method statement - review and approval by AECOM																											
<b>TTA Stage 1A (VP Road / IEC East Bound)</b>																																		
SR8_175	Implement TTA Stage 1A - divert traffic in Area 1B	Cal 1 - 6 days / wk less holidays	0.0	08-Apr-14	16-Feb-15	0.0	◆ Implement TTA Stage 1A - divert traffic in Area 1B																											
<b>Cofferdam and ELS Works</b>																																		
SR8_1380	Implement - TTA Stage 1A	Cal 1 - 6 days / wk less holidays	0.0	08-Apr-14	16-Feb-15	0.0	◆ Implement - TTA Stage 1A																											
SR8_1420	Ground pretreatment	Cal 1 - 6 days / wk less holidays	14.0	08-Apr-14	26-Apr-14	0.0	■ Ground pretreatment																											
SR8_1430	Gas main connection & other U/G utilities	Cal 1 - 6 days / wk less holidays	21.0	08-Apr-14	07-May-14	0.0	■ Gas main connection & other U/G utilities																											
SR8_1460	SI drilling	Cal 1 - 6 days / wk less holidays	18.0	08-May-14	28-May-14	0.0	■ SI drilling																											
SR8_1500	Pipe pile for cofferdam/ bulkhead	Cal 1 - 6 days / wk less holidays	96.0	29-May-14	20-Sep-14	0.0	■ Pipe pile for cofferdam/ bulkhead																											
SR8_1570	Foundation works (Pre-bored H Piles)	Cal 1 - 6 days / wk less holidays	48.0	22-Sep-14	18-Nov-14	0.0	■ Foundation works (Pre-bored H Piles)																											
SR8_1580	Curtain grout & ground improvement works	Cal 1 - 6 days / wk less holidays	38.0	06-Oct-14	18-Nov-14	0.0	■ Curtain grout & ground improvement works																											
SR8_1610	Install dewatering well & Pump Test	Cal 1 - 6 days / wk less holidays	20.0	19-Nov-14	11-Dec-14	0.0	■ Install dewatering well & Pump Test																											
SR8_1630	Excavation and Lateral Support (ELS)	Cal 1 - 6 days / wk less holidays	54.0	12-Dec-14	16-Feb-15	0.0	■ Excavation and Lateral Support (ELS)																											
<b>Area 6 / Pit B (Ch 430 to Ch 420)</b>																																		
<b>TTA (Submissions, Approvals and Implementation)</b>																																		
SR8_185	Preparation and submission	Cal 1 - 6 days / wk less holidays	60.0	21-Mar-13	05-Jun-13	59.0	■ Preparation and submission																											
SR8_190	TMLG - review and approval	Cal 1 - 6 days / wk less holidays	24.0	06-Jun-13	05-Jul-13	59.0	■ TMLG - review and approval																											
SR8_195	TTA drawing endorsement	Cal 1 - 6 days / wk less holidays	0.0	05-Jul-13	05-Jul-13	59.0	◆ TTA drawing endorsement																											
SR8_200	Apply and receive RWA	Cal 1 - 6 days / wk less holidays	24.0	06-Jul-13	02-Aug-13	59.0	■ Apply and receive RWA																											
SR8_205	Trial Run	Cal 1 - 6 days / wk less holidays	2.0	07-Sep-13	09-Sep-13	29.0	Trial Run																											
SR8_210	Implement TTA for site access/ tree transplanting works	Cal 1 - 6 days / wk less holidays	1.0	10-Sep-13	10-Sep-13	29.0	Implement TTA for site access/ tree transplanting works																											
<b>Temp. Pit &amp; Jacking Pit: ELS Temp. Work Design Submission to AECOM/GEO</b>																																		
GEO_1090	1st Submission package - Preparation and submission	Cal 1 - 6 days / wk less holidays	61.0	30-Apr-13	13-Jul-13	28.0	■ 1st Submission package - Preparation and submission																											

Remaining Level of Effort  
 Remaining Work  
 Critical Remaining Work  
 Milestone  
 Milestone - Non C

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China State Construction Engineering (Hong Kong) Ltd  
 Contract No. HY/2010/08 - Central Wan Chai By Pass - Tunnel (SR8 Section)  
 DETAILED WORKS PROGRAMME REF. DWP/Rev.03

Date	Revision	Checked	Approved
16-Oct-13	HY/2010/08 DWP Rev. 03 (3rd Submission)	DL/WC	DC



















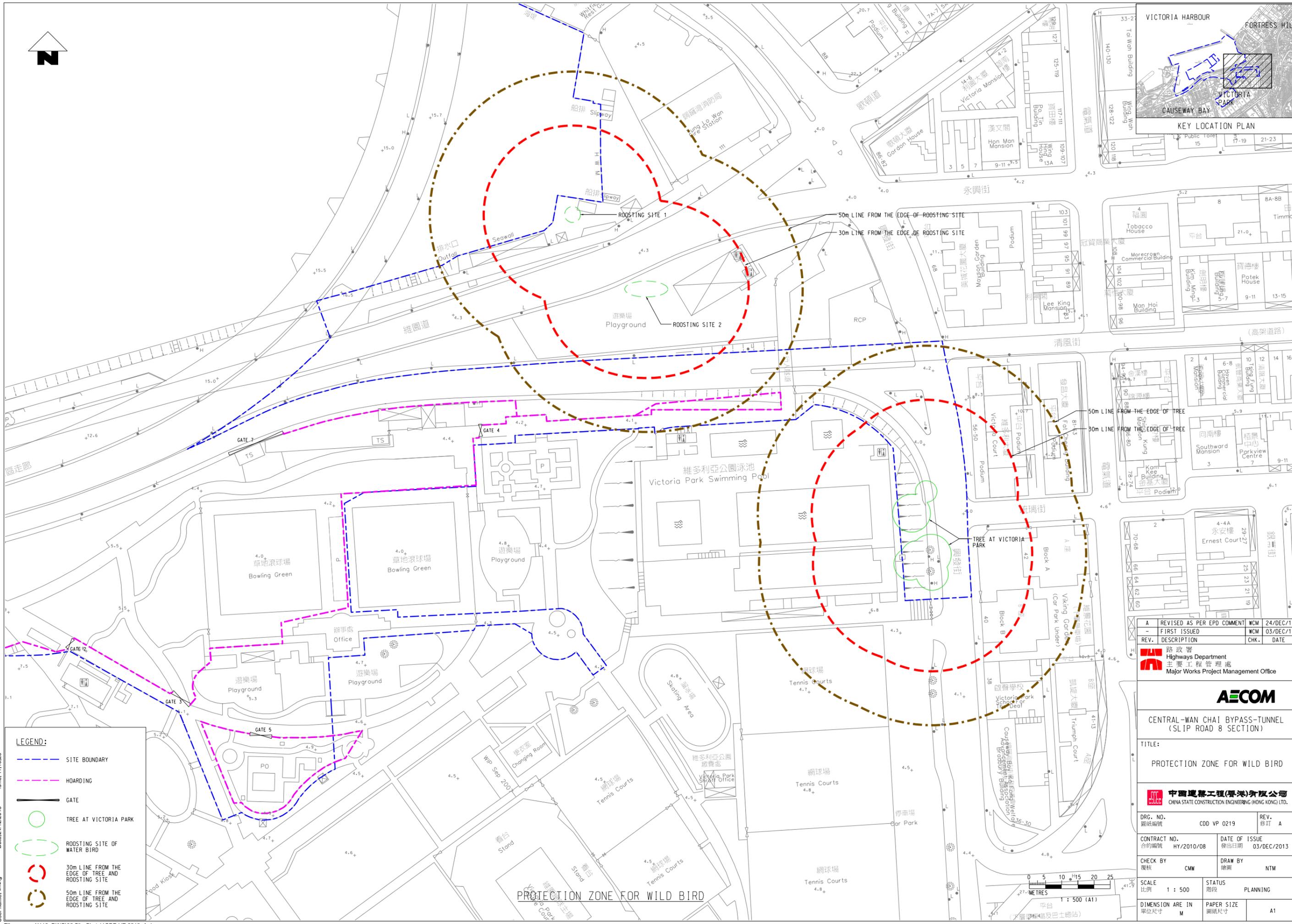


Activity ID	Activity Name	Calendar	Original Duration	Start	Finish	Total Float	2013				2014				2015				2016				2017				2018				2019					
							Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
<b>Mooring Components Upkeep (CBTS and ATS)</b>																																				
MAR_2000	Mooring Upkeep at Portion XIX(19) & XX(20) - ATS (if instructed by Engineer)	Cal 3 - 7 days / wk (no holidays)	1399.0	21-Mar-13	17-Jan-17	0.0	Mooring Upkeep at Portion XIX(19) & XX(20) - ATS (if instructed by Engineer)																													
MAR_1000	Mooring Upkeep at Portion III (3) - CBTS	Cal 3 - 7 days / wk (no holidays)	574.0	15-May-14	09-Dec-15	0.0	Mooring Upkeep at Portion III (3) - CBTS																													
MAR_3020	Mooring Upkeep at Portion X(10) & XVI(16) - CBTS	Cal 3 - 7 days / wk (no holidays)	979.0	15-May-14	17-Jan-17	0.0	Mooring Upkeep at Portion X(10) & XVI(16) - CBTS																													
MAR_1010	Completion of KD 15 - Section 9 (Works in Portion III)	Cal 3 - 7 days / wk (no holidays)	0.0		09-Dec-15	0.0	◆ Completion of KD 15 - Section 9 (Works in Portion III)																													
MAR_2010	Completion of KD 8 - Section 5A (Works in Portion X, XVI, XIX & XX)	Cal 3 - 7 days / wk (no holidays)	0.0		17-Jan-17	0.0	◆ Completion of KD 8 - Section 5A (Works in Portion X, XVI, XIX & XX)																													
<b>Works for Public Works Regional Laboratory (North Lantau)</b>																																				
<b>Contractors Design</b>																																				
PWRL_0105	Permanent Works Design + ICE - submission	Cal 1 - 6 days / wk less holidays	17.0	21-Mar-13	13-Apr-13	0.0	■ Permanent Works Design + ICE - submission																													
PWRL_0125	Permanent Works Design - review and approval by AECOM	Cal 1 - 6 days / wk less holidays	18.0	15-Apr-13	06-May-13	0.0	■ Permanent Works Design - review and approval by AECOM																													
<b>Method Statement</b>																																				
PWRL_0100	(01) Method statement - submission	Cal 1 - 6 days / wk less holidays	17.0	21-Mar-13	13-Apr-13	0.0	■ (01) Method statement - submission																													
PWRL_0120	(01) Method statement - review and approval by AECOM	Cal 1 - 6 days / wk less holidays	18.0	15-Apr-13	06-May-13	0.0	■ (01) Method statement - review and approval by AECOM																													
<b>Procurement- ABWF</b>																																				
PWRL_0110	Shopdrawing submission	Cal 1 - 6 days / wk less holidays	18.0	27-Mar-13	20-Apr-13	0.0	■ Shopdrawing submission																													
PWRL_0130	Shopdrawing - ER review and approval	Cal 1 - 6 days / wk less holidays	18.0	22-Apr-13	13-May-13	0.0	■ Shopdrawing - ER review and approval																													
PWRL_0140	Fabrication/Order/Delivery	Cal 1 - 6 days / wk less holidays	18.0	14-May-13	04-Jun-13	0.0	■ Fabrication/Order/Delivery																													
<b>Procurement- E&amp;M</b>																																				
PWRL_0115	Shopdrawing submission	Cal 1 - 6 days / wk less holidays	18.0	27-Mar-13	20-Apr-13	0.0	■ Shopdrawing submission																													
PWRL_0135	Shopdrawing - ER review and approval	Cal 1 - 6 days / wk less holidays	18.0	22-Apr-13	13-May-13	0.0	■ Shopdrawing - ER review and approval																													
PWRL_0145	Fabrication/Order/Delivery	Cal 1 - 6 days / wk less holidays	18.0	14-May-13	04-Jun-13	0.0	■ Fabrication/Order/Delivery																													
<b>Construction of New PWRL (Portion XVII)</b>																																				
PWRL_1020	New PWRL - Initial works (mobilization, site clearance)	Cal 1 - 6 days / wk less holidays	35.0	21-Mar-13	06-May-13	0.0	■ New PWRL - Initial works (mobilization, site clearance)																													
PWRL_1030.01	New PWRL - civil/ structural works	Cal 1 - 6 days / wk less holidays	24.0	07-May-13	04-Jun-13	0.0	■ New PWRL - civil/ structural works																													
PWRL_1030.02	New PWRL - ABWF works	Cal 1 - 6 days / wk less holidays	24.0	05-Jun-13	04-Jul-13	0.0	■ New PWRL - ABWF works																													
PWRL_1030.03	New PWRL - E&M equipment, building services	Cal 1 - 6 days / wk less holidays	24.0	05-Jun-13	04-Jul-13	0.0	■ New PWRL - E&M equipment, building services																													
PWRL_1030.05	New PWRL - external works	Cal 1 - 6 days / wk less holidays	36.0	05-Jun-13	18-Jul-13	0.0	■ New PWRL - external works																													
PWRL_1030.04	New PWRL - Power On/T&C	Cal 1 - 6 days / wk less holidays	12.0	05-Jul-13	18-Jul-13	0.0	■ New PWRL - Power On/T&C																													
PWRL_1040	Achievement of KD1 - Achievement of Stage 1	Cal 1 - 6 days / wk less holidays	0.0		18-Jul-13	0.0	◆ Achievement of KD1 - Achievement of Stage 1																													
<b>Maintenance and Upkeep of New PWRL (Portion XVII)</b>																																				
PWRL_1050	Maintenance/ Upkeep of New PWRL	Cal 1 - 6 days / wk less holidays	1301.0	19-Jul-13	20-Nov-17	0.0	■ Maintenance/ Upkeep of New PWRL																													
PWRL_1080	Completion of KD17 - Completion of Section 10B	Cal 1 - 6 days / wk less holidays	0.0		20-Nov-17	0.0	◆ Completion of KD17 - Completion of Section 10B																													
<b>Demolition of Existing PWRL (Portion XVIII)</b>																																				
PWRL_1010	Method Statement - submission and approval	Cal 1 - 6 days / wk less holidays	48.0	09-Jul-13	02-Sep-13	12.0	■ Method Statement - submission and approval																													
PWRL_1060	Demolition of Existing PWRL & Reinstatement works	Cal 1 - 6 days / wk less holidays	49.0	17-Sep-13	15-Nov-13	0.0	■ Demolition of Existing PWRL & Reinstatement works																													
PWRL_1030	Site Possession of Portion XVIII (180 days)	Cal 1 - 6 days / wk less holidays	0.0	17-Sep-13		0.0	◆ Site Possession of Portion XVIII (180 days)																													
PWRL_1070	Completion of KD16 - Completion of Section 10A	Cal 1 - 6 days / wk less holidays	0.0		15-Nov-13	0.0	◆ Completion of KD16 - Completion of Section 10A																													

## APPENDIX D

Location of the water birds roosting sites





**LEGEND:**

- SITE BOUNDARY
- HOARDING
- GATE
- TREE AT VICTORIA PARK
- ROOSTING SITE OF WATER BIRD
- 30m LINE FROM THE EDGE OF TREE AND ROOSTING SITE
- 50m LINE FROM THE EDGE OF TREE AND ROOSTING SITE

A	REVISED AS PER EPD COMMENT	WCM	24/DEC/13
-	FIRST ISSUED	WCM	03/DEC/13
REV.	DESCRIPTION	CHK.	DATE
 路政署 Highways Department 主要工程管理處 Major Works Project Management Office			

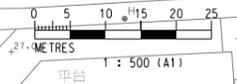


**CENTRAL-WAN CHAI BYPASS-TUNNEL (SLIP ROAD 8 SECTION)**

TITLE:  
**PROTECTION ZONE FOR WILD BIRD**



DRG. NO. 圖紙編號	CDD VP 0219	REV. 修訂	A
CONTRACT NO. 合約編號	HY/2010/08	DATE OF ISSUE 發出日期	03/DEC/2013
CHECK BY 覆核	CMW	DRAW BY 繪圖	NTM
SCALE 比例	1 : 500	STATUS 階段	PLANNING
DIMENSION ARE IN 單位尺寸	M	PAPER SIZE 圖紙尺寸	A1



Date: 24/12/2013 Time: 11:15:25 User name: tm.ng



CAUSEWAY BAY TYPHOON SHELTER

銅鑼灣避風塘  
CAUSEWAY BAY TYPHOON SHELTER

ISLAND EASTERN CORRIDOR

VICTORIA PARK ROAD

VICTORIA PARK

PROTECTION ZONE FOR WILD BIRD

50m LINE FROM THE EDGE OF ROOSTING SITE  
30m LINE FROM THE EDGE OF ROOSTING SITE  
ROOSTING SITE 1  
ROOSTING SITE 2

50m LINE FROM THE EDGE OF TREE  
30m LINE FROM THE EDGE OF TREE  
TREE AT NORTH-EASTERN PART OF VICTORIA PARK

**LEGEND:**

- SITE BOUNDARY
- HOARDING
- TREE AT VICTORIA PARK
- ROOSTING SITE OF WATER BIRD
- 30m LINE FROM THE EDGE OF TREE AND ROOSTING SITE
- 50m LINE FROM THE EDGE OF TREE AND ROOSTING SITE

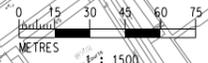
A	REVISED AS PER EPD COMMENT	WCM	24/DEC/13
-	FIRST ISSUED	WCM	03/DEC/13
REV.	DESCRIPTION	CHK.	DATE
 路政署 Highways Department 主要工程管理处 Major Works Project Management Office			

**AECOM**  
CENTRAL-WAN CHAI BYPASS-TUNNEL  
(SLIP ROAD 8 SECTION)

TITLE:  
PROTECTION ZONE FOR WILD BIRD  
(WITH CONTRACT BOUNDARY)

中國建築工程(香港)有限公司  
CHINA STATE CONSTRUCTION ENGINEERING (HONG KONG) LTD.

DRG. NO. 圖紙編號	CDD VP 0220	REV. 修訂	A
CONTRACT NO. 合約編號	HY/2010/08	DATE OF ISSUE 發出日期	04/DEC/2013
CHECK BY 覆核	CMW	DRAW BY 繪圖	NTM
SCALE 比例	1 : 1500	STATUS 階段	PLANNING
DIMENSION ARE IN 單位尺寸	M	PAPER SIZE 圖紙尺寸	A1



User name: tm.ng  
Date: 24/12/2013  
Time: 10:59:26

## APPENDIX E

Photo of light diffusers

