## **Civil Engineering and Development Department**

### Contract No. ED/2018/04

## Trunk Road T2 and Infrastructure Works for **Developments at the Former South Apron**

## **Quarterly Environmental Monitoring and Audit** Report

(under EP-458/2013/C)

February 2021 - April 2021 (Version 1)

Approved By (Environmental Team Leader: Mr. KS Lee)

#### REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties

#### CINOTECH CONSULTANTS LTD

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Ref.: CEDKTDT2EM00\_0\_0277L.21

1 November 2021

Hyder-Meinhardt Joint Venture 17/F, Two Harbour Square 180 Wai Yip Street, Kwun Tong

Kowloon, Hong Kong

By Post and Email

Attention: Mr. Edwin Ching

Dear Mr. Ching,

Re: Agreement No. EDO 01/2019 **Independent Environmental Checker for** 

Contract No. ED/2018/04 - Trunk Road T2 and Infrastructure Works for

**Developments at the Former South Apron** (Environmental Permit: EP-458/2013/C)

#### **Quarterly EM&A Summary Report (February 2021 to April 2021)**

Reference is made to the Environmental Team's submission of the Quarterly EM&A Summary Report for February 2021 to April 2021 (Version 1) certified by the ET Leader and provided to us via email on 19 October 2021.

We are pleased to inform you that we have no adverse comment on the captioned submission.

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

Yours sincerely, For and on behalf of Ramboll Hong Kong Limited

Y H Hui Independent Environmental Checker

C.C.

CEDD

Attn.: Mr. Tommy Wong

Fax: 2739 0076

BTP

Attn.: Mr. Ivan Chau

By email

Cinotech

Attn.: Mr. K. S. Lee

Fax: 3107 1388

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#### **EXECUTIVE SUMMARY**

#### Introduction

1. This is the 4<sup>th</sup> Quarterly Environmental Monitoring and Audit (EM&A) Report prepared by the Environmental Team (ET), Cinotech Consultants Ltd., for "Trunk Road T2 and Infrastructure Works at the Former South Apron". This report summarized the monitoring results and audits findings of the EM&A programme under the issued Environmental Permit (EP) No. EP-458/2013/C and in accordance with the EM&A Manual (AEIAR-173/2013) during the reporting period from February 2021 to April 2021.

#### Summary of Main Works Undertaken and Key Measures Implemented

2. The construction activities undertaken in the reporting quarter were as follows:

February 2021

- West Bound Drill & Break Tunnel
- East Bound Drill & Blast Tunnel

March 2021

- West Bound Drill & Break Tunnel
- East Bound Drill & Blast Tunnel

April 2021

- West Bound Drill & Break Tunnel
- East Bound Drill & Blast Tunnel
- WB East Ventilation Building Excavation
- 3. Implementation of the key mitigation measures during the reporting period are as follows:

Construction Noise

- Construction activities were scheduled to minimize noise nuisance to the nearby sensitive receiver.
- Use of Quality Powered Mechanical Equipment (QPME) on site.
- Erected the noise barrier on site.

Air Quality

• Regularly watering on site to avoid dust generation.

Landscape and Visual

• Tree protection zones were fenced off to protect the existing trees on site.

#### **Environmental Monitoring Works**

- 4. Environmental monitoring for the Project was performed in accordance with the EM&A Manual and the monitoring results were checked and reviewed. Site Inspections/Audits were conducted once per week. The implementation of the environmental mitigation measures, Event Action Plans and environmental complaint handling procedures were also checked.
- 5. Summary of the non-compliance in the reporting quarter for the Project is tabulated in **Table**

I. Details of the environmental monitoring results is presented in **Section 3**.

Table I Non-compliance (Exceedance) Record for the Project in the Reporting Quarter

Parameter	No. of Exceedance		No. of Exceedance due to Construction Activities of this Project		Action Taken
	<b>Action Level</b>	Limit Level	Action Level	<b>Limit Level</b>	
February 2021					
Air Quality	0	0	0	0	N/A
Noise	0	0	0	0	N/A
Marine Water Quality	N/A	N/A	N/A	N/A	N/A
Groundwater Level Monitoring (Piezometer Monitoring)	N/A	N/A	N/A	N/A	N/A
Ecological	N/A	N/A	N/A	N/A	N/A
Cultural Heritage	N/A	N/A	N/A	N/A	N/A
Landfill Gas	N/A	0	N/A	0	N/A
March 2021					
Air Quality	0	0	0	0	N/A
Noise	0	0	0	0	N/A
Marine Water Quality	N/A	N/A	N/A	N/A	N/A
Groundwater Level Monitoring (Piezometer Monitoring)	N/A	N/A	N/A	N/A	N/A
Ecological	N/A	N/A	N/A	N/A	N/A
Cultural Heritage	N/A	N/A	N/A	N/A	N/A
Landfill Gas	N/A	0	N/A	0	N/A
April 2021					
Air Quality	0	0	0	0	N/A
Noise	0	0	0	0	N/A
Marine Water Quality	N/A	N/A	N/A	N/A	N/A
Groundwater Level Monitoring (Piezometer Monitoring)	N/A	N/A	N/A	N/A	N/A
Ecological	N/A	N/A	N/A	N/A	N/A
Cultural Heritage	N/A	N/A	N/A	N/A	N/A
Landfill Gas	N/A	0	N/A	0	N/A

Note:

N/A - Not Applicable.

#### Summary of Complaint, Warning, Notification of Summons and Successful Prosecution

6. Summary of key information in the reporting quarter is tabulated in **Table II**.

Table II Summary Table for Key Information in the Reporting Quarter

E4	Event Details		A 41 TE 1	G
Event	Number	Nature	Action Taken	Status
Complaints Received	1	Noise	Details refer to App J	Closed
Notifications of any summons & prosecutions received	0		N/A	N/A

N/A – Not Applicable

7. Environmental monitoring works for the Project are considered effective and is generating data to categorically identify the environmental impacts from the works and influencing factors in the vicinity of monitoring stations.

#### **Reporting Changes in the Reporting Quarter**

8. No reporting change in the reporting quarter.

#### 1. INTRODUCTION

#### **Background**

- 1.1 In 2009, Civil Engineering and Development Department (CEDD) commissioned a Kai Tak Development (KTD) Trunk Road T2 and Infrastructure at South Apron Investigation. The assignment covers the provision of the Trunk Road T2 and its connections with the Central Kowloon Route (CKR) at the north apron area and the Tseung Kwan O Lam Tin Tunnel (TKOLTT) to the south in the Cha Kwo Ling area.
- 1.2 The Trunk Road T2 Project is one of the designated Projects under Schedule 2 of the EIAO proposed in the KTD. CEDD submitted the Project Profile (No. PP-379/2009) on 24 March 2009 for application for an EIA study brief for the Trunk Road T2 Project under the EIAO. Accordingly, an EIA Study Brief (ESB-203/2009) for the Trunk Road T2 Project was issued on 30 April 2009. The Environmental Impact Assessment (EIA) Report for the Trunk Road T2 Project was approved under the Environmental Impact Assessment Ordinance (EIAO) on 19 September 2013. The corresponding Environmental Permit (EP) was issued on 19 September 2013 (EP no.: EP-451/2013).
- 1.3 The Contract No. ED/2018/04 is the main contract of Trunk Road T2 ("T2 Main Works") which comprises mainly the design and construction of a dual two-lane trunk road of approximately 3.0km long with about 2.7km of the trunk road in form of tunnel; ventilation and administration buildings, environmental protection and mitigation works and etc. The EM&A programme under this Contract is governed by the two EPs (EP-451/2013 and EP-458/2013/C) and two EM&A Manuals (AEIAR-174/2013 and AEIAR-173/2013). The work areas of the T2 Main Works are shown in **Figure 1** and the works to be executed under this Contract and corresponding EPs are summarized as follows:

<b>Environmental Permit</b>	Works Description	
EP-451/2013 – Trunk Road T2	Trunk Road T2	
	• Construction of highway and sub-sea tunnel connecting between	
	Central Kowloon Route and Cha Kwo Ling Tunnel	
	Western & Eastern Ventilation Buildings	
EP-458/2013/C – Tseung Kwan O –	<u>Cha Kwo Ling Tunnel</u>	
Lam Tin Tunnel (TKOLTT) and	Construction of Cha Kwo Ling Tunnel from the end of Trunk Road	
Associated Works	T2 to the TKOLTT at the Eastern Ventilation Building	

#### Monitoring Works in Lam Tin under EP-458/2013/C

- 1.4 Under Agreement No. CE 59/2015 (EP) Tseung Kwan O Lam Tin Tunnel (TKOLLT) and Associated Works, the baseline monitoring works in Lam Tin under the EM&A Manual (AEIAR-173/2013) were conducted by the Environmental Team (ET) for the Agreement No. CE 59/2015 (EP) at the approved monitoring locations, namely AM1, AM2, AM3, AM4, AM4 (A) CM1, CM2, CM3, CM4 and CM5. Impact monitoring within the Lam Tin area shall be conducted by the ET of Contract No. ED/2018/04 upon cessation of Agreement No. CE 59/2015 (EP). The data obtained from the impact monitoring works completed by the ET of Agreement No. CE 59/2015 (EP) will be adopted in this report
- 1.5 Cinotech Consultants Ltd. was designated as the Environmental Team (ET) to undertake the EM&A works for "Trunk Road T2 and Infrastructure Works for Developments at the Former South Apron" (hereinafter called the "Project").

#### **Purpose of the Report**

1.6 This is the 4<sup>th</sup> Quarterly EM&A Summary Report summarizing the EM&A works for the Project in between February 2021 and April 2021.

#### **Project Organizations**

- 1.7 Different parties with different levels of involvement in the project organization include:
  - Permit Holder Civil Engineering and Development Department (CEDD)
  - Supervisor Representative Hyder-Meinhardt Joint Venture (HMJV)
  - Environmental Team (ET) Cinotech Consultants Limited (Cinotech)
  - Independent Environmental Checker (IEC) Ramboll Hong Kong Limited (Ramboll)
  - Contractor Bouygues Travaux Publics (BTP)
- 1.8 The key contacts of the Project are shown in **Table 1.1**.

**Table 1.1 Key Project Contacts** 

1 11 11 11 11 1	1207 1 1 0 1 0 0 0 0 1 1 0 1 0 0 0 0 0 0 0	ojeet contacts			
Party	Role	Contact Person	Phone No.		
CEDD	Permit Holder	Mr. Wong Chi Wai, Tommy	3842 7111		
HMJV	Supervisor Representative	Mr. Joe Nam	3742 3820		
Cinotech	Environmental Team	Mr. KS Lee (ETL)	2151 2091		
Cinotech		Ms. Karina Chan	2157 3880		
Ramboll	Independent Environmental	Mr. YH Hui (from 12 April 2021)	3465 2850 3465 2888		
Kainboii	Checker	Mr. Manson Yeung (until 11 April 2021)			
BTP	Contractor	Mr. Bryan Lee	5588 3891		

1.9 The Organizational Structure for Environmental Management is shown in **Figure 1.2**.

#### Construction Activities undertaken during the Report Quarter

- 1.10 The major site activities undertaken in the reporting quarter are shown as follow: *February 2021* 
  - West Bound Drill & Break Tunnel
  - East Bound Drill & Blast Tunnel

#### March 2021

- West Bound Drill & Break Tunnel
- East Bound Drill & Blast Tunnel

#### *April* 2021

- West Bound Drill & Break Tunnel
- East Bound Drill & Blast Tunnel
- WB East Ventilation Building Excavation

#### 2. ENVIRONMENTAL MONITORING AND AUDIT REQUIREMENTS

#### **Monitoring Parameters and Monitoring Locations**

2.1 The EM&A Manual designates locations for environmental monitoring in terms of air quality, noise, and landfill gas due to the Project. The Project area and monitoring locations are depicted in **Figures 2**. **Appendix A** gives details of monitoring requirements.

#### **Monitoring Methodology and Calibration Details**

2.2 Monitoring works/equipment were conducted/calibrated regularly in accordance with the EM&A Manual. Copies of calibration certificates are attached in the appendices of the corresponding Monthly EM&A Reports.

#### **Environmental Quality Performance Limits (Action and Limit Levels)**

- 2.3 The environmental quality performance limits, i.e. Action and Limit Levels were derived from the baseline monitoring results. Should the measured environmental quality parameters exceed the Action/Limit Levels, the respective action plans would be implemented. The Action/Limit Levels for each environmental parameter are given in **Appendix B**.
- 2.4 Should the monitoring results of the environmental monitoring parameters at any designated monitoring stations indicate that the Action / Limit Levels are exceeded, the actions in accordance with the Event and Action Plans in **Appendix K** was carried out.

#### **Implementation Status of Environmental Mitigation Measures**

2.5 Relevant mitigation measures as recommended in the project EIA report have been stipulated in the EM&A Manual for implementation by the Contractor. The implementation status of environmental mitigation measures (EMIS) is given in **Appendix G**.

#### **Site Audit Summary**

2.6 During site inspections in the reporting period, no non-compliances was recorded. The observations and recommendations made during the reporting period are summarized in **Appendix F**.

#### **Status of Waste Management**

2.7 The amount of wastes generated by the construction activities during the reporting period is shown in **Appendix H**.

#### 3. MONITORING RESULTS

#### **Weather Conditions**

3.1 The weather during monitoring sessions was summarized in **Table 3.1**.

Table 3.1 Summary of Weather Conditions in the Reporting Period

Reporting Month	<b>General Weather Conditions</b>	
February 2021	Sunny, Cloudy	
March 2021	Sunny, Cloudy, Rainy	
April 2021	Sunny, Cloudy	

3.2 The detail of weather conditions for each individual monitoring session was presented in the corresponding monthly EM&A report.

#### **Air Quality**

- 3.3 All 1-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action/Limit Level exceedance was recorded.
- 3.4 The HVS at monitoring station AM2 was broken-down during the first week of February 2021 and the 24-hour TSP monitoring at such station was temporary suspended during the aforementioned period. Other than the aforesaid monitoring, all 24-hour TSP monitoring was conducted as scheduled in the reporting quarter. No Action / Limit Level exceedance was recorded.
- 3.5 The graphical presentations of the air quality monitoring results are shown in **Appendix** C.

#### **Construction Noise**

3.6 All noise monitoring was conducted as scheduled in the reporting month. No Action Level exceedance was recorded due to the documented complaints received in this reporting quarter. No Limit Level exceedance for day time was recorded in the reporting quarter. The graphical presentations of the noise monitoring results are shown in **Appendix D**.

#### **Water Quality**

Groundwater Quality

3.7 The existing groundwater quality monitoring programme has been suspended as the monitoring results had been deemed non-representative of the impact from the project justified by two major factors: (1) influence on the monitoring results from non-project related factors, such as anthropogenic activities and natural phenomenon; and (2) large separation between the monitoring stations and works area. In addition, as no alternative locations for the groundwater quality monitoring were available, the groundwater quality monitoring has been suspended since October 2019 upon the agreement by EPD

#### Marine Water Quality

3.8 According to Section 4.4.3 of EM&A Manual (AEIAR-173/2013), marine water quality impact monitoring stations is carried out during marine construction for TKOLTT reclamation. Since the construction of Cha Kwo Ling Tunnel from the end of Trunk Road T2 to the TKOLTT at the Eastern Ventilation Building does not involve reclamation, the marine water quality monitoring programme stated in Section 4.4 of the EM&A Manual (AEIAR-173/2013) is therefore not applicable to Contract No. ED/2018/04.

#### Groundwater Level Monitoring (Piezometer Monitoring)

3.9 According to Section 4.1.2 of EM&A Manual (AEIAR-173/2013), daily piezometer monitoring will be carried out on a daily basis when any tunnel construction activities are carried out within +/- 50m of the piezometer gate in plan. As the construction works of Cha Kwo Ling Tunnel from the end of Trunk Road T2 to the TKOLTT at the Eastern Ventilation Building is approximately 120m away from the piezometer gate in plan, the piezometer monitoring programme stated in Section 4.2 of the EM&A Manual (AEIAR-173/2013) is therefore not applicable to Contract No. ED/2018/04

#### **Ecological Monitoring**

3.10 Post-translocation monitoring survey is recommended in Section 6.2.5 of the EM&A Manual (AEIAR-173/2013), to audit the success of coral translocation. Since the construction of Cha Kwo Ling Tunnel from the end of Trunk Road T2 to the TKOLTT at the Eastern Ventilation Building does not involve any marine works in the concerned area mentioned in Section 6.1.2 of the EM&A Manual (AEIAR-173/2013), the post-translocation monitoring survey stated in Section 6.2.5 of the EM&A Manual (AEIAR-173/2013) is therefore not applicable to Contract No. ED/2018/04...

#### **Monitoring on Cultural Heritage**

3.11 As the construction works of Cha Kwo Ling Tunnel from the end of Trunk Road T2 to the TKOLTT at the Eastern Ventilation Building are located more than 100m away from the Cha Kwo Ling Tin Hau temple, the vibration impact monitoring stated in Section 8.3.1 of the EM&A Manual (AEIAR-173/2013) is not applicable to Contract No. ED/2018/04.

#### Landscape and Visual Monitoring and Audit

3.12 The implementation of landscape and visual mitigation measures was checked during the environmental site inspections. Recommended follow-up actions have been discharged by the Contractor. Details of the audit findings and implementation status are presented in **Appendix F**.

#### **Landfill Gas Monitoring**

3.13 Monitoring of landfill gases was commenced in March 2016 and were carried out by the Contractors of Agreement No. CE 59/2015 (EP) in the reporting quarter. No Limit Level exceedance was recorded. The graphical presentations of the landfill gas monitoring results are shown in **Appendix E**.

#### **Waste Management**

3.14 Site audits were carried out on a weekly basis to monitor and ensures that proper storage, transportation and disposal practices of wastes generated from this Project include inert construction and demolition (C&D) materials, non-inert C&D materials. Details of waste management data is presented in **Appendix H**.

#### **Fisheries**

3.15 According to Section 7.1.3 of EM&A Manual (AEIAR-173/2013), no specific fisheries monitoring programme is required during the construction phase.

#### **Influencing Factors on the Monitoring Results**

3.16 During the reporting period, the major dust and noise source identified at the designated monitoring stations are as follows:

Table 3.2 Major Dust Sources during the Monitoring in the Reporting Period

Station	Major Dust Source
AM1 – Tin Hau Temple	Road Traffic at Cha Kwo Ling Road
AM2 – Sai Tso Wan Recreation Ground	Road Traffic along Sin Fat Road
AM3 – Yau Lai Estate Bik Lai House	Road Traffic near Eastern Cross Harbour Tunnel Toll Plaza
AM4 - Sitting-out Area at Cha Kwo Ling Village	Road Traffic at Cha Kwo Ling Road
AM4(A) - Cha Kwo Ling Public Cargo Working Area Administrative Office	Road Traffic at Cha Kwo Ling Road

Table 3.3 Major Noise Sources during the Monitoring in the Reporting Period

Monitoring Stations	Locations	Major Noise Source
CM1	Nga Lai House, Yau Lai Estate Phase 1,	Road Traffic near Eastern Cross Harbour
	Yau Tong	Tunnel Toll Plaza
CM2	Bik Lai House, Yau Lai Estate Phase 1, Yau Tong	Road Traffic near Eastern Cross Harbour Tunnel Toll Plaza
CM3	Block S, Yau Lai Estate Phase 5, Yau Tong	Road Traffic near Eastern Cross Harbour Tunnel Toll Plaza
CM4	Tin Hau Temple, Cha Kwo Ling	Road Traffic at Cha Kwo Ling Road
CM5	CCC Kei Faat Primary School, Yau Tong	Road Traffic near Eastern Cross Harbour Tunnel Toll Plaza

# 4. NON-COMPLIANCE (EXCEEDANCES) OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMITS (ACTION AND LIMIT LEVELS)

#### **Summary of Exceedances**

4.1 Environmental monitoring works were performed in the reporting period and all monitoring results were checked and reviewed. A summary of exceedances is attached in **Appendix I**.

Air Quality

4.2 No Action/Limit Level exceedance was recorded in the reporting quarter.

Construction Noise

4.3 No Action Level exceedances was recorded due to the documented complaints received in the reporting quarter. No Limit Level exceedance was recorded for day time construction noise in the reporting quarter.

Landfill Gas

4.4 No Limit Level exceedance was recorded in the reporting quarter.

#### Review of the Reasons for and the Implications of Non-compliance

4.10 During site audits in the reporting quarter, no non-compliance was recorded. Recommendations made in each individual site audit session were attached in the **Appendix F**.

Landscape and Visual

4.11 No non-compliance of the landscape and visual impact was recorded in the reporting quarter.

#### **Summary of Environmental Complaints and Prosecutions**

- 4.12 One (1) environmental complaint on this Project was received in the reporting quarter.
- 4.13 No environmental warning, prosecution and notification of summons were received in the reporting quarter.

#### 5. COMMENTS, CONCLUSIONS AND RECOMMENDATIONS

## Review of Monitoring Methodology and the Practicality and Effectiveness of EM&A Programme

5.1 The EM&A methodology has been effective in monitoring the environmental impacts of the Project and the effectiveness of the mitigation measures. The data collected were useful in determining whether the Project had caused unacceptable impacts on the sensitive receivers. Analysis of all EM&A data collected throughout the baseline and the impact periods demonstrated the environmental acceptability of the Project

#### **Effectiveness of Mitigation Measures**

- 5.2 The mitigation measures recommended in the EIA report are considered effective in minimizing environmental impacts.
- 5.3 The Contractor has implemented the recommended mitigation measures except those mitigation measures not applicable at this stage.
- 5.4 Environmental monitoring works were performed in the reporting quarter and all monitoring results were checked and reviewed.
- 5.5 The summary record of non-compliance (exceedances) of Action/Limit Level for environmental monitoring in the reporting quarter has been presented in **Table I** above and in **Appendix I**.
- 5.6 One (1) environmental complaint was received in the reporting quarter. The details were attached in the **Appendix J.**
- No warning, notification of summon and environmental prosecution was received in the reporting quarter. The details were attached in the **Appendix J**.

#### Recommendations

5.8 Joint weekly site audits by the representatives of the Engineer, Contractor and the ET were conducted in the reporting quarter. The following recommendations was made to the Contractor for the coming reporting month:

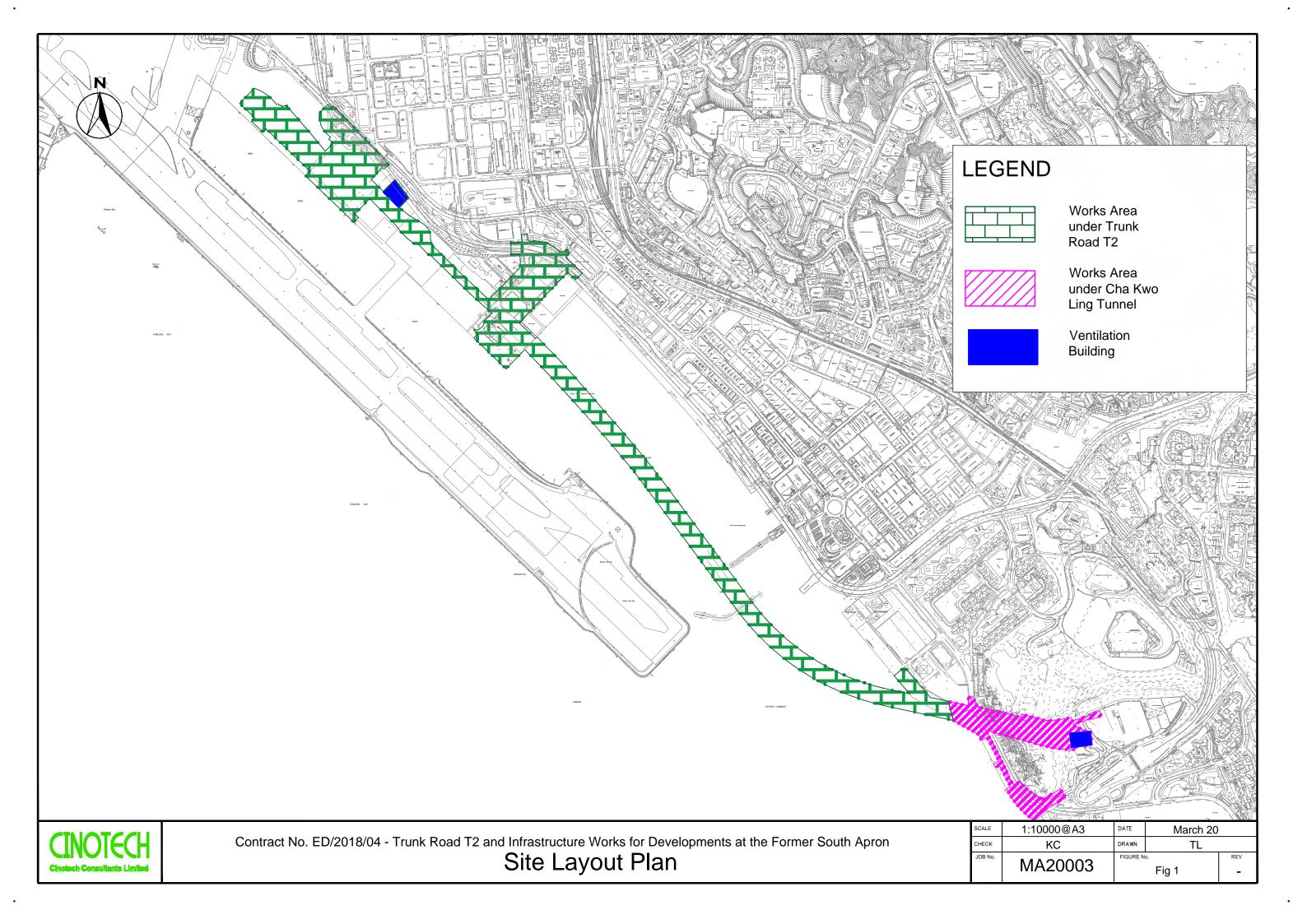
#### Construction Noise

• Noise mitigation measures, i.e. erecting noise barriers, shall always be implemented on site to minimize construction noise generated from construction activities.

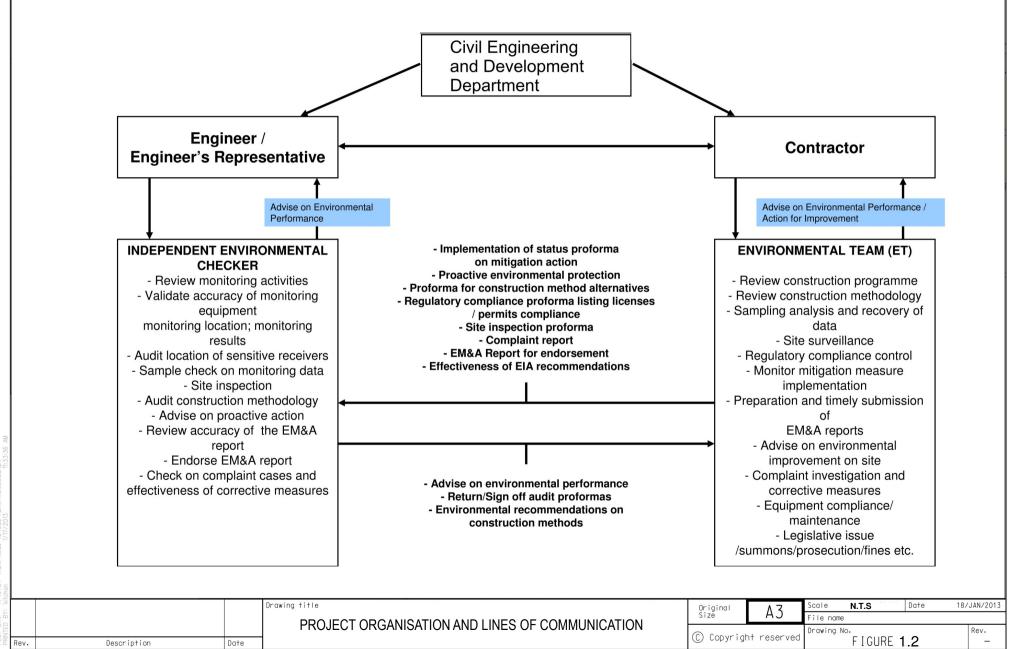
#### Waste/ Chemical Management

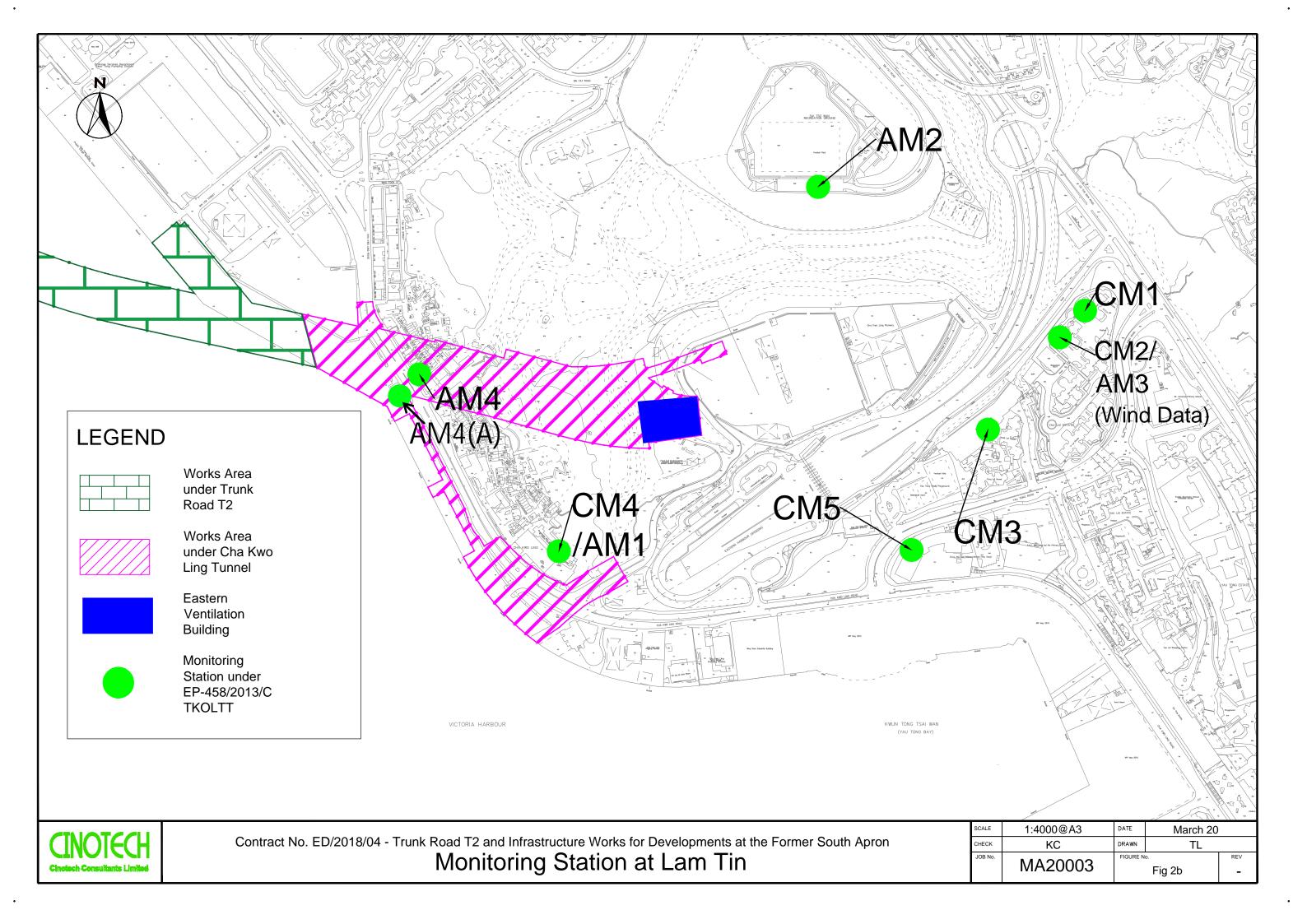
• A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material.

## **FIGURES**









## APPENDIX A MONITORING REQUIREMENTS

## **Appendix A - Environmental Impact Monitoring Requirements**

**Table I – Air Quality Monitoring** 

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions	
Air Quality	1 hour TSP	Three times / 6 days	<ul> <li>AM1 – Tin Hau Temple</li> <li>AM2 – Sai Tso Wan Recreation Ground</li> <li>AM3 – Yau Lai Estate Bik Lai House</li> <li>AM4<sup>(1)</sup> – Sitting-out Area at Cha Kwo Ling Village</li> <li>AM4(A)<sup>(2)(*)</sup> – Cha Kwo Ling Public Cargo Working Area Administrative Office</li> </ul>	6 days • AM2 – Sai Tso Wan Recreation Ground	<ul> <li>AM1 – Ground Level</li> <li>AM2 – Ground Level</li> <li>AM3 – Rooftop (41/F)</li> </ul>
	24 hour TSP	Once / 6 days		<ul> <li>AM4<sup>(1)</sup> – Ground Level</li> <li>AM4(A)<sup>(2)(*)</sup> – Rooftop (3/F)</li> </ul>	

Remarks: (1) For 1-hour TSP monitoring; (2) For 24-hour TSP monitoring

**Table II – Noise Monitoring** 

Type of Monitoring	Parameter	Frequency	Location	Measurement Conditions
Construction Noise	L <sub>eq</sub> , L <sub>90</sub> & L <sub>10</sub> at 30 minute intervals during 0700 to 1900 on normal weekdays	Once per week	<ul> <li>CM1 – Nga Lai House, Yau Lai Estate Phase 1, Yau Tong</li> <li>CM2 – Bik Lai House, Yau Lai Estate Phase 1, Yau Tong</li> <li>CM3 – Block S, Yau Lai Estate Phase 5, Yau Tong</li> <li>CM4 – Tin Hau Temple, Cha Kwo Ling</li> <li>CM5 – CCC Kei Faat Primary School, Yau Tong</li> </ul>	<ul> <li>CM1 – Rooftop (41/F)</li> <li>CM2 – Rooftop (41/F)</li> <li>CM3 – Rooftop (40/F)</li> <li>CM4 – Ground Level</li> <li>CM5 – Rooftop (6/F)</li> </ul>

<sup>(\*)</sup> Air quality monitoring at designated station AM4(24-hr TSP) was rejected by the premise owners. Therefore, baseline and impact air quality monitoring works were carried out at alternative air quality monitoring stations AM4(A) (24-hr TSP only).

Table III -Landfill Gas Monitoring

Type of Monitoring	Parameter	Frequency	Location
Landfill Gas	Methane, Carbon dioxide and Oxygen	at least daily before starting the work of the day	<ul> <li>Excavation Locations</li> <li>Manholes and Chambers</li> <li>Relocation of monitoring wells</li> <li>Any other Confined Spaces</li> </ul>

## APPENDIX B ACTION AND LIMIT LEVELS

### **APPENDIX B – Action and Limit Levels**

#### **Air Quality**

#### 1-hr TSP

Monitoring Stations	Location	Action Level, μg/m <sup>3</sup>	Limit Level, μg/m³
AM1	Tin Hau Temple	275	
AM2	Sai Tso Wan Recreation Ground	273	500
AM3	Yau Lai Estate Bik Lai House	271	500
AM4	Sitting-out Area at Cha Kwo Ling Village	278	

#### 24-hr TSP

Monitoring Stations	Location	Action Level, μg/m³	Limit Level, μg/m³
AM1	Tin Hau Temple	173	
AM2	Sai Tso Wan Recreation Ground	192	
AM3	Yau Lai Estate Bik Lai House	167	260
AM4(A)	Cha Kwo Ling Public Cargo Working Area Administrative Office	210	

#### **Noise**

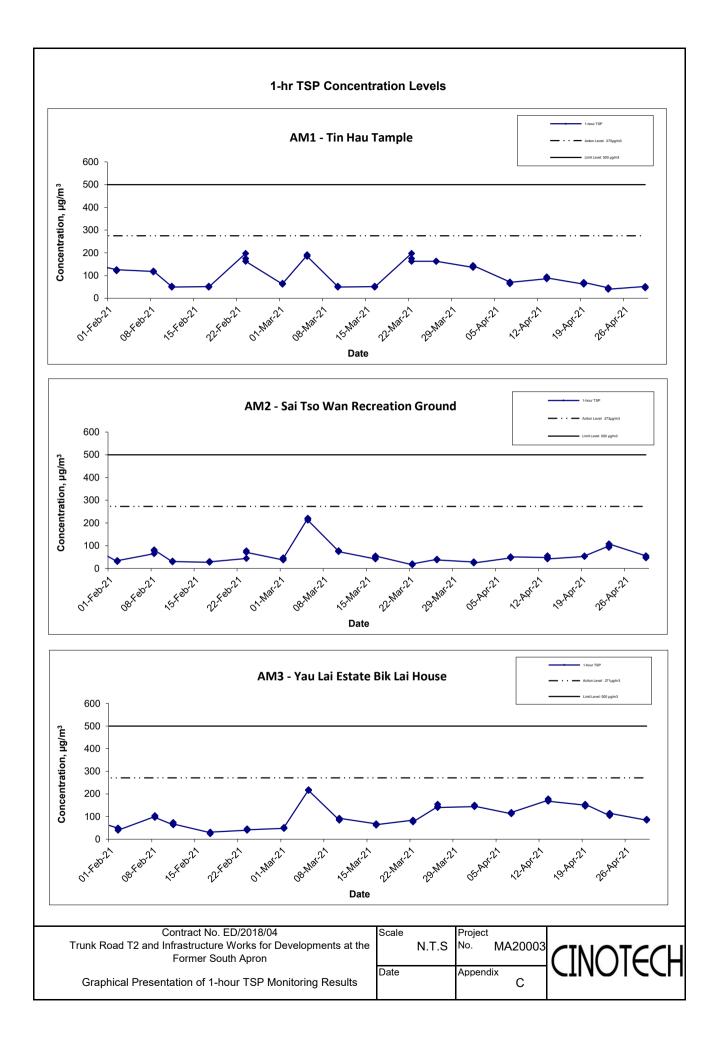
Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received from any one of the monitoring stations	75 dB(A) <sup>(1)</sup>

<sup>&</sup>lt;sup>1</sup> 70 dB(A) for schools and 65 dB(A) for schools during examination period.

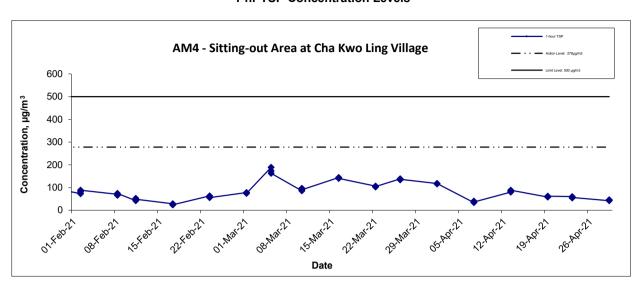
#### **Landfill Gas Monitoring**

Parameter	Limit Level
Oxygen	<19%
	<18%
Methane	>10% LEL (i.e. > 0.5% by volume)
	>20% LEL (i.e. > 1% by volume)
Carbon	>0.5%
Dioxide	>1.5%

APPENDIX C GRAPHICAL PRESENTATION OF AIR QUALITY MONITORING RESULTS



#### 1-hr TSP Concentration Levels



#### Notes:

- 1. The major activitie(s) being carried out on site during the reporting period is/are presented in Section 1.10
- 2. The weather conditions during the reporting month are presented in Section 3.1.
- 3. Other factors which might affect the monitoring results are presented in Section 3.16.

Contract No. ED/2018/04

Trunk Road T2 and Infrastructure Works for Developments at the Former South Apron

Graphical Presentation of 1-hour TSP Monitoring Results

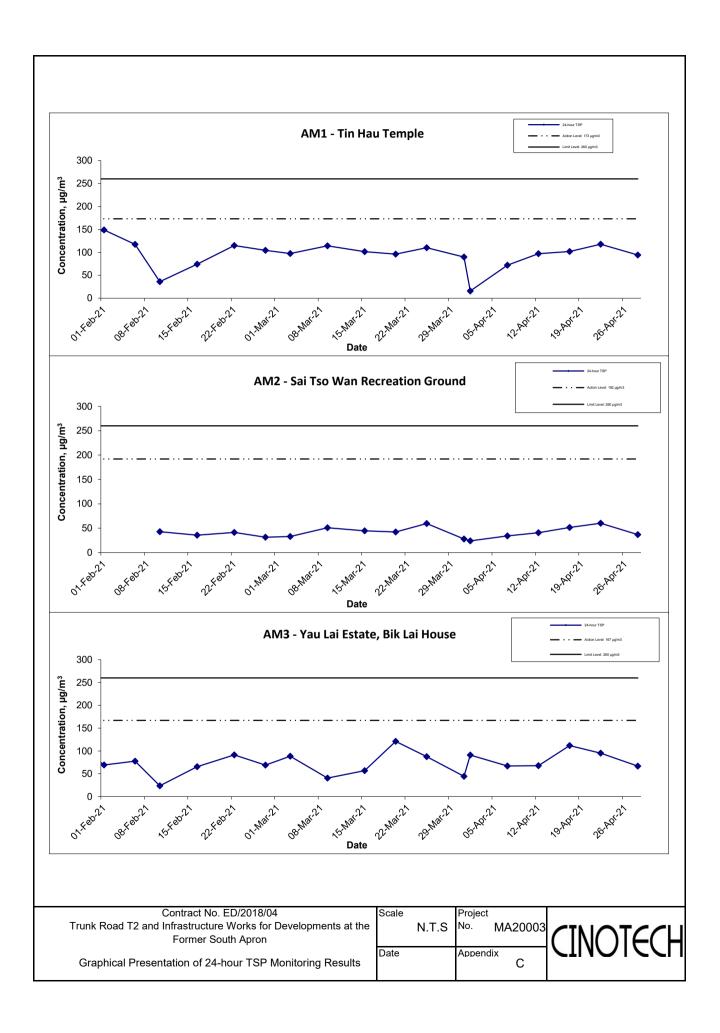
Scale

N.T.S

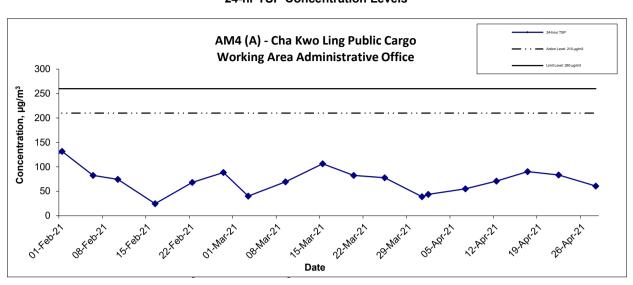
No. MA20003

Appendix

C



#### 24-hr TSP Concentration Levels



#### Notes:

- 1) The major activitie(s) being carried out on site during the reporting period is/are presented in Section 1.10
- 2) The weather conditions during the reporting month are presented in Section 3.1.
- 3) Other factors which might affect the monitoring results are presented in Section 3.16.
- 4) The HVS at AM2 was broken-down during the first week of Feburary 2021.

Contract No. ED/2018/04
Trunk Road T2 and Infrastructure Works for Developments at the
Former South Apron

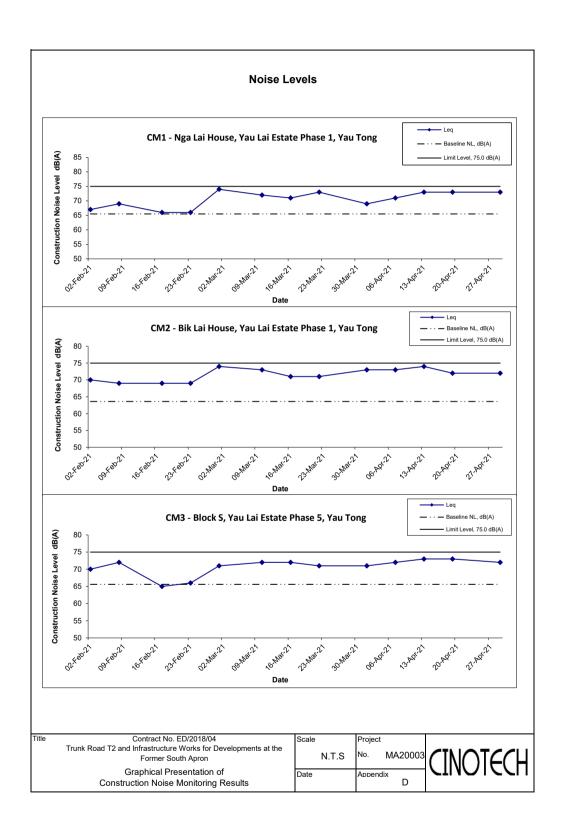
Graphical Presentation of 24-hour TSP Monitoring Results

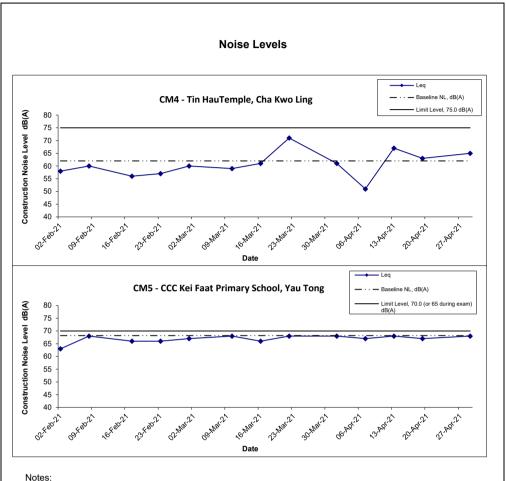
Scale Project No. MA20003

Date Appendix C



APPENDIX D GRAPHICAL PRESENTATION OF NOISE MONITORING RESULTS





- The major activitie(s) being carried out on site during the reporting period is/are presented in Section 1.10
   The weather conditions during the reporting month are presented in Section 3.1.
   Other factors which might affect the monitoring results are presented in Section 3.16.

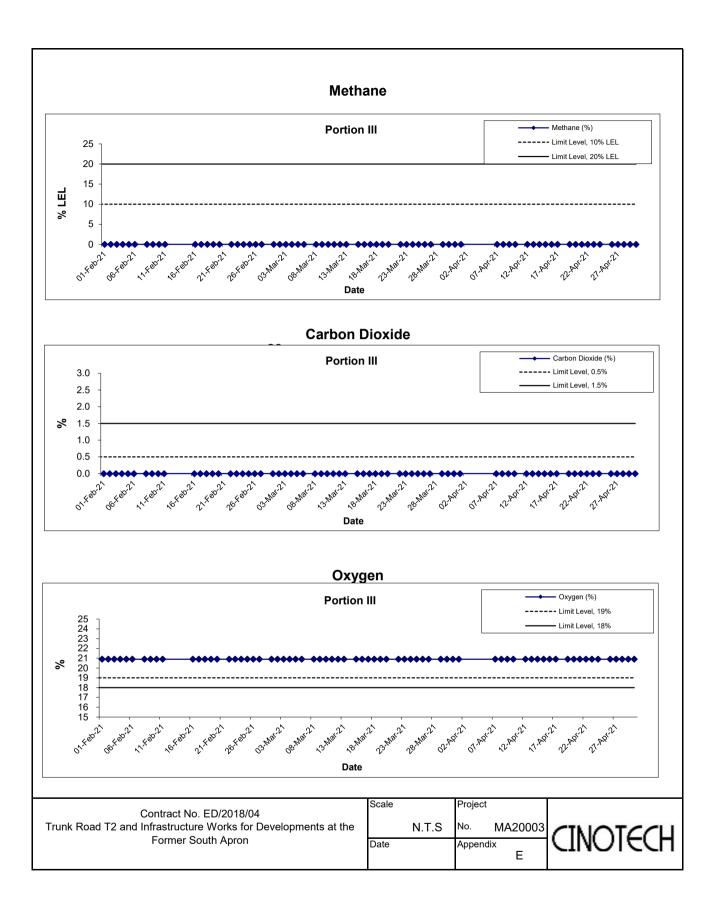
Contract No. ED/2018/04 Trunk Road T2 and Infrastructure Works for Developments at the Former South Apron

Graphical Presentation of Construction Noise Monitoring Results

Scale Project No. MA20003 N.T.S Date Appendix



APPENDIX E GRAPHICAL PRESENTATION OF LANDFILL GAS MONITORING RESULTS



### APPENDIX F SITE AUDIT SUMMARY

#### Contract No. ED/2018/04 Trunk Road T2 and Infrastructure Works for Developments at the Former South Apron Quarterly EM&A Report

#### **Appendix F - Site Audit Summary**

#### February 2021

Items	Date	Status*	Follow up Action					
Water Quality								
Ecology								
Noise								
Landscape and Visual								
Air Quality								
Waste / Chemical Management								
Impact on Cultural Heritage								
Permits / Licenses								

- ✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit
- Solution/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit # Follow up action will be reported in next reporting month
- \* Non-compliance of mitigation measure
- Non-compliance but improved by the contractor

MA20003/App F CINOTECH

#### Contract No. ED/2018/04 Trunk Road T2 and Infrastructure Works for Developments at the Former South Apron Quarterly EM&A Report

#### **Appendix F - Site Audit Summary**

#### **March 2021**

Items	Date	Status*	Follow up Action					
Water Quality								
Noise								
Landscape and Visual								
Air Quality								
Waste / Chemical Management								
The skip with accumulation of general refuse was observed	25 March 2021	~	Item was rectified on 16 April 2021					
Impact on Cultural Heritage								
Permits / Licenses	Permits / Licenses							

<sup>✓</sup> Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit

MA20003/App F CINOTECH

<sup>\*</sup> Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit

<sup>#</sup> Follow up action will be reported in next reporting month

<sup>\*</sup> Non-compliance of mitigation measure

<sup>•</sup> Non-compliance but rectified by the contractor

#### Contract No. ED/2018/04 Trunk Road T2 and Infrastructure Works for Developments at the Former South Apron Quarterly EM&A Report

### Appendix F - Site Audit Summary

#### **April 2021**

Items	Date	Status*	Follow up Action
Water Quality			
Noise			
Landscape and Visual			
Air Quality			
Waste / Chemical Management			
Accumulation of general refuse should be avoided.	01 April 2021	<b>V</b>	Item was rectified on 16 April 2021
Accumulation of general refuse was observed continuously.	08 April 2021	~	Item was rectified on 16 April 2021
Contractor shall avoid accumulation of general refuse.	16 April 2021	<b>V</b>	Item was rectified on 22 April 2021
Accumulation of general refuse was observed	22 April 2021	<b>V</b>	Item was rectified on 29 April 2021
Impact on Cultural Heritage			
Permits / Licenses	<u> </u>		

- ✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit
- \* Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit
- # Follow up action will be reported in next reporting month
- \* Non-compliance of mitigation measure
- Non-compliance but rectified by the contractor

MA20003/App F CINOTECH

APPENDIX G ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)

## App G - ENVIRONMENTAL MITIGATION IMPLEMENTATION SCHEDULE (EMIS)

#### Table I - Recommended Mitigation Measures stipulated in EM&A Manual for the Project

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
Air Quality						
S3.8.1	Watering eight times a day on active works areas, exposed areas and paved haul roads	To minimize the dust impact	Contractor	All Active Work Sites	Construction phase	APCO
S3.8.1	Enclosing the unloading process at barging point by a 3-sided screen with top tipping hall / mixing area in Work Area A, provision of water spraying and flexible dust curtains	To minimize the dust impact	Contractor	Barging Points	Construction phase	APCO
S3.8.7	Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.  • Use of frequent watering for particularly dusty construction areas and areas close to ASRs  • Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines.  • Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs.  • Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations.  • Establishment and use of vehicle wheel and body washing facilities at the exit points of the site.  • Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading area of barging point, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods.  • Provision of not less than 2.4m high hoarding from ground level along site boundary where adjoins a road, streets or other accessible to the public except for a site entrance or exit.  • Imposition of speed controls for vehicles on site haul roads.  • Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs  • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides.  • Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.	To minimize the dust impact	Contractor	All Construction Work Sites	Construction phase	APCO and Air Pollution Control (Construction Dust) Regulation
/	Emission from Vehicles and Plants  • All vehicles shall be shut down in intermittent use.  • Only well-maintained plant should be operated on-site and plant should be serviced regularly to avoid emission of black smoke.  • All diesel fuelled construction plant within the works areas shall be powered by ultra low sulphur diesel fuel (ULSD)	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	APCO

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
/	Valid No-road Mobile Machinery (NRMM) labels should be provided to regulated machines	Reduce air pollution emission from construction vehicles and plants	Contractor	All construction sites	Construction stage	APCO
Noise Impact (Const	ruction Phase)					
S4.8	<ul> <li>Use of quiet PME. Use of movable noise barriers for Excavator, Lorry, Dump Truck, Mobile Crane, Compactor, Concrete Mixer Truck, Concrete Lorry Mixer, Breaker, Mobile Crusher, Backhoe, Vibratory Poker, Saw, Asphalt Paver, Vibratory Roller, Vibrolance, Hydraulic Vibratory Lance and Piling (Vibration Hammer). Use of full enclosure for Air Compressor, Compressor, Bar Bender, Generator, Drilling Rig, Chisel, Large Diameter Bore Piling, Grout Mixer &amp; Pump and Concrete Pump.</li> </ul>	To minimize construction noise impact arising from the Project at the affected NSRs	Contractor	Work Sites	Construction phase	EIAO-TM, NCO
Noise Mitigation Plan	Use of Temporary Noise Barriers (i.e Acoustic box, SilentUp and etc.) or Full Enclosure for PME according to the approved Noise Mitigation Plan	To minimize construction noise impact arising from the Project at the affected NSRs	Contractor	Work Sites	Construction phase	EIAO-TM, NCO
S4.9	Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program.  Mobile plant, if any, should be sited as far away from NSRs as possible. Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum. Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs. Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.	To minimize construction noise impact arising from the Project at the affected NSRs	Project Proponent	Work sites	Construction Period	EIAO-TM, NCO
S4.9	Scheduling of Construction Works during School Examination Period	To minimize construction noise impact arising from the Project at the affected NSRs	Contractor	Work site near school	Construction phase	EIAO-TM, NCO
Water Quality Impa	ct (Construction Phase)					
S5.6.24	The dry density of filling material for the TKO-LT Tunnel reclamation should be 1,900kg/m³, with fine content of 25% or less	Control potential impacts from filling activities	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO
S5.8.1	Non-dredged method by constructing steel cellular caisson structure with stone column shall be adopted for construction of seawall foundation. During the stone column installation (also including the installation of steel cellular caisson), silt curtain shall be employed around the active stone column installation points.	Control potential impacts from filling activities	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO
S5.8.2	Formation of seawall enclosing the reclamation for Road P2 (notwithstanding an opening of about 50m for marine access) shall be completed prior to the filling activities. The seawall opening of about 50m wide for marine access shall be selected at a location as indicatively shown in Appendix 5.10. No more than 3 filling barge trips per day shall be made with a maximum daily rate of 3,000m <sup>3</sup> (i.e. 1,000 m <sup>3</sup> per trip) for the filling operation at the reclamation area for Road P2. All filling works shall be carried out behind the seawall with the use of single silt curtain at the marine access.	Control potential impacts from filling activities	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO
Silt Curtain Deployment Plan	<ul> <li>Silt curtains should be deployed properly to surround the works area.</li> <li>Maintenance of silt curtain should be provided.</li> <li>Sufficient stock of silt curtain should be provided on site.</li> </ul>	Control potential impacts from marine woroks	Contractor	NE/2015/01	Construction stage	EIAO
	Other good site practices should be undertaken during filling operations include:  • all marine works should adopt the environmental friendly construction methods as far as practically possible including the use of cofferdams to cover the construction area to separate the construction works from the sea;  • floating single silt curtain shall be employed for all marine works;  • all vessels should be sized so that adequate clearance is maintained between vessels and the seabed in all tide conditions, to ensure that undue turbidity is not generated by turbulence from vessel movement or propeller wash;					

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
S5.8.3	<ul> <li>all hopper barges should be fitted with tight fitting seals to their bottom openings to prevent leakage of material;</li> <li>excess material shall be cleaned from the decks and exposed fittings of barges before the vessel is moved;</li> <li>adequate freeboard shall be maintained on barges to reduce the likelihood of decks being washed by wave action;</li> <li>loading of barges and hoppers should be controlled to prevent splashing of filling material into the surrounding water. Barges or hoppers should not be filled to a level that will</li> </ul>	Control potential impacts from filling activities and marine-based construction	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, Waste Disposal Ordinance (WDO)
	cause the overflow of materials or polluted water during loading or transportation;  any pipe leakages shall be repaired quickly. Plant should not be operated with leaking pipes;  construction activities should not cause foam, oil, grease, scum, litter or other objectionable matter to be present on the water within the site or dumping grounds; and before commencement of the reclamation works, the holder of Environmental Permit has to submit plans showing the phased construction of the reclamation, design and operation of the silt curtain.					
S5.8.4	Site specific mitigation plan for reclamation areas using public fill materials should be submitted for EPD agreement before commencement of construction phase with due consideration of good site practices.	Control potential impacts from filling activities and marine based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
ERR S5.6.1	To minimize water quality impact arising from the dredging and filling works for Reclamation for Road P2, the following mitigation measures shall be implemented:  - Before carrying out any dredging and underwater filling works, a temporary barrier shall first be constructed to a height above the high water mark to completely enclose the works site (without any opening at the barrier wall)  - The temporary barrier fully enclosing the dredging and underwater filling works site shall not be removed before completion of all dredging and underwater filling works.  - Water quality sampling and testing shall be carried out to demonstrate that the water quality inside the enclosed barrier is comparable to the ambient or baseline levels prior to the removal of the fully enclosed barrier.  - Silt curtains shall be deployed for the installation and removal of the temporary barrier and at the double water gates marine access opening during its operation.	Control potential impacts from dredging and filling works for Reclamation for Road P2	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.5	It is important that appropriate measures are implemented to control runoff and drainage and prevent high loading of SS from entering the marine environment. Proper site management is essential to minimise surface water runoff, soil erosion and sewage effluents.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.6	Any practical options for the diversion and realignment of drainage should comply with both engineering and environmental requirements in order to ensure adequate hydraulic capacity of all drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Design Stage and Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO, TM- DSS
S5.8.7	Construction site runoff and drainage should be prevented or minimised in accordance with the guidelines stipulated in the EPD's Practice Note for Professional Persons, Construction Site Drainage (ProPECC PN 1/94). Good housekeeping and stormwater best management practices, as detailed in below, should be implemented to ensure that all construction runoff complies with WPCO standards and no unacceptable impact on the WSRs arises due to construction of the TKO-LT Tunnel. All discharges from the construction site should be controlled to comply with the standards for effluents discharged into the corresponding WCZ under the TM-DSS.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO, TM- DSS
S5.8.8 S5.8.8	Exposed soil areas should be minimised to reduce the potential for increased siltation, contamination of runoff, and erosion. Construction runoff related impacts associated with the above ground construction activities can be readily controlled through the use of appropriate mitigation measures which include:  • use of sediment traps; and	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.8	adequate maintenance of drainage systems to prevent flooding and overflow.					
S5.8.9	Construction site should be provided with adequately designed perimeter channel and pretreatment facilities and proper maintenance. The boundaries of critical areas of earthworks should be marked and surrounded by dykes or embankments for flood protection. Temporary ditches should be provided to facilitate runoff discharge into the appropriate watercourses, via a silt retention pond. Permanent drainage channels should incorporate sediment basins or traps and baffles to enhance deposition rates. The design of efficient silt removal facilities should be based on the guidelines in Appendix Al of ProPECC PN 1/94.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
\$5.8.10	Ideally, construction works should be programmed to minimise surface excavation works during the rainy season (April to September). All exposed earth areas should be completed as soon as possible after earthworks have been completed, or alternatively, within 14 days of the cessation of earthworks where practicable. If excavation of soil cannot be avoided during the rainy season, or at any time of year when rainstorms are likely, exposed slope surfaces should be covered by tarpaulin or other means.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.11	Sedimentation tanks of sufficient capacity, constructed from pre-formed individual cells of approximately 6 to 8m <sup>3</sup> capacity, are recommended as a general mitigation measure which can be used for settling surface runoff prior to disposal. The system capacity is flexible and able to handle multiple inputs from a variety of sources and particularly suited to applications where the influent is pumped.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.12	Earthworks final surfaces should be well compacted and the subsequent permanent work or surface protection should be carried out immediately after the final surfaces are formed to prevent erosion caused by rainstorms. Appropriate drainage like intercepting channels should be provided where necessary.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.13	Measures should be taken to minimize the ingress of rainwater into trenches. If excavation of trenches in wet seasons is necessary, they should be dug and backfilled in short sections. Rainwater pumped out from trenches or foundation excavations should be discharged into storm drains via silt removal facilities.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.14	Open stockpiles of construction materials (for examples, aggregates, sand and fill material) of more than 50m <sup>3</sup> should be covered with tarpaulin or similar fabric during rainstorms. Measures should be taken to prevent the washing away of construction materials, soil, silt or debris into any drainage system.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.15	Manholes (including newly constructed ones) should always be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and storm runoff being directed into foul sewers. Discharge of surface run-off into foul sewers must always be prevented in order not to unduly overload the foul sewerage system.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.16	Precautions to be taken at any time of year when rainstorms are likely, actions to be taken when a rainstorm is imminent or forecast, and actions to be taken during or after rainstorms are summarised in Appendix A2 of ProPECC PN 1/94. Particular attention should be paid to the control of silty surface runoff during storm events, especially for areas located near steep slopes.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.17	Oil interceptors should be provided in the drainage system and regularly cleaned to prevent the release of oils and grease into the storm water drainage system after accidental spillages. The interceptor should have a bypass to prevent flushing during periods of heavy rain.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.18	All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. An adequately designed and located wheel washing bay should be provided at every site exit, and washwater should have sand and silt settled out and removed at least on a weekly basis to ensure the continued efficiency of the process. The section of access road leading to, and exiting from, the wheelwash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.19	Silt removal facilities, channels and manholes should be maintained and the deposited silt and grit should be removed regularly, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.20	It is recommended that on-site drainage system should be installed prior to the commencement of other construction activities. Sediment traps should be installed in order to minimise the sediment loading of the effluent prior to discharge into foul sewers. There shall be no direct discharge of effluent from the site into the sea.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
\$5.8.21	All temporary and permanent drainage pipes and culverts provided to facilitate runoff discharge should be adequately designed for the controlled release of storm flows. All sediment control measures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly following rain storms. The temporarily diverted drainage should be reinstated to its original condition when the construction work has finished or the temporary diversion is no longer required.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
S5.8.22	All fuel tanks and storage areas should be provided with locks and be located on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank, to prevent spilled fuel oils from reaching the coastal waters.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.23	Minimum distances of 100m shall be maintained between the existing or planned stormwater discharges and the existing or planned seawater intakes during construction and operational phases	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, TMDSS
S5.8.24	Under normal circumstances, groundwater pumped out of wells, etc. for the lowering of ground water level in basement or foundation construction, and groundwater seepage pumped out of tunnels or caverns under construction should be discharged into storm drains after the removal of silt in silt removal facilities.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.25 - S5.8.27 & Table 5.18	Grouting would be adopted as measure to reduce the groundwater inflow into the tunnel. During the tunnel excavation, the inflow rate of groundwater into the tunnel will be measured during the excavation. The groundwater levels above the tunnel will also be monitored by piezometers. If the inflow rate exceeds the pre-determined groundwater control criteria or the groundwater drawdown exceeds the required limit, pre-excavation grouting will be required to reduce the groundwater inflow. No significant change of groundwater levels would therefore be expected. Any chemicals/ foaming agents which would be entrained to the groundwater should be biodegradable and non-toxic throughout the tunnel construction. Potential groundwater quality impact would be minimal as the used material is non-toxic and biodegradable. No adverse groundwater quality would therefore be expected. Prescriptive measures in the form of an Action Plan with pre-emptive and re-active to preserve the groundwater levels at all times during the tunnel construction are set out in Table 5.18.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO, Buildings Ordinance
S5.8.28	Water used in ground boring and drilling for site investigation or rock / soil anchoring should as far as practicable be recirculated after sedimentation. When there is a need for final disposal, the wastewater should be discharged into storm drains via silt removal facilities.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Design Stage and Construction Phas	ProPECC PN 1/94, EIAOTM, WPCO
	Wastewater generated from the washing down of mixing trucks and drum mixers and similar equipment should whenever practicable be recycled. The discharge of wastewater should be kept to a minimum. To prevent pollution from wastewater overflow, the pump sump of any water recycling system should be provided with an online standby pump of adequate capacity and with automatic alternating devices. Under normal circumstances, surplus wastewater may be discharged into foul sewers after treatment in silt removal and pH adjustment facilities (to within the pH range of 6 to 10). Disposal of wastewater into storm drains will require more elaborate treatment.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.32	All vehicles and plant should be cleaned before they leave a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. A wheel washing bay should be provided at every site exit if practicable and wash-water should have sand and silt settled out or removed before discharging into storm drains. The section of construction road between the wheel washing bay and the public road should be paved with backfall to reduce vehicle tracking of soil and to prevent site runoff from entering public road drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.33	Bentonite slurries used in diaphragm wall and borepile construction should be reconditioned and reused wherever practicable. If the disposal of a certain residual quantity cannot be avoided, the used slurry may be disposed of at the marine spoil grounds subject to obtaining a marine dumping licence from EPD on a case-by-case basis.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.34	If the used bentonite slurry is intended to be disposed of through the public drainage system, it should be treated to the respective effluent standards applicable to foul sewer, storm drains or the receiving waters as set out in the WPCO Technical Memorandum on Effluent Standards.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.35	Water used in water testing to check leakage of structures and pipes should be reused for other purposes as far as practicable. Surplus unpolluted water could be discharged into storm drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.36	Sterilization is commonly accomplished by chlorination. Specific advice from EPD should be sought during the design stage of the works with regard to the disposal of the sterilizing water. The sterilizing water should be reused wherever practicable.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Design Stage and Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.37	Before commencing any demolition works, all sewer and drainage connections should be sealed to prevent building debris, soil, sand etc. from entering public sewers/drains.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
\$5.8.38	Wastewater generated from building construction activities including concreting, plastering, internal decoration, cleaning of works and similar activities should not be discharged into the stormwater drainage system. If the wastewater is to be discharged into foul sewers, it should undergo the removal of settleable solids in a silt removal facility, and pH adjustment as necessary	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
\$5.8.39	Acidic wastewater generated from acid cleaning, etching, pickling and similar activities should be neutralized to within the pH range of 6 to 10 before discharging into foul sewers. If there is no public foul sewer in the vicinity, the neutralized wastewater should be tinkered off site for disposal into foul sewers or treated to a standard acceptable to storm drains and the receiving waters	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.40	Wastewater collected from canteen kitchens, including that from basins, sinks and floor drains, should be discharged into foul sewer via grease traps capable of providing at least 20 minutes retention during peak flow.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.41	Drainage serving an open oil filling point should be connected to storm drains via a petrol interceptor with peak storm bypass.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.42	Vehicle and plant servicing areas, vehicle wash bays and lubrication bays should as far as possible be located within roofed areas. The drainage in these covered areas should be connected to foul sewers via a petrol interceptor. Oil leakage or spillage should be contained and cleaned up immediately. Waste oil should be collected and stored for recycling or disposal in accordance with the Waste Disposal Ordinance.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.43	Construction work force sewage discharges on site are expected to be connected to the existing trunk sewer or sewage treatment facilities. The construction sewage may need to be handled by portable chemical toilets prior to the commission of the on-site sewer system. Appropriate numbers of portable toilets shall be provided by a licensed contractor to serve the large number of construction workers over the construction site. The Contractor shall also be responsible for waste disposal and maintenance practices.	Control potential impacts from construction site runoff and land-based construction	CEDD's Contractors	Work site	Construction Phase	ProPECC PN 1/94, EIAOTM, WPCO
S5.8.44	Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	Control potential impacts from accidental spillage of chemicals	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, WDO
S5.8.45	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and sumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	Control potential impacts from accidental spillage of chemicals	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO
S5.8.46	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The "Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes" published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows:  • suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport;  • chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents; and  • storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.	Control potential impacts from accidental spillage of chemicals	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO, WDO
S5.8.47	Collection and removal of floating refuse should be performed at regular intervals on a daily basis.  The contractor should be responsible for keeping the water within the site boundary and the neighbouring water free from rubbish.	Control potential impacts from floating refuse and debris	CEDD's Contractors	Work site	Construction Phase	EIAO-TM, WPCO,
Ecological Impact						
S6.8.4	Measures to Minimize Disturbance     Use of Quiet Mechanical Plant during the construction phase should be adopted wherever possible.     Hoarding or fencing should be erected around the works area boundaries during the construction phase. The hoarding would screen adjacent habitats from construction phase activities, reduce noise disturbance to these habitats and also to restrict access to habitats adjacent to works areas by site workers;     Regular spraying of haul roads to minimize impacts of dust deposition on adjacent vegetation and habitats during the construction activities	Minimize noise, human and traffic disturbance to terrestrial habitat and wildlife; and reduce dust generation	Design Team / Contractor	Land-based works are	Construction Phase	N/A
	Standard Good Site Practice     Placement of equipment or stockpile in designated works areas and access routes selected on existing disturbed land to minimise disturbance to natural habitats.					

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
S6.8.5	<ul> <li>Construction activities should be restricted to works areas that should be clearly demarcated. The works areas should be reinstated after completion of the works.</li> <li>Waste skips should be provided to collect general refuse and construction wastes. The wastes should be properly disposed off-site in a timely manner.</li> <li>General drainage arrangements should include sediment and oil traps to collect and control construction site run-off.</li> </ul>	Reduce disturbance to surrounding habitats	Contractor	Land-based works are	Construction Phase	N/A
	<ul> <li>Open burning on works sites is illegal, and should be strictly prohibited.</li> <li>Measures should also be put into place so that litter, fuel and solvents do not enter the nearby watercourses.</li> </ul>					
S6.8.6	Measure to Minimize Groundwater Inflow  The drained tunnel construction method with groundwater inflow control measures would generally be adopted.  During the tunnel excavation, pre-excavation grouting could be adopted to reduce the groundwater inflow and ensure that the tunnel would meet the long term water tightness requirements.	Minimize groundwater inflow	Contractor	Tunnel	Construction Phase	N/A
\$6.8.8	Measure to Minimize Impact on Corals  Coral translocation  It is recommended to translocate the affected coral colonies, except the locally common Oulastrea crispata, within the reclamation area and bridge footprint to the other suitable locations as far as practicable.  The coral translocation should be conducted during the winter months (November-March) in order to avoid disturbance during their spawning period (i.e. July to October).  A detailed coral translocation plan with a description on the methodology for pretranslocation coral survey, translocation methodology, identification/proposal of coral recipient site, monitoring methodology for posttranslocation should be prepared during the detailed design stage.  The coral translocation plan should be subject to approval by relevant authorities (e.g. EPD and AFCD) before commencement of the coral translocation. All the translocation exercises should be conducted by experienced marine ecologist(s) who is/are approved by AFCD prior to commencement of coral translocation.  Post translocation Monitoring  A coral monitoring programme is recommended to assess any adverse and unacceptable impacts to the translocated coral communities  Information gathered during each posttranslocation monitoring survey should include observations on the presence, survival, health condition and growth of the translocated coral colonies. These parameters should then be compared with the baseline results collected from the pre-translocation survey.	Minimize loss of coral	Design team, contractor, project operator	Within reclamation areas and pier footprint	Prior construction	N/A
S6.8.9 S6.8.10	Deployment of silt curtains around the active stone column installation points, opening of newly installed seawall and marine works area.     Diverting of the site runoff to silt trap facilities before discharging into storm drain;     Proper waste and dumping management; and     Standard good-site practice for land-based construction.	Control water quality impact, especially on suspended solid level; minimize the contamination of wastewater discharge, accidental chemical spillage and construction site runoff to the receiving water bodies	Design Team, contractor	Marine and landbased works area	Construction phase	WQO
S6.8.11	Compensation for Vegetation Loss  • Felling of mature trees should be compensated by planting of standard or heavy standard trees within or in vicinity of the affected area as far as practicable. Such compensatory planting for trees should be provided with at least a 1:1 ratio. In addition, vegetation at the temporarily affected area should be reinstated with species similar to the existing condition.	Compensate for the vegetation loss	Design Team, contractor	Land-based works area	Construction phase	N/A
Fisheries Impact						

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?			
S7.7.3	Measure to Control Water Quality Impact  Deployment of silt curtains around the active stone column installation points, opening of newly installed seawall and marine works area.	Control water quality impact, especially on suspended solid level	Design Team / Contractor	Marine work area	Construction phase	WQO			
Waste Management	Construction Phase)								
	Good Site Practices and Waste Reduction Measures  Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site;  Training of site personnel in site cleanliness, proper waste management and chemical					Waste Disposal Ordinance (Cap. 354)			
S8.6.3	Provision of sufficient waste disposal points and regular collection of waste;     Provision of sufficient waste disposal points and regular collection of waste;     Appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; and     Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors.	To reduce waste management impacts	Contractor	Contractor All work sites C	Construction Phase	Land (Miscellaneous Provisions) Ordinance (Cap. 28)			
S8.6.4	Good Site Practices and Waste Reduction Measures (con't)  Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal;  Encourage collection of aluminium cans by providing separate labelled bins to enable this	1.41		To achieve waste reduction	To achieve waste reduction	Contractor	All work sites	Construction Phase	Waste Disposal Ordinance (Cap. 354)
	waste to be segregated from other general refuse generated by the workforce;  Proper storage and site practices to minimize the potential for damage or contamination of construction materials; and  Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste.					Land (Miscellaneous Provisions) Ordinance (Cap. 28)			
	Good Site Practices and Waste Reduction Measures (con't)  The Contractor shall prepare and implement a WMP as part of the EMP in accordance with ETWB TCW No. 19/2005 which describes the arrangements for avoidance, reuse, recovery, recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities. Such a management plan should incorporate site specific factors, such as the designation of areas for segregation and temporary storage of reusable and recyclable materials. The EMP should be submitted to the Engineer for approval. The Contractor should implement the waste management practices in the EMP throughout the construction stage of the Project. The EMP should be reviewed regularly and updated by the Contractor.	To achieve waste reduction	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005			
S8.6.6	Good Site Practices and Waste Reduction Measures (con't)  C&D materials would be reused in the project and other local concurrent projects as far as possible.	To achieve waste reduction	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005			
\$8.6.7	Storage, Collection and Transportation of Waste Should any temporary storage or stockpiling of waste is required, recommendations to minimize the impacts include:  • Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimizing the potential of pollution;  • Maintain and clean storage areas routinely;  • Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and  • Different locations should be designated to stockpile each material to enhance reuse.	To minimize potential adverse environmental impacts arising from waste storage	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005			
	Storage, Collection and Transportation of Waste (con't)								

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
S8.6.8/ Waste Management Plan	Remove waste in timely manner;  Waste collectors should only collect wastes prescribed by their permits;  Impacts during transportation, such as dust and odour, should be mitigated by the use of covered trucks or in enclosed containers;  Obtain relevant waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354), Waste Disposal (Charges for Disposal of Construction Waste) Regulation (Cap. 345) and the Land (Miscellaneous Provisions) Ordinance (Cap. 28);  Waste should be disposed of at licensed waste disposal facilities/alternative disposal ground approved by RE and DEP; and  Maintain records of quantities of waste generated, recycled and disposed.	To minimize potential adverse environmental impacts arising from waste collection and disposal	Contractor	All work sites	Construction Phase	ETWB TCW No. 19/2005
S8.6.9/ Waste Management Plan	Storage, Collection and Transportation of Waste (con't)  Implementation of trip ticket system with reference to DEVB TC(W) No. 6/2010, Trip Ticket System for Disposal of Construction & Demolition Materials, to monitor disposal of waste and to control fly-tipping at PFRFs or landfills. A recording system for the amount of waste generated, recycled and disposed (including disposal sites) should be proposed.	To minimize potential adverse environmental impacts arising from waste collection and disposal	Contractor	All work sites	Construction Phase	DEVB TCW No. 6/2010
S8.6.11 - S8.6.13/ Waste Management Plan	Sorting of C&D Materials  Sorting to be performed to recover the inert materials, reusable and recyclable materials before disposal off-site.  Specific areas shall be provided by the Contractors for sorting and to provide temporary storage areas for the sorted materials.  The C&D materials should at least be segregated into inert and non-inert materials, in which the inert portion could be reused and recycled in the reclamation as far as practicable before delivery to PFRFs. While opportunities for reusing the non-inert portion should be investigated before disposal of at designated landfills	To minimize potential adverse environmental	Contractor	All work sites	Construction Phase	DEVB TCW No. 6/2010  ETWB TCW No. 33/2002  ETWB TCW No. 19/2005
\$8.6.17 – \$8.6.20	Sediments (con't)  Requirements of the Air Pollution Control (Construction Dust) Regulation, where relevant, shall be adhered to during boring, excavation, transportation and disposal of sediments or cement stabilization of sediment.  A treatment area should be confined for carrying out the cement stabilization mixing and temporary stockpile. The area should be designed to prevent leachate from entering the ground. Leachate, if any, should be collected and discharged according to the Water Pollution Control Ordinance (WPCO).  In order to minimise the potential odour / dust emissions during boring, excavation and transportation of the sediment, the excavated sediments should be kept wet during excavation/boring and should be properly covered when placed on barges/trucks. Loading of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water.  In order to minimise the exposure to contaminated materials, workers should, when necessary, wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities should also be provided on site.	To determine the best handling and treatment of sediment	Contractor	All works areas with sediments concern	Construction Phase	ETWB TCW No. 19/2005
	Sediments (con't)  • The excavated sediments is expected to be loaded onto the barge and transported to the designated disposal sites allocated by the MFC. The excaveted sediment would be disposed of according to its determined disposal options and ETWB TC(W) No. 34/2002.					

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
S8.6.24 - S8.6.28/ Waste Management Plan	<ul> <li>Stockpiling of contaminated sediments should be avoided as far as possible. If temporary stockpiling of contaminated sediments is necessary, the excavated sediment should be covered by tarpaulin and the area should be placed within earth bunds or sand bags to prevent leachate from entering the ground, nearby drains and surrounding water bodies. The stockpiling areas should be completely paved or covered by linings in order to avoid contamination to underlying soil or groundwater. Separate and clearly defined areas should be provided for stockpiling of contaminated and uncontaminated materials. Leachate, if any, should be collected and discharged according to the Water Pollution Control Ordinance (WPCO).</li> <li>In order to minimise the potential odour / dust emissions during boring and transportation of the sediment, the excavated sediments should be kept wet during excavation/boring and should be properly covered when placed on barges. Loading of the excavated sediment to the barge should be controlled to avoid splashing and overflowing of the sediment slurry to the surrounding water.</li> <li>The barge transporting the sediments to the designated disposal sites should be equipped with tight fitting seals to prevent leakage and should not be filled to a level that would cause overflow of materials or laden water during loading or transportation. In addition, monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the DEP.</li> <li>In order to minimise the exposure to contaminated materials, workers should, when necessary, wear appropriate personal protective equipments (PPE) when handling contaminated sediments. Adequate washing and cleaning facilities should also be provided on site.</li> <li>Another possible arrangement for Type 3 disposal is by geosynthetic containment. A geosynthetic containment method is a m</li></ul>	To ensure handling of sediments are in accordance to statutory requirements	Contractor	All works areas with sediments concern	Construction Phase	ETWB TC(W) No. 34/2002 & Dumping at Sea Ordinance
S8.6.26/ Waste Management Plan S8.6.27/ Waste Management Plan	• If chemical wastes are produced at the construction site, the Contractor would be required to register with the EPD as a Chemical Waste Producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the Chemical Waste Treatment Centre at Tsing Yi, or other licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.  General Refuse  • General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general	To ensure proper management of chemical waste  To ensure proper management of general refuse	Contractor	All works sites	Construction Phase  Construction Phase	Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes Waste Disposal (Chemical Waste) (General) Regulation  Public Health and Municipal Services Ordinance (Cap. 132)
Lungst on Culture I I	refuse from the site, separately from C&D material. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.					
Impact on Cultural H	eritage (Construction Phase)					

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
\$9.6.4	<ul> <li>Temporarily fenced off buffer zone with allowance for public access (minimum 1 m) should be provided;</li> <li>The open yard in front of the temple should be kept as usual for annual Tin Hau festival;</li> <li>Monitoring of vibration impacts should be conducted when the construction works are less than 100m from the temple.</li> </ul>	To prevent dust and visual impacts	Contractors	Work areas	Construction Phase	EIAO; GCHIA; AMO
S9.6.4	Indirect vibration impact  Vibration level is suggest to be controlled within a peak particle velocity (ppv) limit of 5mm/s measured inside the historical buildings;  Monitoring of vibration should be carried out during construction phase.  Tilting and settlement monitoring should will be applied on the Cha Kwo Ling Tin Hau Temple as well.  A proposal with details for the mitigation measures and monitoring of impacts on built heritage shall be submitted to AMO for comments before commencement of work.	To prevent indirect vibration impact	Contractors	Work areas	Construction Phase	Vibration Limits on Heritage Buildings by CEDD; GCHIA; AMO.
Built Heritage Mitigation Plan	<ul> <li>Established Alert, Alarm and Action Level for the monitoring parameters.</li> <li>To increase the instrumentation monitoring and reporting frequency.</li> <li>To propose detailed action plan or contingency plan for the Engineer's approval when AAA Level is reached or exceeded.</li> </ul>	To prevent vibration impacts	NE/2015/01	Tin Hau Temple	Construction Phase	Vibration Limits on Heritage Buildings by CEDD; GCHIA; AMO.
Landscape and Visua	ll Impact (Construction Phase)					
Table 10.8.1/ Landscape Mitigation Plan	CM1 - Construction area and contractor's temporary works areas to be minimised to avoid impacts on adjacent landscape.	Avoid impact on adjacent landscape areas	CEDD (via Contractor)	General	Construction planning and during construction period	N/A
Table 10.8.1/ Landscape Mitigation Plan	CM2 - Reduction of construction period to practical minimum.	Minimise duration of impact	CEDD (via Contractor)	N/A	Construction planning	N/A
Table 10.8.1/ Landscape Mitigation Plan	CM3 - Topsoil, where the soil material meets acceptable criteria and where practical, to be stripped and stored for re-use in the construction of the soft landscape works. The Contract Specification shall include storage and reuse of topsoil as appropriate.	To allow re-use of topsoil	CEDD (via Contractor)	General	Site clearance	As per the Particular Specification
Table 10.8.1/ Landscape Mitigation Plan	CM4 - Existing trees at boundary of site and retained trees within site boundary to be carefully protected during construction. Detailed Tree Protection Specification shall be provided in the Contract Specification, under which the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor's works areas. (Tree protection measures will be detailed at Tree Removal Application stage).	To minimize tree loss	CEDD (via Contractor)	As per approved Tree Removal Application(s)	Site clearance and throughout construction period	ETWB TC 3/2006 and as per tree protection measures in Particular Specification
Table 10.8.1/ Landscape Mitigation Plan	CM5 - Trees unavoidably affected by the works shall be transplanted where practicable. Where possible, trees should be transplanted direct to permanent locations rather than temporary holding nurseries. A detailed tree transplanting specification shall be provided in the Contract Specification and sufficient time for preparation shall be allowed in the construction programme.	To maximize preservation of existing trees	CEDD (via Contractor)	As per approved Tree Removal Application(s)	Site clearance	ETWB TC 3/2006 and as per tree protection measures in Particular Specification
Table 10.8.1/ Landscape Mitigation Plan	CM6 - Advance screen planting of fast growing tree and shrub species to noise barriers and hoardings. Trees shall be capable of reaching a height >10m within 10 years.	To maximize screening of the works	CEDD (via Contractor)	At Lam Tin Interchange and edge of Road P2 landscape deck, TKO	Beginning of construction period	N/A
Table 10.8.1/ Landscape Mitigation Plan	CM7 - Hydroseeding or sheeting of soil stockpiles with visually unobtrusive material	To reduce visual intrusion	CEDD (via Contractor)	General	Throughout construction period	As per Particular Specification
Table 10.8.1/ Landscape Mitigation Plan	CM8 - Control of night-time lighting by hooding all lights and through minimisation of night working periods.	To reduce visual intrusion	CEDD (via Contractor)	General	Throughout construction period	N/A
Table 10.8.1/ Landscape Mitigation Plan	CM9 - Screening of works areas with hoardings with appropriate colours compatible with the surrounding area	Reduction of visual intrusion	CEDD (via Contractor)	Project site Boundary	Excretion of site hoarding	N/A
Table 10.8.1/ Landscape Mitigation Plan	CM10 - Avoidance of excessive height and bulk of site buildings and structure	Reduction of visual intrusion and integration with environment	CEDD (via Contractor)	Built structures	Design and construction stage	N/A
Table 10.8.1/ Landscape Mitigation Plan	CM11 - Limitation of run-off into freshwater streams, ponds and sea areas	Avoidance of contamination of water courses and water bodie	CEDD (via Contractor)	TKO reclamation, TKO tunnel portal, Cha Kwo Ling roadworks	Throughout construction period	N/A

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
Table 10.8.1	CM12 - Minimise area of reclamation and design the edges sensitively to tie in with adjacent coastline characte	Minimise loss of Junk Bay and integration with existing coastlin	CEDD (via Contractor)	Temporary reclamation for barging points at TKO and Lam Tin and permanent reclamation for TKO Interchange slip roads and Road P2	Construction planning and reclamation stages	N/A
Landfill Gas Hazard	(Design and Construction Phase)					
S11.5.9	A Safety Officer, trained in the use of gas detection equipment and landfill gas-related hazards, should be present on site throughout the groundworks phase. The Safety Officer should be provided with an intrinsically safe portable instrument, which is appropriately calibrated and able to measure the following gases in the ranges indicated below:  Methane 0-100% LEL and 0100% v/v  Carbon dioxide 0-100%  Oxygen 0-21%	Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note
	Safety Measures					
	<ul> <li>For staff who work in, or have responsibility for "at risk" area, such as all excavation workers, supervisors and engineers working within the Consultation Zone, should receive appropriate training on working in areas susceptible to landfill gas, fire and explosion hazards.</li> <li>An excavation procedure or code of practice to minimize landfill gas related risk should be devised and carried out.</li> <li>No worker should be allowed to work alone at any time in or near to any excavation. At least one other worker should be available to assist with a rescue if needed.</li> <li>Smoking, naked flames and all other sources of ignition should be prohibited within 15m of any excavation or ground-level confined space. "No smoking" and "No naked flame" notices should be posted prominently on the construction site and, if necessary, special areas should be designed for smoking.</li> <li>Welding, flame-cutting or other hot works should be confined to open areas at least 15m from any trench or excavation.</li> <li>Welding, flame-cutting or other hot works may only be carried out in trenches or confined spaces when controlled by a "permit to work" procedure, properly authorized by the Safety Officer (or, in the case of small developments, other appropriately qualified person).</li> </ul>					
\$11.5.10 \$11.5.25	<ul> <li>The permit to work procedure should set down clearly the requirements for continuous monitoring for methane, carbon dioxide and oxygen throughout the period during which the hot works are in progress. The procedure should also require the presence of an appropriately qualified person, in attendance outside the 'confined area', who should be responsible for reviewing the gas measurements as they are made, and who should have executive responsibility for suspending the work in the event of unacceptable or hazardous conditions. Only those workers who are appropriately trained and fully aware of the potentially hazardous conditions which may arise should be permitted to carry out hot works in confined areas.</li> <li>Where there are any temporary site offices, or any other buildings located within the Sai Tso Wan Landfill Consultation Zone which have enclosed spaces with the capacity to accumulate landfill gas, then they should either be located in an area which has been proven to be free of landfill gas (by survey using portable gas detectors); or be raised clear of the ground by a minimum of 500mm. This aims to create a clear void under the structure which is ventilated by natural air movement such that emission of gas from the ground are mixed and diluted by air.</li> <li>Any electrical equipment, such as motors and extension cords, should be intrinsically safe. During piping assembly or conduiting construction, all valves/seals should be closed immediately after installation. As construction progresses, all valves/seals should be closed immediately after installation. As construction progresses, all valves/seals should be closed to prevent the migration of gases through the pipeline/conduit. All piping /conduiting should be capped at the end of each working day.</li> </ul>	Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note Labour Department's Code of Practice for Safety and Health at Work in Confined Space

EIA Ref. / EP Submission	Recommended Mitigation Measures	Objectives of the recommended Measures & Main Concerns to address	Who to implement the measures?	Location of the measures	When to Implement the measures?	What requirements or standards for the measures to achieve?
	<ul> <li>During construction, adequate fire extinguishing equipment, fire-resistant clothing and breathing apparatus (BA) sets should be made available on site.</li> <li>Fire drills should be organized at not less than six monthly intervals.</li> <li>The contractor should formulate a health and safety policy, standards and instructions for site personnel to follow.</li> <li>All personnel who work on the site and all visitors to the site should be made aware of the possibility of ignition of gas in the vicinity of excavations. Safety notices (in Chinese and English) should be posted at prominent position around the site warning danger of the potential hazards.</li> <li>Service runs within the Consultation Zone should be designated as "special routes"; utilities companies should be informed of this and precautionary measures should be implemented. Precautionary measures should include ensuring that staff members are aware of the potential hazards of working in confined spaces such as manholes and service chambers, and that appropriate monitoring procedures are in place to prevent hazards due to asphyxiating atmospheres in confined spaces. Detailed guidance on entry into confined spaces is given in Code of Practice on Safety and Health at Work in Confined Spaces (Labour Department, Hong Kong).</li> <li>Periodically during ground-works construction within the 250m Consultation Zone, the works area should be monitored for methane, carbon dioxide and oxygen using appropriately calibrated portable gas detection equipment. The monitoring frequency and areas to be monitored should be set down prior to commencement of ground-works either by the Safety Officer or an approved and appropriately qualified person.</li> </ul>					
S11.5.26 - S11.5.31	Monitoring  ● Routine monitoring should be carried out in all excavations, manholes, chambers, relocation of monitoring wells and any other confined spaces that may have been created. All measurements in excavations should be made with the extended monitoring tube located not more than 10 mm from the exposed ground surface. Monitoring should be performed properly to make sure that the area is free of landfill gas before any man enters into the area.  ● For excavations deeper than 1m, measurements should be carried out:  • at the ground surface before excavation commences;- • immediately before any worker enters the excavation; • at the beginning of each working day for the entire period the excavation remains open; and • periodically throughout the working day whilst workers are in the excavation.  ● For excavations between 300mm and 1m deep, measurements should be carried out: • directly after the excavation has been completed; and • periodically whilst the excavation remains open.  ● For excavations less than 300mm deep, monitoring may be omitted, at the discretion of the Safety Officer or other appropriately qualified person.  ● Depending on the results of the measurements, actions required will vary and should be set down by the Safety Officer or other appropriately qualified person.  ● The exact frequency of monitoring should be determined prior to the commencement of works, but should be at least once per day, and be carried out by a suitably qualified or qualified person before starting the work of the day. Measurements shall be recorded and kept as a record of safe working conditions with copies of the site diary and submitted to the Engineer for approval. The Contractor may elect to carry out monitoring via an automated monitoring system.	Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note
S11.5.32	The hazards from landfill gas during the construction stage within the Sai Tso Wan Landfill Consultation Zone should be minimized by suitable precautionary measures recommended in Chapter 8 of the Landfill Gas Hazard Assessment Guidance Note.	construction stage within the Sai Tso Wan Protect the workers from landfill gas hazards	Contractor	Project sites within the Sai Tso Wan Landfill Consultation Zone	Construction phase	EPD's Landfill Gas Hazard Assessment Guidance Note

### Table II - Observation / Reminder / Non-compliance made during Site Audit (February 2021)

Key:

- ✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit
- X Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit
- # Follow up action will be reported in next reporting month
- \* Non-compliance of mitigation measure
- · Non-compliance but improved by the contractor

EIA Ref	Recommended Mitigation Measures	Details of Reminder/Observation	Recorded Date	Status
Air Quality				
Construction 1	Noise Impact			
Water Quality	Impact			
Ecological Imp	pact			
Fisheries Impa	act			
Waste Manag	ement			
Landscape an	d Visual Impact			
<b>Landfill Gas I</b>	<b>Jazards</b>			

### Table II - Observation / Reminder / Non-compliance made during Site Audit (March 2021)

Key: ✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit

X Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit

# Follow up action will be reported in next reporting month

\* Non-compliance of mitigation measure

· Non-compliance but improved by the contractor

EIA Ref	Recommended Mitigation Measures	Details of Reminder/Observation	Recorded Date	Status
Air Quality				
Construction	Noise Impact			
Water Quality	y Impact			
<b>Ecological Im</b>	pact			
Fisheries Imp	act			
	<b></b>			
Waste Manag	ement			
S8.6.27	General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	The skip with accumulation of general refuse was observed.	25 Mar 2021	#
Landscape an	d Visual Impact			
Landfill Gas 1	Hazards			

#### Table II - Observation / Reminder / Non-compliance made during Site Audit (April 2021)

Key: 

✓ Observation/reminder was made during site audit but improved/rectified by the contractor in the next site audit

X Observation/reminder was made during site audit but not yet improved/rectified by the contractor in the next site audit

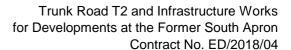
# Follow up action will be reported in next reporting month

\* Non-compliance of mitigation measure

· Non-compliance but improved by the contractor

EIA Ref	Recommended Mitigation Measures	Details of Reminder/Observation	Recorded Date	Status
Air Quality				
Construction 1	Noise Impact			
	<u></u>			
Water Quality	/ Impact			T
 1 • 17				ļ
Ecological Imp	pact T			T
 D'l				
Fisheries Impa	act T	Г		
Waste Manage	ement			1
		The skip with accumulation of general refuse was observed.	25 Mar 2021	<b>√</b>
	General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	Accumulation of general refuse should be avoided.	1 Apr 2021	<b>√</b>
S8.6.27		Accumulation of general refuse was observed continuously. The contractor is reminded to dispose the refuse regularly and avoid accumulation.	8 Apr 2021	<b>√</b>
		Contractor shall avoid accumulation of general refuse.	16 Apr 2021	✓
		Accumulation of general refuse was observed.	22 Apr 2021	<b>✓</b>
Landscape and	d Visual Impact	-		•
-				
Landfill Gas H	Hazards	·		

## APPENDIX H WASTE GENERATED QUANTITY





Name of Department: CEDD

Monthly Summary Waste Flow Table for 2021 (CKL)

	Actua	al Quantities	of Inert C&D	Materials G	enerated Mo	nthly	Actual C	Quantities of	C&D Wastes	s Generated	Monthly
Month	a.Total Quantity Generated (a=c+d+e)	b. Hard Rock and Large Broken Concrete	c. Reused in the Contract	d. Reused in Other Projects	e. Disposed as Public Fill	f. Imported Fill	g. Metals	h. Paper / Cardboard Packaging	i. Plastics	j. Chemical Waste	k. Others, e.g. general refuse
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )
January	4.858	4.842	0.000	4.842	0.016	0.000	0.000	0.000	0.000	0.200	0.005
February	5.450	5.428	0.000	5.428	0.022	0.000	0.000	0.000	0.000	0.000	0.008
March	5.710	5.679	0.000	5.679	0.031	0.000	0.000	0.000	0.000	0.000	0.007
April	7.349	7.339	0.000	7.339	0.010	0.000	0.000	0.000	0.000	0.000	0.006
May											
June											
Sub-total	23.368	23.288	0.000	23.288	0.079	0.000	0.000	0.000	0.000	0.200	0.026
July											
August											
September											
October											
November											
December											
Total	23.368	23.288	0.000	23.288	0.079	0.000	0.000	0.000	0.000	0.200	0.026

Monthly Summary Waste Flow Table

#### Notes:

- (1) The performance targets are given in ER Appendix 8I Clause 14 and the EM&A Manual(s).
- (2) The waste flow table shall also include C&D materials to be imported for use at the Site.
- (3)Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
- (4)The Contractor shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000 m3. (ER Part 8 Clause 8.8.5 (d) (ii) refers).

#### APPENDIX I SUMMARY OF EXCEEDANCES

#### Contract No. ED/2018/04

## Trunk Road T2 and Infrastructure Works for Developments at the Former South Apron

## Appendix I – Summary of Exceedance

Reporting Quarter: February 2021 - April 2021

#### (A) Exceedance Report for Air Quality

(NIL in the reporting quarter)

#### (B) Exceedance Report for Construction Noise

(NIL in the reporting quarter)

#### (C) Exceedance Report for Landfill Gas

(NIL in the reporting quarter)

APPENDIX J SUMMARIES OF ENVIRONMENTAL COMPLAINT, WARNING, SUMMON AND NOTIFICATION OF SUCCESSFUL PROSECUTION

## Contract No. ED/2018/04

# Trunk Road T2 and Infrastructure Works for Developments at the Former South Apron

## $\label{eq:linear_sum} \boldsymbol{Appendix} \ \boldsymbol{J-Summary} \ of \ environmental \ complaint, \ warning, \ summon \ and \ notification \ of \ successful \ prosecution$

Reporting Quarter: February 2021 - April 2021

Log Ref.	Location	Received Date	Details of Complaint/warning/summon and prosecution	Investigation/Mitigation Action	Status
Complaint		9-Feb-2021	Resident of Cha Kwo Ling village revealed that some breaking noise was heard at his/her residence (near Cha kwo Ling Main Street) from the ground at about 20:00 on 08 Feb, 2021	<ul> <li>The construction activities of Trunk Road T2 conducted inside the tunnel area and the construction activities of TKO-LT Tunnel conducted inside the tunnel section at Kwun Tong Side on the evening time and night-time of the date of complaint are considered as one of the potential noise source of the ground borne noise nuisance.</li> <li>A valid CNP was hold and the investigation is still undertaken in order to investigate the construction activities being taken were complied with the relevant CNP.</li> <li>Blast door was fully enclosed when construction activities were carried out within tunnel area to provent reduce.</li> </ul>	
#N04	Portion T1	6 March 2021	The complainant informed that they continues to hear breaking noise during 3-4 a.m. and caused serious noise nuisance to the residents.	tunnel area to prevent, reduce or minimize the emission of airborne noise  In addition, the Contractor should still maintain good site practices, such as schedule noisy work to the less sensitive hours and provide regularly maintenance for PMEs.  Contractor is recommended to continue to strictly follow the requirements in the relevant CNP.  According to the condition 3.d point 5 of the CNP (GW-RE0071-21), the immediate remedial action shall be implemented in case adverse ground-borne noise impact on any noise sensitive receiver is received.	Closed

**Remarks**: No environmental warning/summon and prosecution were received in the reporting quarter.

#### APPENDIX K EVENT AND ACTION PLAN

### **Event and Action Plan for Air Quality (Dust)**

EXTENTE		ACTION								
EVENT	ET	IEC	ER	CONTRACTOR						
Action level being exceeded by one sampling	<ol> <li>Identify source, investigate the causes of complaint and propose remedial measures;</li> <li>Inform IEC and ER;</li> <li>Repeat measurement to confirm finding;</li> <li>Increase monitoring frequency to daily.</li> </ol>	<ol> <li>Check monitoring data submitted by ET;</li> <li>Check Contractor's working method.</li> </ol>	1. Notify Contractor.	<ol> <li>Rectify any unacceptable practice;</li> <li>Amend working methods if appropriate.</li> </ol>						
Action level being exceeded by two or more consecutive sampling	<ol> <li>Identify source;</li> <li>Inform IEC and ER;</li> <li>Advise the ER on the         effectiveness of the proposed         remedial measures;</li> <li>Repeat measurements to confirm         findings;</li> <li>Increase monitoring frequency to         daily;</li> <li>Discuss with IEC and Contractor         on remedial actions required;</li> </ol>	<ol> <li>Check monitoring data submitted by ET;</li> <li>Check Contractor's working method;</li> <li>Discuss with ET and Contractor on possible remedial measures;</li> <li>Advise the ET on the effectiveness of the proposed remedial measures;</li> <li>Supervise Implementation of remedial measures.</li> </ol>	<ol> <li>Confirm receipt of notification of exceedance in writing;</li> <li>Notify Contractor;</li> <li>Ensure remedial measures properly implemented.</li> </ol>	<ol> <li>Submit proposals for remedial actions to IEC within three working days of notification;</li> <li>Implement the agreed proposals;</li> <li>Amend proposal if appropriate.</li> </ol>						

EVENT		ACT	TION	
EVENI	ET	IEC	ER	CONTRACTOR
Limit level being exceeded by one sampling	<ol> <li>If exceedance continues, arrange meeting with IEC and ER;</li> <li>If exceedance stops, cease additional monitoring.</li> <li>Identify source, investigate the causes of exceedance and propose remedial measures;</li> <li>Inform Contractor ,IEC, ER, and EPD;</li> <li>Repeat measurement to confirm finding;</li> <li>Increase monitoring frequency to daily;</li> <li>Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results.</li> </ol>	<ol> <li>Check monitoring data submitted by ET;</li> <li>Check Contractor's working method;</li> <li>Discuss with ET and Contractor on possible remedial measures;</li> <li>Advise the ER on the effectiveness of the proposed remedial measures;</li> <li>Supervise implementation of remedial measures.</li> </ol>	<ol> <li>Confirm receipt of notification of exceedance in writing;</li> <li>Notify Contractor;</li> <li>Ensure remedial measures properly implemented.</li> </ol>	<ol> <li>Take immediate action to avoid further exceedance;</li> <li>Submit proposals for remedial actions to IEC within three working days of notification;</li> <li>Implement the agreed proposals;</li> <li>Amend proposal if appropriate.</li> </ol>
Limit level being exceeded by two	Notify IEC, ER, Contractor and EPD;	Discuss amongst ER, ET, and     Contractor on the potential	Confirm receipt of notification of exceedance in writing;	Take immediate action to avoid further exceedance;
or more consecutive sampling	2. Identify source;	remedial actions;  2. Review Contractor's remedial actions whenever necessary to	<ul><li>2. Notify Contractor;</li><li>3. In consolidation with the IEC, agree with the Contractor on the</li></ul>	Submit proposals for remedial actions to IEC within three working days of notification;

EN IEDA III				ACT	ION			
EVENT	ET		IEC		ER		CONTRACTOR	
	3.	Repeat measurement to confirm		assure their effectiveness and		remedial measures to be	3.	Implement the agreed proposals;
		findings;		advise the ER accordingly;		implemented;	4.	Resubmit proposals if problem still
	4.	Increase monitoring frequency to	3.	Supervise the implementation of	4.	Ensure remedial measures		not under control;
		daily;		remedial measures.		properly implemented;	5.	Stop the relevant portion of works
	5.	Carry out analysis of Contractor's			5.	If exceedance continues, consider		as determined by the ER until the
		working procedures to determine				what portion of the work is		exceedance is abated.
		possible mitigation to be				responsible and instruct the		
		implemented;				Contractor to stop that portion of		
	6.	Arrange meeting with IEC and				work until the exceedance is		
		ER to discuss the remedial actions				abated.		
		to be taken;						
	7.	Assess effectiveness of						
		Contractor's remedial actions and						
		keep IEC, EPD and ER informed						
		of the results;						
	8.	If exceedance stops, cease						
		additional monitoring.						

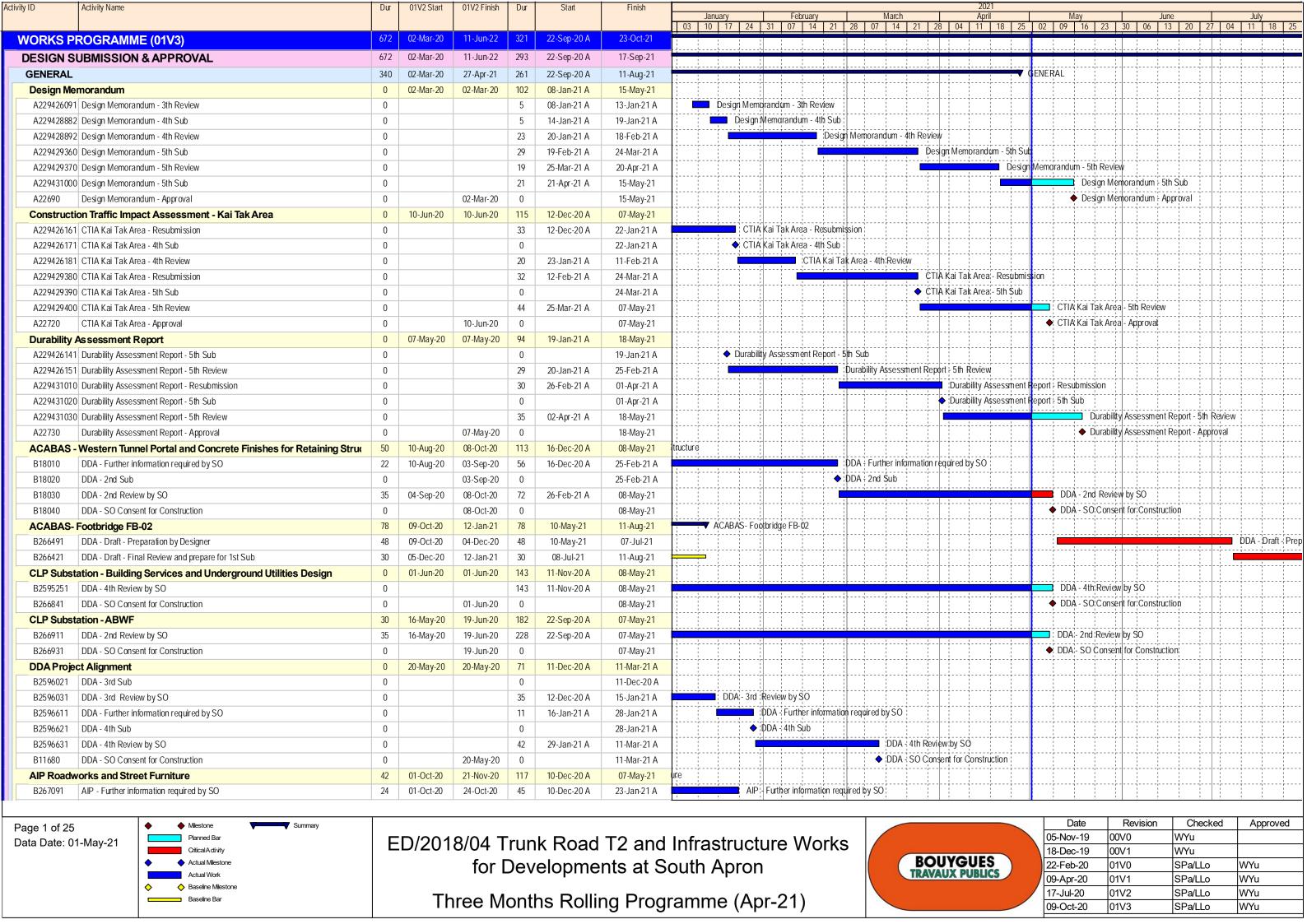
#### **Event and Action Plan for Construction Noise**

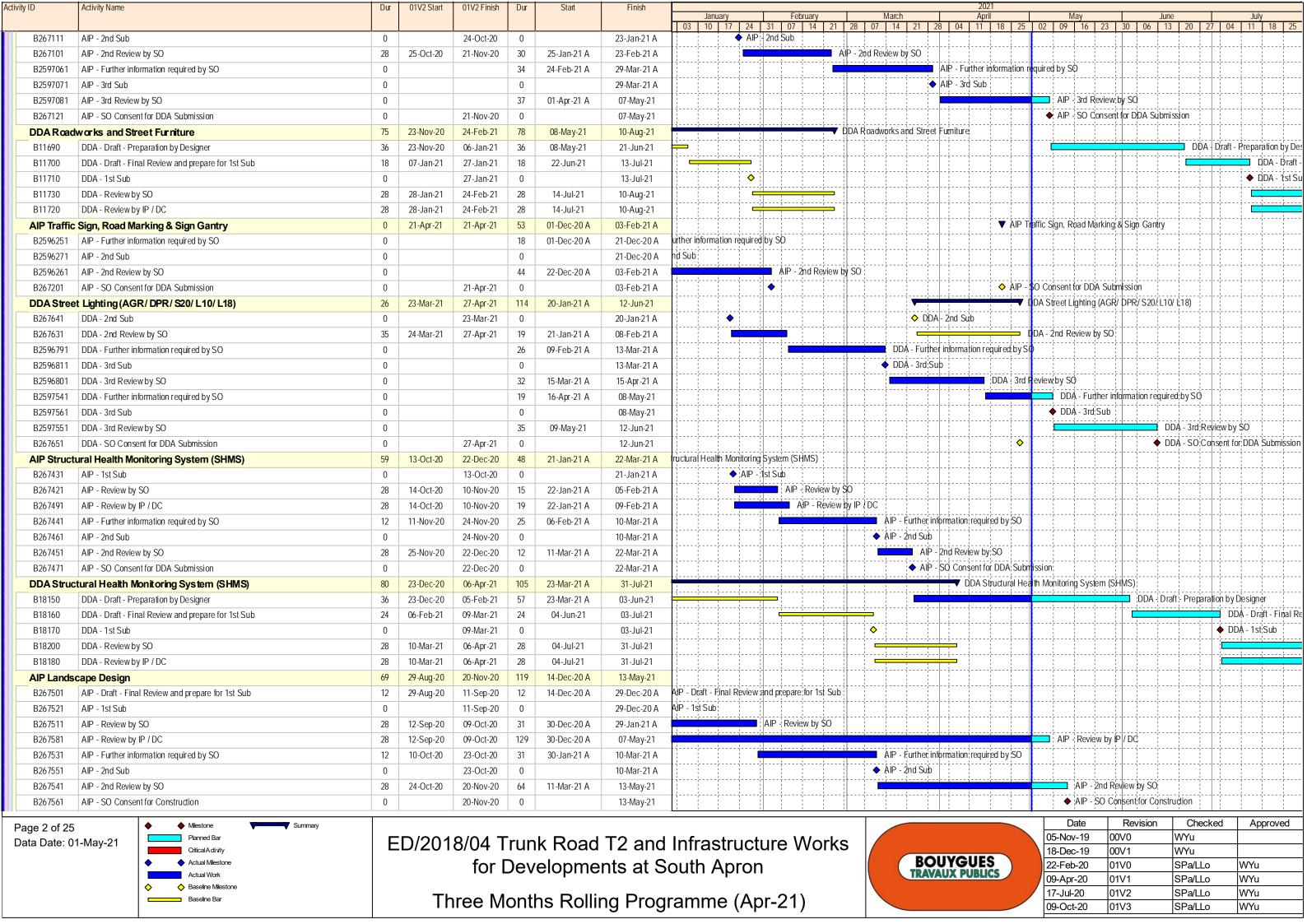
EVENT	ACTION							
		ET		IEC		ER		CONTRACTOR
Action Level	1.	Notify IEC and Contractor;	1.	Review the analysed results submitted by the ET;	1.	Confirm receipt of notification of failure in	1.	Submit noise mitigation proposals to IEC;
	2.	Carry out investigation;	2.	Review the proposed remedial measures by the		writing;	2.	Implement noise mitigation proposals.
	3.	Report the results of investigation to the IEC, ER		Contractor and advise the ER accordingly;	2.	Notify Contractor;		
		and Contractor;	3.	Supervise the implementation of remedial	3.	Require Contractor to propose remedial measures		
	4.	Discuss with the Contractor and formulate		measures.		for the analysed noise problem;		
		remedial measures;			4.	Ensure remedial measures are properly		
	5.	Increase monitoring frequency to check mitigation				implemented.		
		effectiveness.						
Limit Level	1.	Identify source;	1.	Discuss amongst ER, ET, and Contractor on the	1.	Confirm receipt of notification of failure in	1.	Take immediate action to avoid further
	2.	Inform IEC, ER, EPD and Contractor;		potential remedial actions;		writing;		exceedance;
	3.	Repeat measurements to confirm findings;	2.	Review Contractors remedial actions whenever	2.	Notify Contractor;	2.	Submit proposals for remedial actions
	4.	Increase monitoring frequency;		necessary to assure their effectiveness and advise	3.	Require Contractor to propose remedial measures		to IEC within 3 working days of notification;
	5.	Carry out analysis of Contractor's working		the ER accordingly;		for the analysed noise problem;	3.	Implement the agreed proposals;
		procedures to determine possible mitigation to be	3.	Supervise the implementation of remedial	4.	Ensure remedial measures properly implemented;	4.	Resubmit proposals if problem still not under
		implemented;		measures.	5.	If exceedance continues, consider what portion of		control;
	6.	Inform IEC, ER and EPD the causes and actions				the work is responsible and instruct the Contractor	5.	Stop the relevant portion of works as determined
		taken for the exceedances;				to stop that portion of work until the exceedance is		by the ER until the exceedance is abated.
	7.	Assess effectiveness of Contractor's remedial				abated.		
		actions and keep IEC, EPD and ER informed of						
		the results;						
	8.	If exceedance stops, cease additional monitoring.						

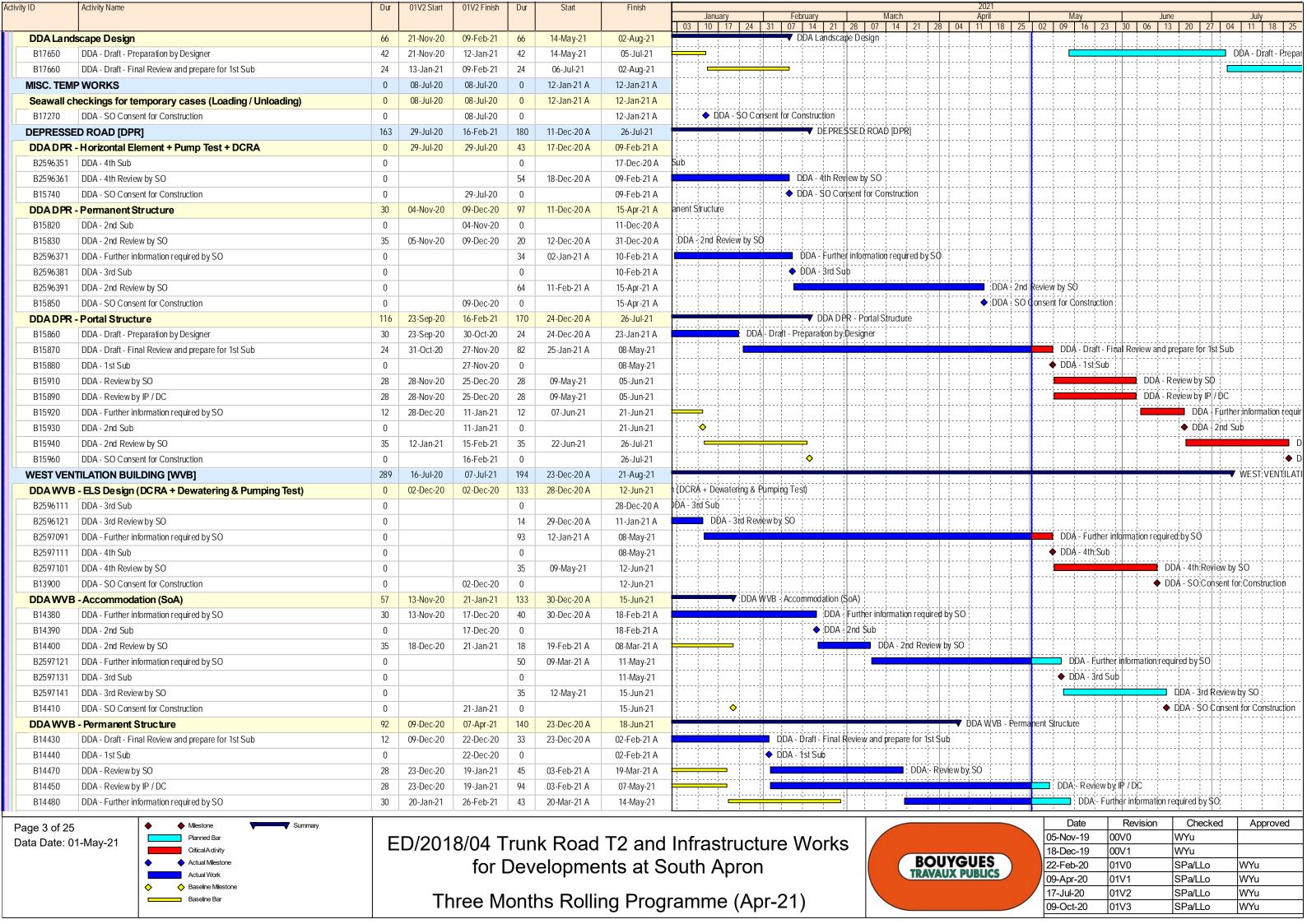
#### **Limit Levels and Action Plan for Landfill Gas**

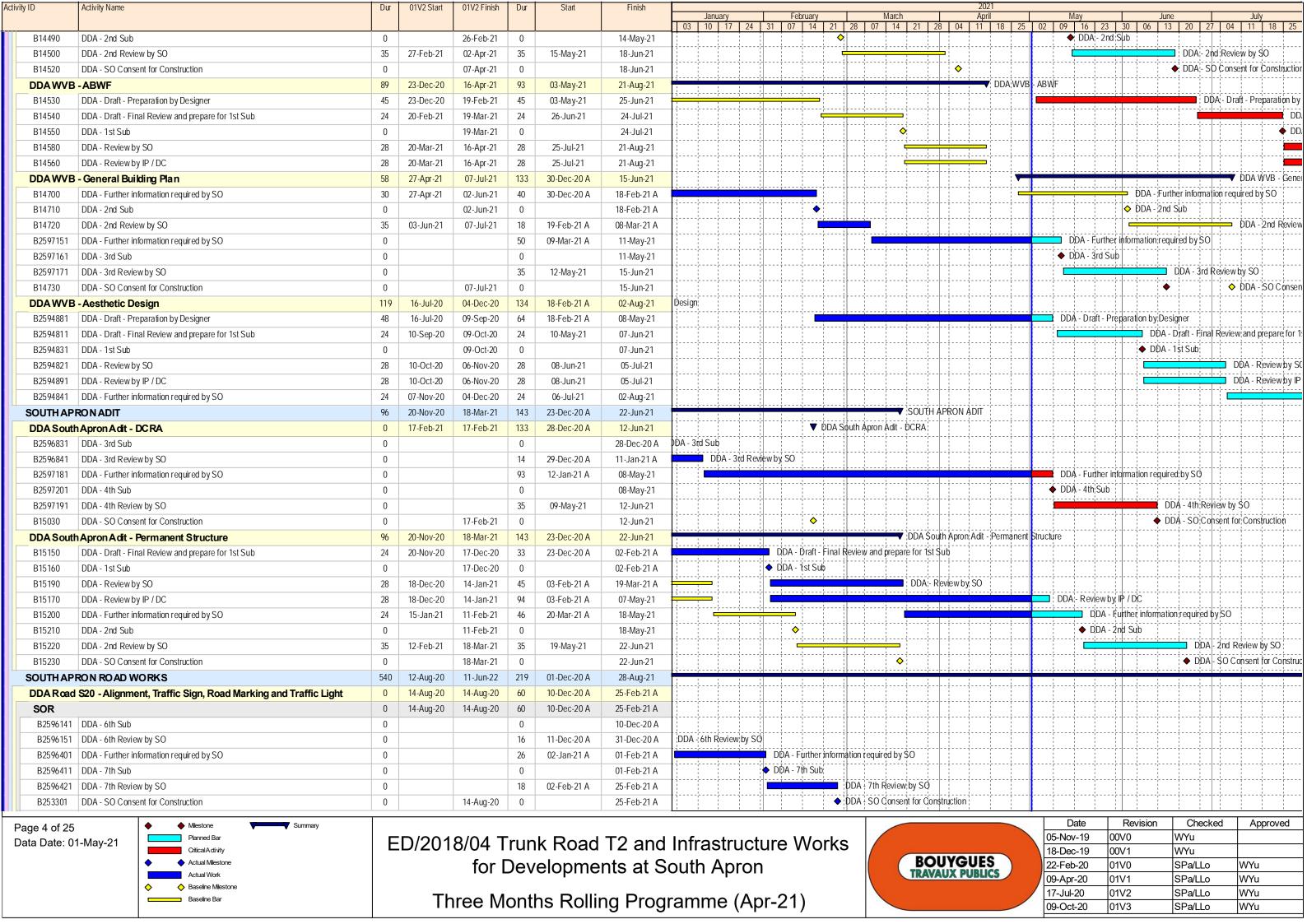
Parameter	Limit Level	Action			
	<19%	• Ventilate to restore oxygen to >19%			
Ovygon		• Stop works			
Oxygen	<18%	Evacuate personnel/prohibit entry			
		• Increase ventilation to restore oxygen to >19%			
	>100/ LEI (i a > 0.50/ hv. voluma)	Prohibit hot works			
	>10% LEL (i.e. > 0.5% by volume)	• Ventilate to restore methane to <10% LEL			
Methane		• Stop works			
	>20% LEL (i.e. > 1% by volume)	• Evacuate personnel / prohibit entry			
		• Increase ventilation to restore methane to <10% LEL			
	>0.5%	• Ventilate to restore carbon dioxide to < 0.5%			
Carbon		• Stop works			
Dioxide	>1.5%	• Evacuate personnel / prohibit entry			
		• Increase ventilation to restore carbon dioxide to <0.5%			

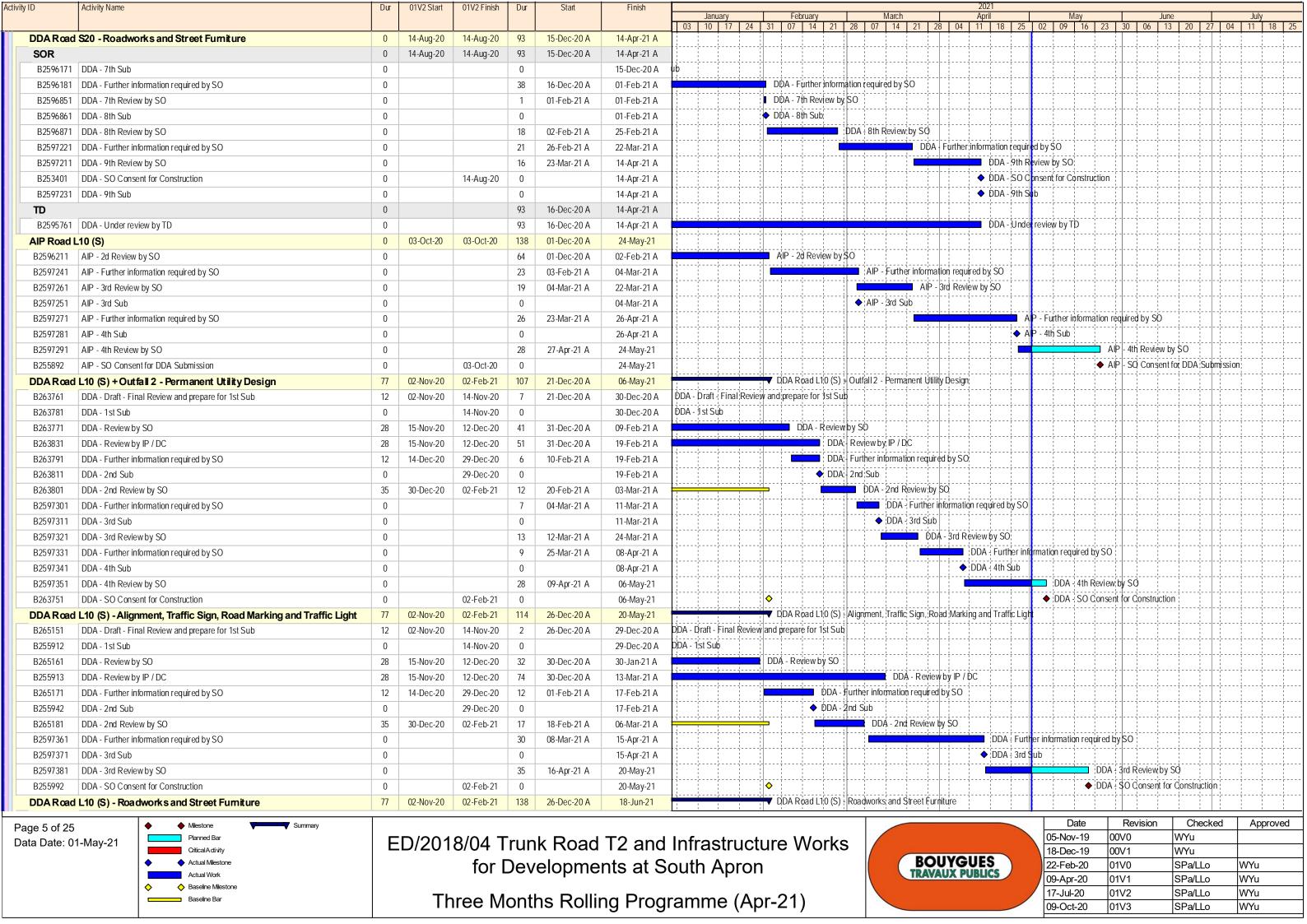
## APPENDIX L CONSTRUCTION PROGRAMME



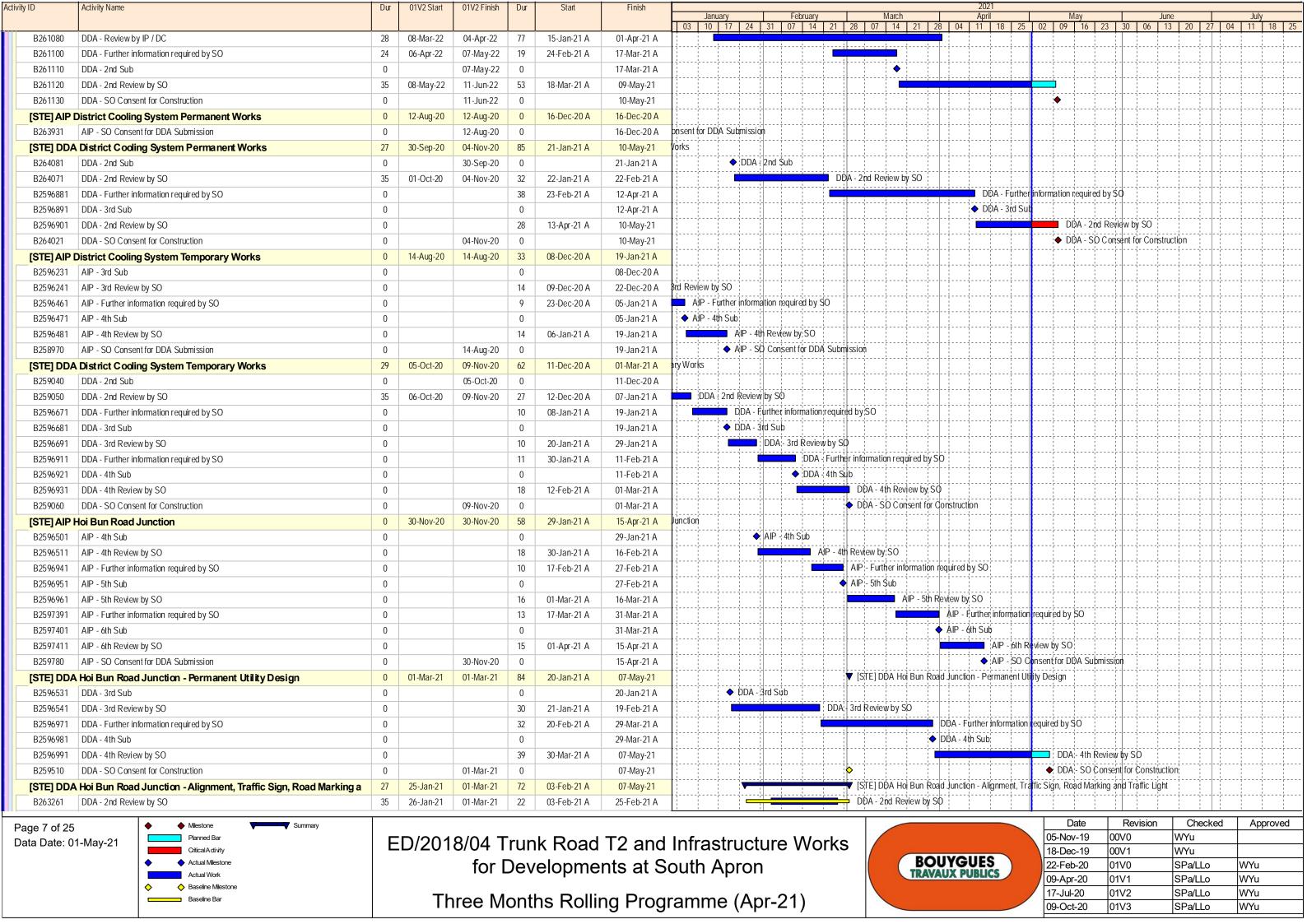


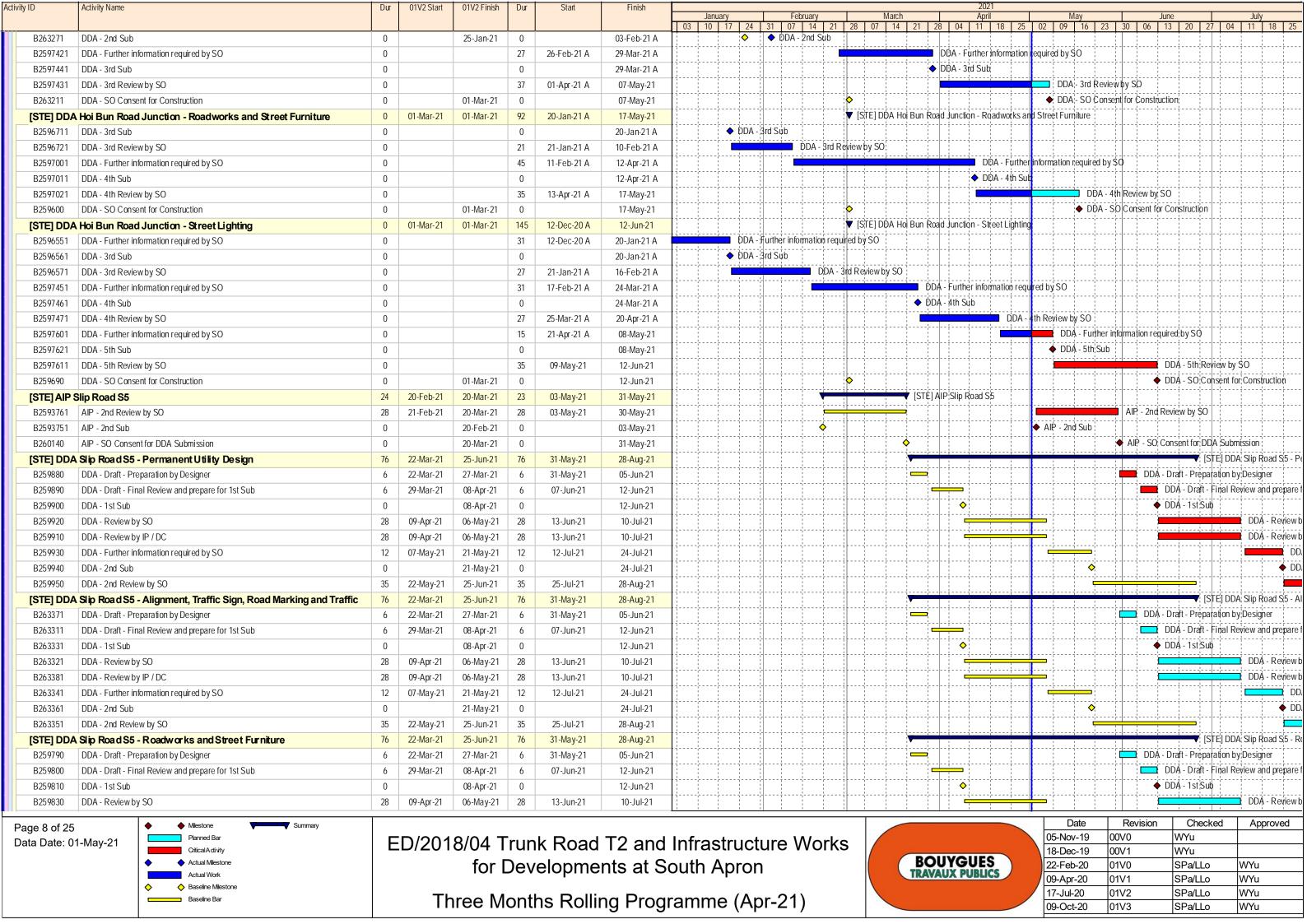


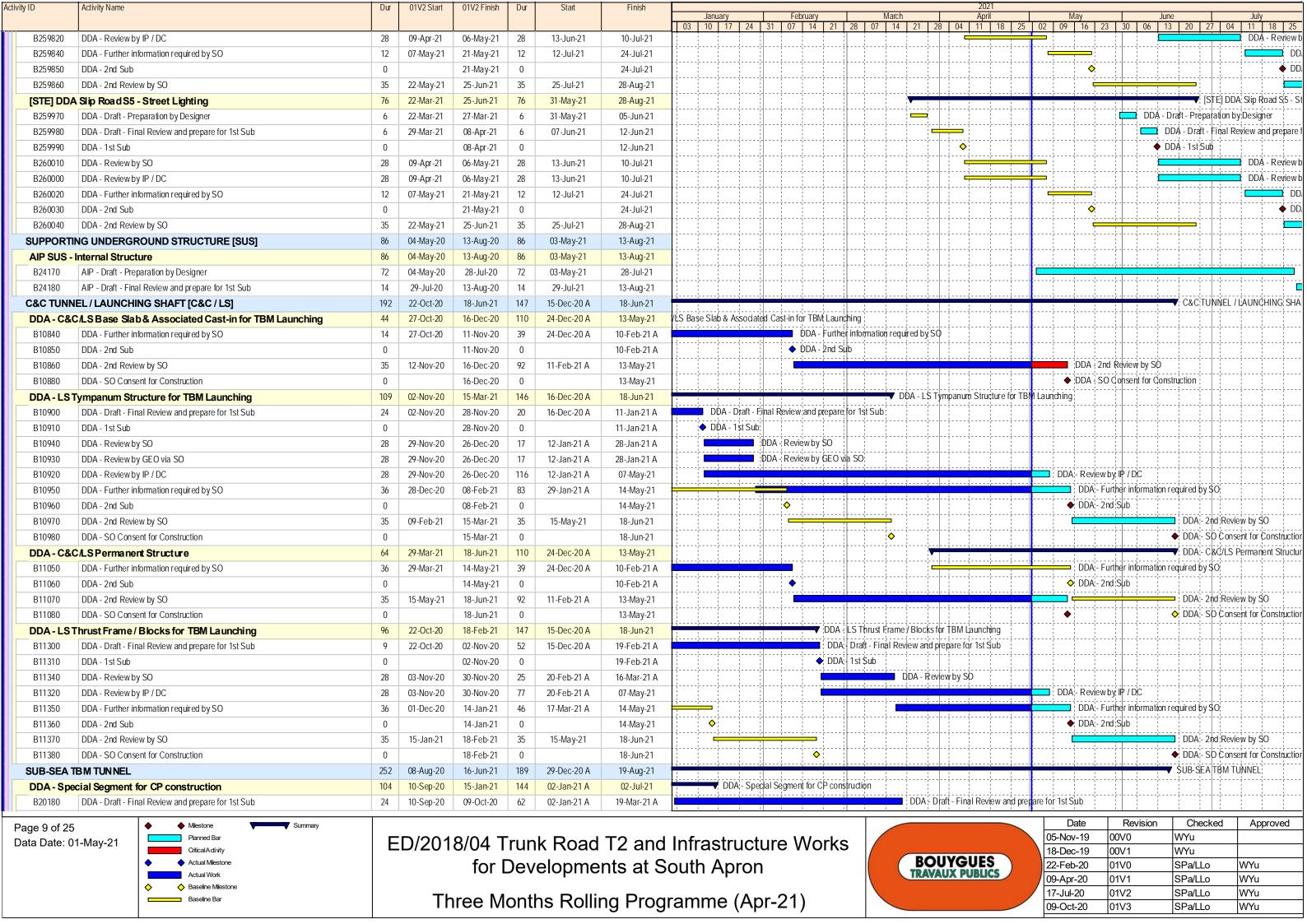


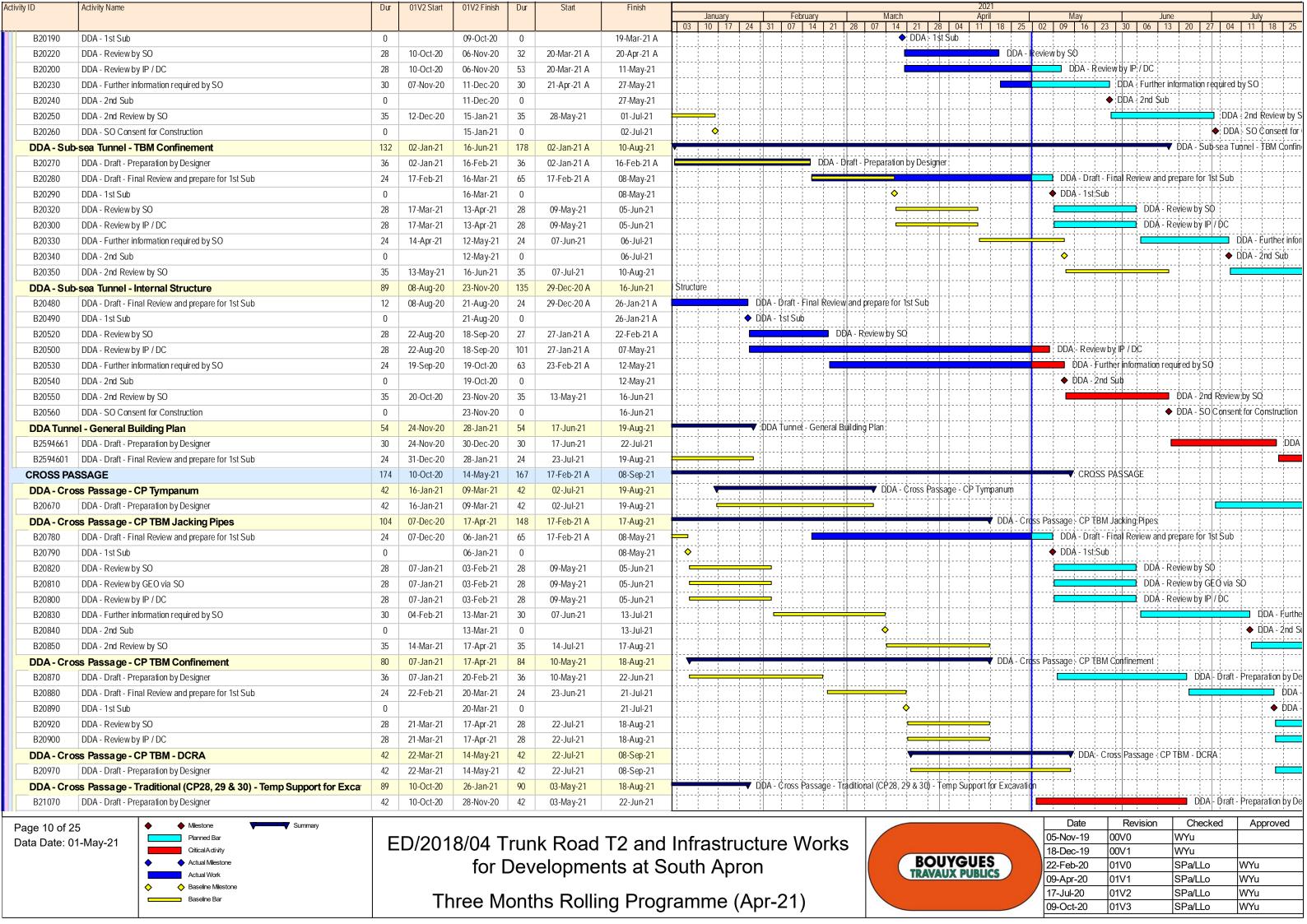


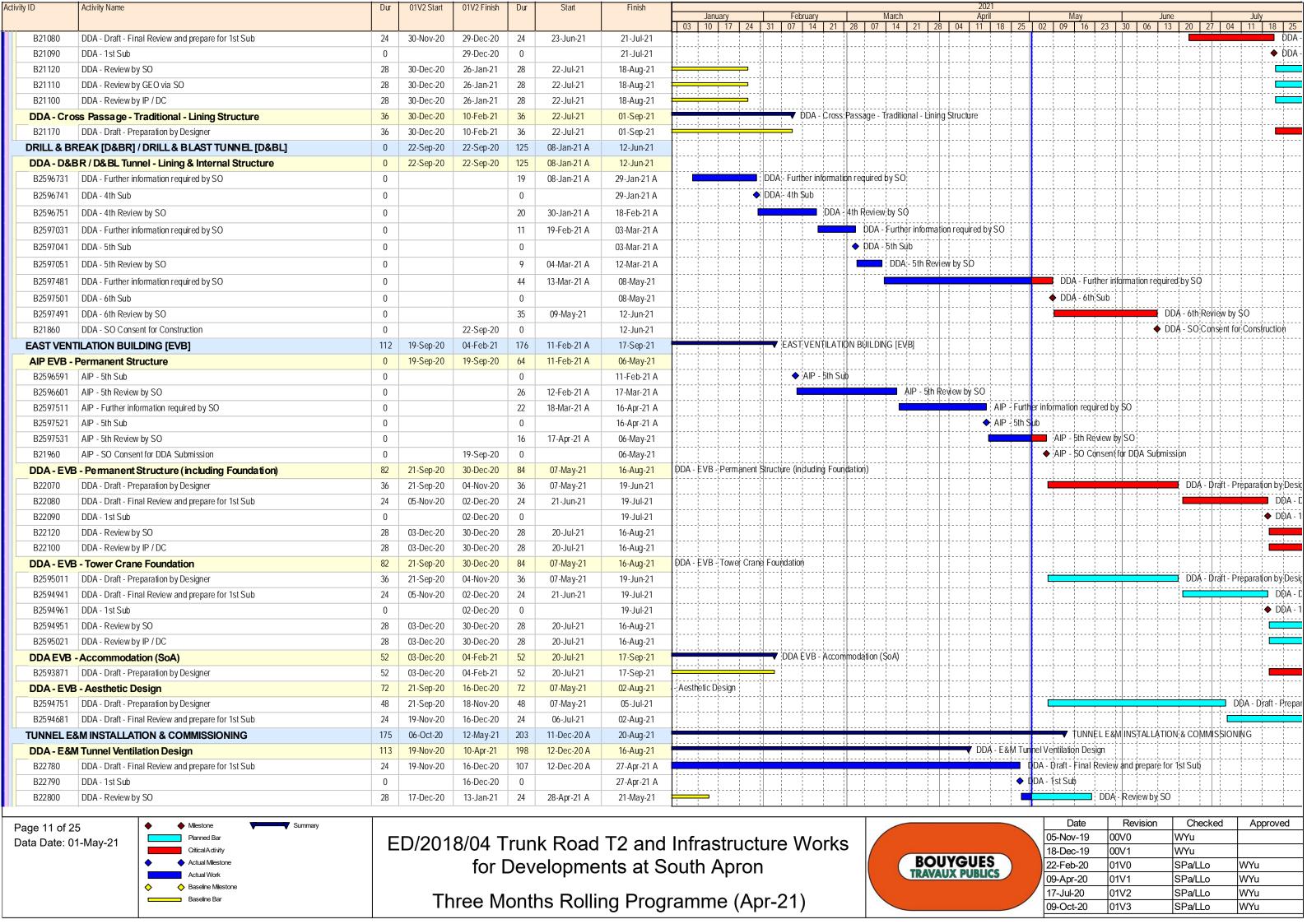
Activity ID	Activity Name	Dur	01V2 Start	01V2 Finish	Dur	Start	Finish	2021					
								January   February   March   April	May 02 09 16 1	23   30   06	June 5   13   20	27 04	July 11 18 25
B263671	DDA - Draft - Final Review and prepare for 1st Sub	12	02-Nov-20	14-Nov-20	2	26-Dec-20 A	29-Dec-20 A	DDA - Draft - Final Review and prepare for 1st Sub					
B263691	DDA - 1st Sub	0		14-Nov-20	0		29-Dec-20 A	DDA - 1 <sub>ist</sub> Sub					
B263681	DDA - Review by SO	28	15-Nov-20	12-Dec-20	28	30-Dec-20 A	26-Jan-21 A	DDA - Review by SO					
B263741	DDA - Review by IP / DC	28	15-Nov-20	12-Dec-20	129	30-Dec-20 A	07-May-21		DDA Revi	ew by, IP / DC			
B263701	DDA - Further information required by SO	12	14-Dec-20	29-Dec-20	85	27-Jan-21 A	14-May-21		DDA	- Further inform	ation required b	y \$O	
B263721	DDA - 2nd Sub	0		29-Dec-20	0		14-May-21		◆ DDA	- 2nd Sub			
B263711	DDA - 2nd Review by SO	35	30-Dec-20	02-Feb-21	35	15-May-21	18-Jun-21	<u> </u>			DDA:-	2nd Revi	ew by SO
B263661	DDA - SO Consent for Construction	0		02-Feb-21	0		18-Jun-21	<b>♦</b>			◆ DDA	SO Cons	ent for Construction
AIP Foot B	ridge FB-02	24	25-Aug-20	22-Sep-20	15	14-Dec-20 A	04-Jan-21 A						
B256042	AIP - 2nd Sub	0		25-Aug-20	0		14-Dec-20 A						
B265211	AIP - 2nd Review by SO	28	26-Aug-20	22-Sep-20	21	15-Dec-20 A	04-Jan-21 A	AIP - 2nd Review by \$0					
B256092	AIP - SO Consent for DDA Submission	0		22-Sep-20	0		04-Jan-21 A	◆ AIP - SQ Consent for DDA Submission					
DDA Foot L	Bridge FB-02	74	09-Oct-20	07-Jan-21	128	05-Jan-21 A	12-Jun-21	DDA Foot Bridge FB-02					
B263851	DDA - Draft - Final Review and prepare for 1st Sub	12	09-Oct-20	22-Oct-20	6	05-Jan-21 A	11-Jan-21 A	DDA - Draft - Final Review and prepare for 1st Sub					
B263871	DDA - 1st Sub	0		22-Oct-20	0		11-Jan-21 A	◆ DDA - 1st Sub					
B263861	DDA - Review by SO	28	23-Oct-20	19-Nov-20	45	12-Jan-21 A	25-Feb-21 A	DDA - Review by SO					
B263921	DDA - Review by IP / DC	28	23-Oct-20	19-Nov-20	77	12-Jan-21 A	29-Mar-21 A	DDA - Reviewby IP / DC					
B263881	DDA - Further information required by SO	12	20-Nov-20	03-Dec-20	16	26-Feb-21 A	16-Mar-21 A	DDA - Further information required by	S0				
B263901	DDA - 2nd Sub	0		03-Dec-20	0		16-Mar-21 A	◆ DDA - 2nd Sub					
B263891	DDA - 2nd Review by SO	35	04-Dec-20	07-Jan-21	14	17-Mar-21 A	30-Mar-21 A	DDA - 2nd Review by SO					-
B2597571	DDA - Further information required by SO	0			28	01-Apr-21 A	08-May-21		DDA - Furt	her information	required by SO		
B2597581	DDA - 2nd Sub	0			0		08-May-21		♦ DDA - 2nd				
B2597591	DDA - 2nd Review by SO	0			35	09-May-21	12-Jun-21				DDA - 2nd		
B263841	DDA - SO Consent for Construction	0		07-Jan-21	0		12-Jun-21	<b>♦</b>			DDA - SO	Consent fo	or Construction
DDACUE	Entrance ELS	39	12-Sep-20	30-Oct-20	37	18-Dec-20 A	02-Feb-21 A						
B260830	DDA - Further information required by SO	12	12-Sep-20	25-Sep-20	24	18-Dec-20 A	18-Jan-21 A	DDA - Further information required by \$O					
B260840	DDA - 2nd Sub	0		25-Sep-20	0		18-Jan-21 A	◆ DDA - 2nd Sub					
B260850	DDA - 2nd Review by SO	35	26-Sep-20	30-Oct-20	15	19-Jan-21 A	02-Feb-21 A	DDA - 2nd Review by SO					
B260860	DDA - SO Consent for Construction	0		30-Oct-20	0		02-Feb-21 A	◆ DDA - \$O Consent for Construction					
DDACUE	Permanent Works	0	21-Oct-20	21-Oct-20	48	09-Dec-20 A	05-Feb-21 A						-
B2596431	DDA - Further information required by SO	0			9	09-Dec-20 A	18-Dec-20 A	ther information required by SO:					
B2596441	DDA - 3rd Sub	0			0		18-Dec-20 A	Şub					
B2596451	DDA - 3rd Review by SO	0			27	19-Dec-20 A	14-Jan-21 A	DDA - 3rd Review by SQ					
B2596641	DDA - Further information required by SO	0			7	15-Jan-21 A	22-Jan-21 A	DDA: Further information required by SO					
B2596651	DDA - 3rd Sub	0			0		22-Jan-21 A	◆ DDA; 3rd \$ub					
B2596661	DDA - 3rd Review by SO	0			14	23-Jan-21 A	05-Feb-21 A	DDA:- 3rd Review by SO					
B260950	DDA - SO Consent for Construction	0		21-Oct-20	0		05-Feb-21 A	◆ DDA:- SO Consent for Construction					1 1 1
[STE] AIP (	CUE L10 (N) Permanent Works	66	03-Dec-21	24-Feb-22	38	05-Dec-20 A	21-Jan-21 A						1 1 1
B261240	AIP - Draft - Final Review and prepare for 1st Sub	12	03-Dec-21	16-Dec-21	2	05-Dec-20 A	07-Dec-20 A						·
B261250	AIP - 1st Sub	0		16-Dec-21	0		07-Dec-20 A		, , , , ,				
B261270	AIP - Review by SO	28	17-Dec-21	13-Jan-22	16	08-Dec-20 A	23-Dec-20 A				-,,- 		
B261260	AIP - Review by IP / DC	28	17-Dec-21	13-Jan-22	16	08-Dec-20 A	23-Dec-20 A				-,		 
B261280	AIP - Further information required by SO	12	14-Jan-22	27-Jan-22	17	24-Dec-20 A	15-Jan-21 A						
B261290	AIP - 2nd Sub	0		27-Jan-22	0		15-Jan-21 A	♦					
B261300	AIP - 2nd Review by SO	28	28-Jan-22	24-Feb-22	6	16-Jan-21 A	21-Jan-21 A						
B261310	AIP - SO Consent for DDA Submission	0		24-Feb-22	0		21-Jan-21 A						
[STE] DDA	CUE L10 (N) Permanent Works	88	22-Feb-22	11-Jun-22	116	12-Dec-20 A	10-May-21						
B261060	DDA - Draft - Final Review and prepare for 1st Sub	12	22-Feb-22	07-Mar-22	26	12-Dec-20 A	14-Jan-21 A						
B261070	DDA - 1st Sub	0		07-Mar-22	0		14-Jan-21 A	•					
B261090	DDA - Review by SO	28	08-Mar-22	04-Apr-22	40	15-Jan-21 A	23-Feb-21 A						
Page 6 of 25	♦ Milestone Summary	Ι							Date	Revision	on Che	cked	Approved
Data Date: 01	DI 15		D/204	Q/∩1 T	run	k Daad	T2 224	Infractructure Works	05-Nov-19	00V0	WYu		
Data Date. 0	Critical Addivity 18-Dec-19 00V1 WYu												
	Actual Milestone for Developments at South Apron  Actual Work  BOUYGUES TRAVAUX PUBLICS								22-Feb-20	01V0	SPa/LL		WYu
	♦ ♦ Baseline Milestone								09-Apr-20	01V1	SPa/LL		WYu
	Baseline Bar		Th	ree Mo	ontl	ns Rollii	na Proa	ramme (Apr-21)	17-Jul-20	01V2	SPa/LL		WYu
				55 171	J 1 1 (1			S	09-Oct-20	01V3	SPa/LL	U	WYu

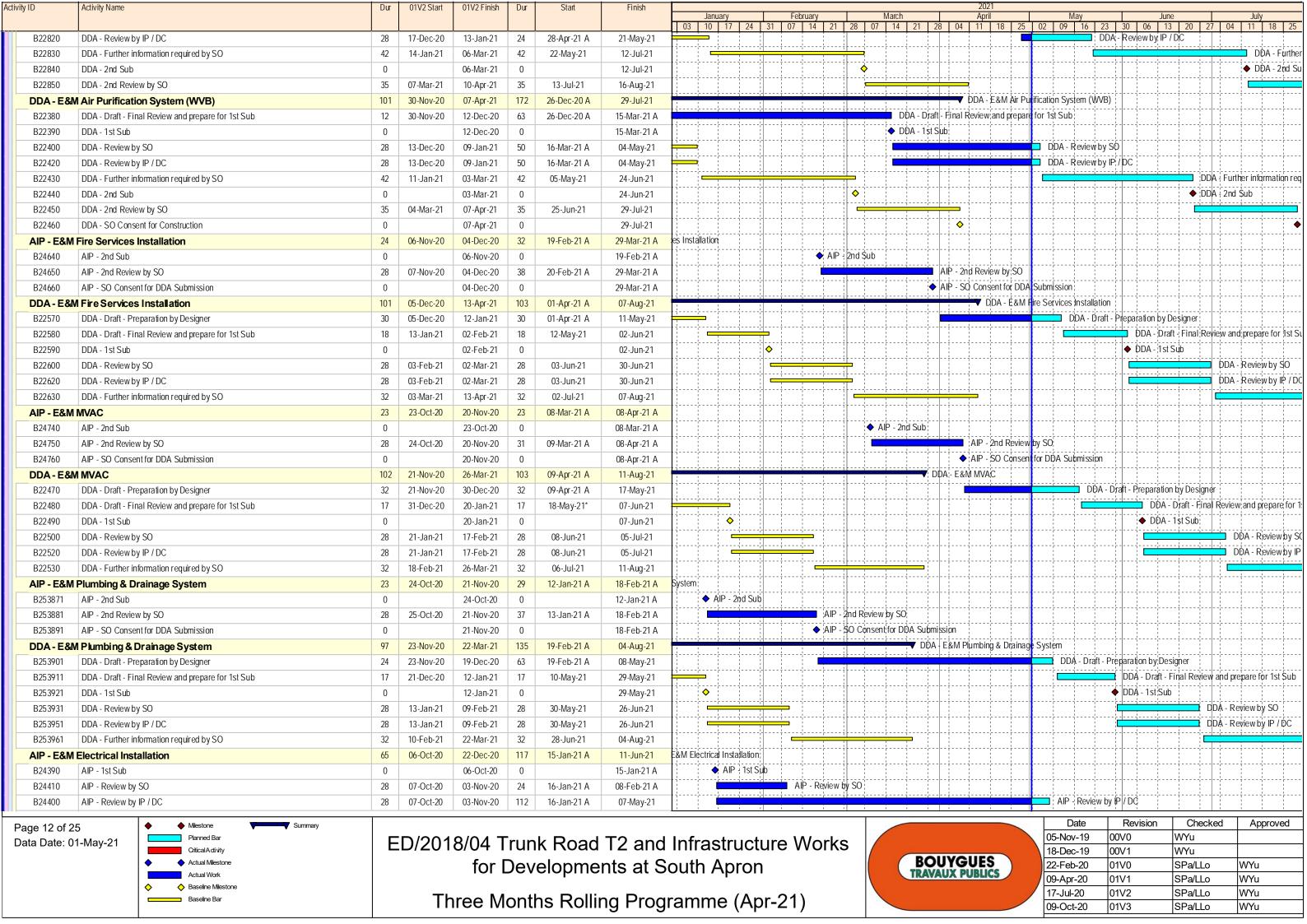


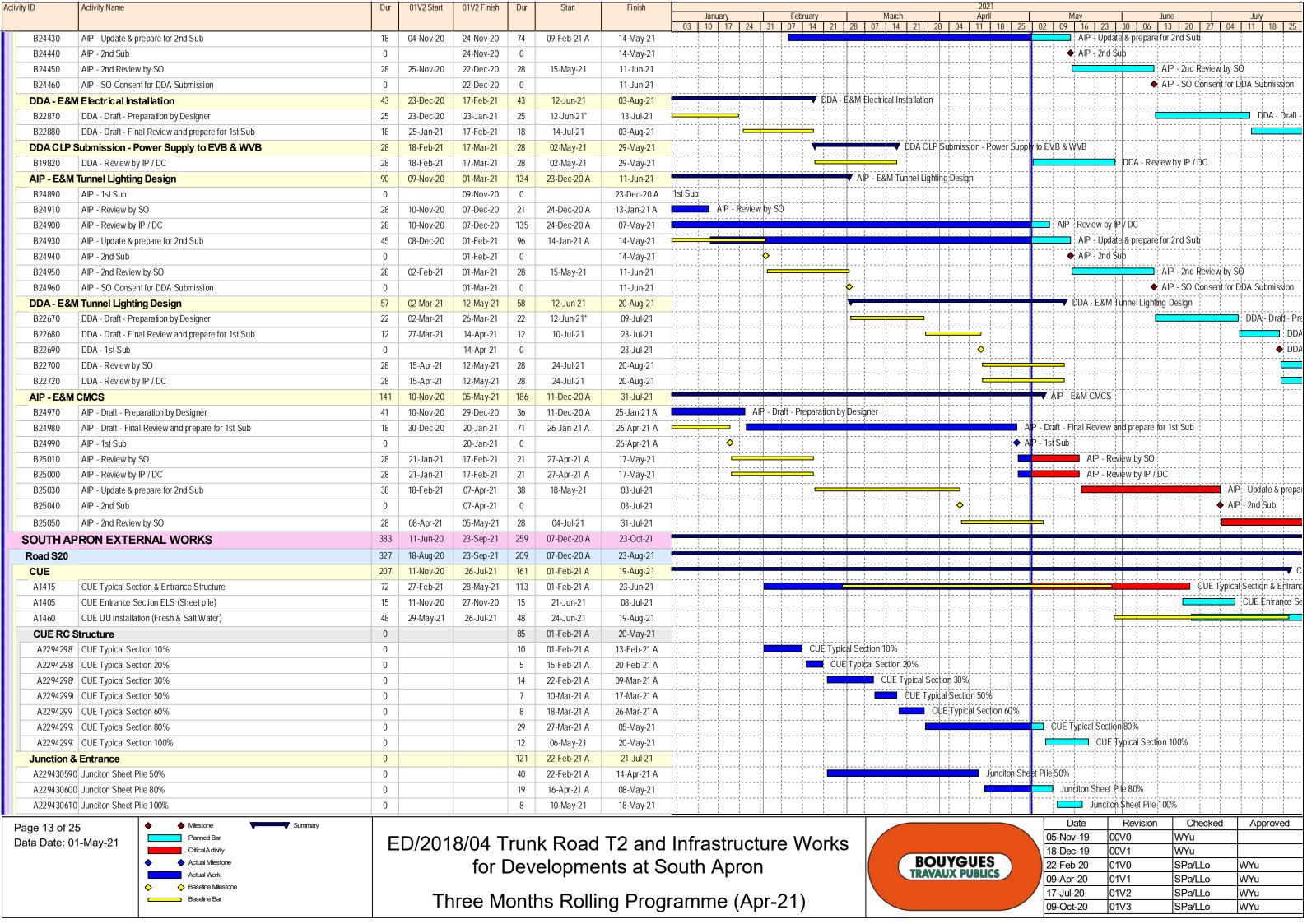


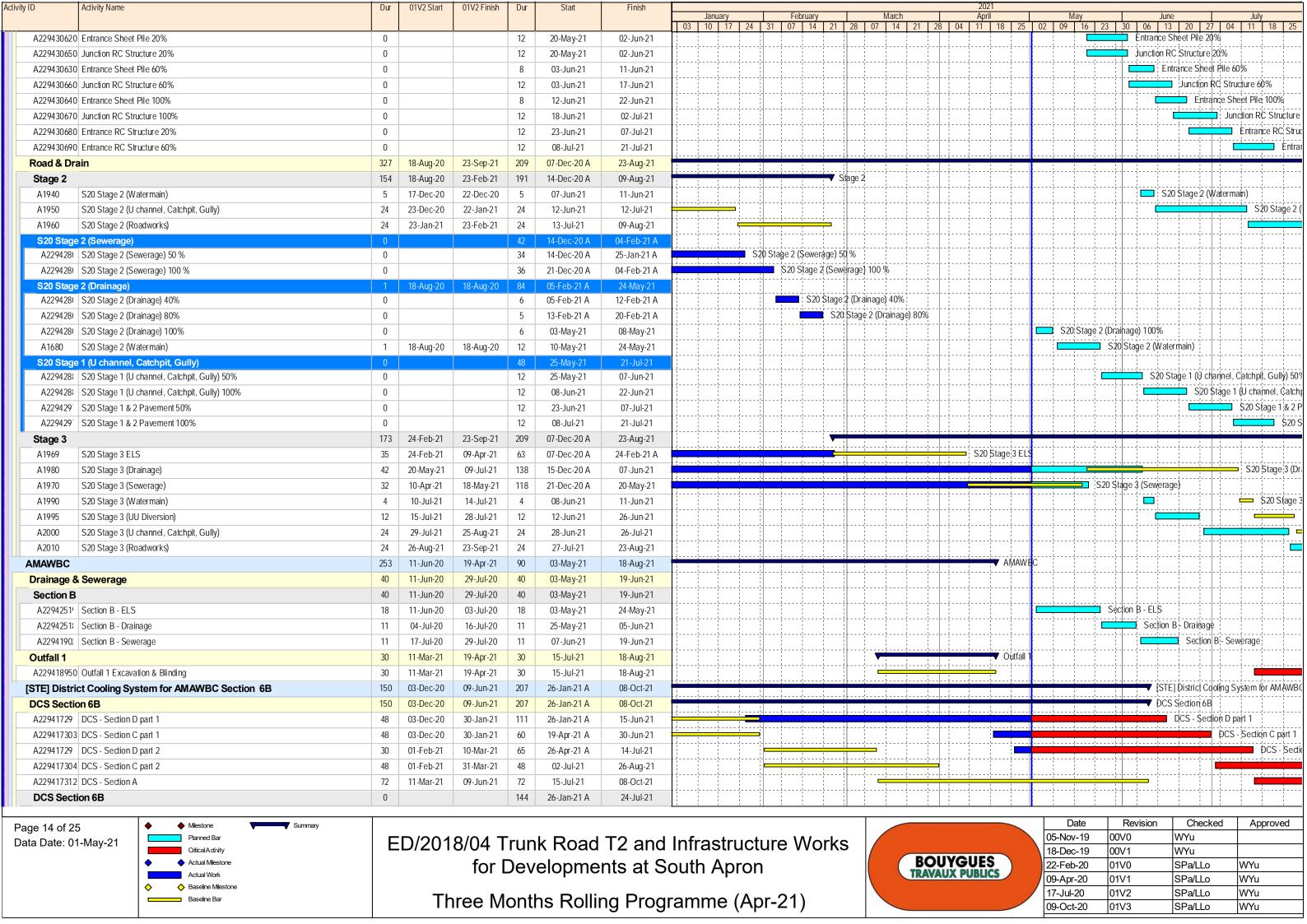


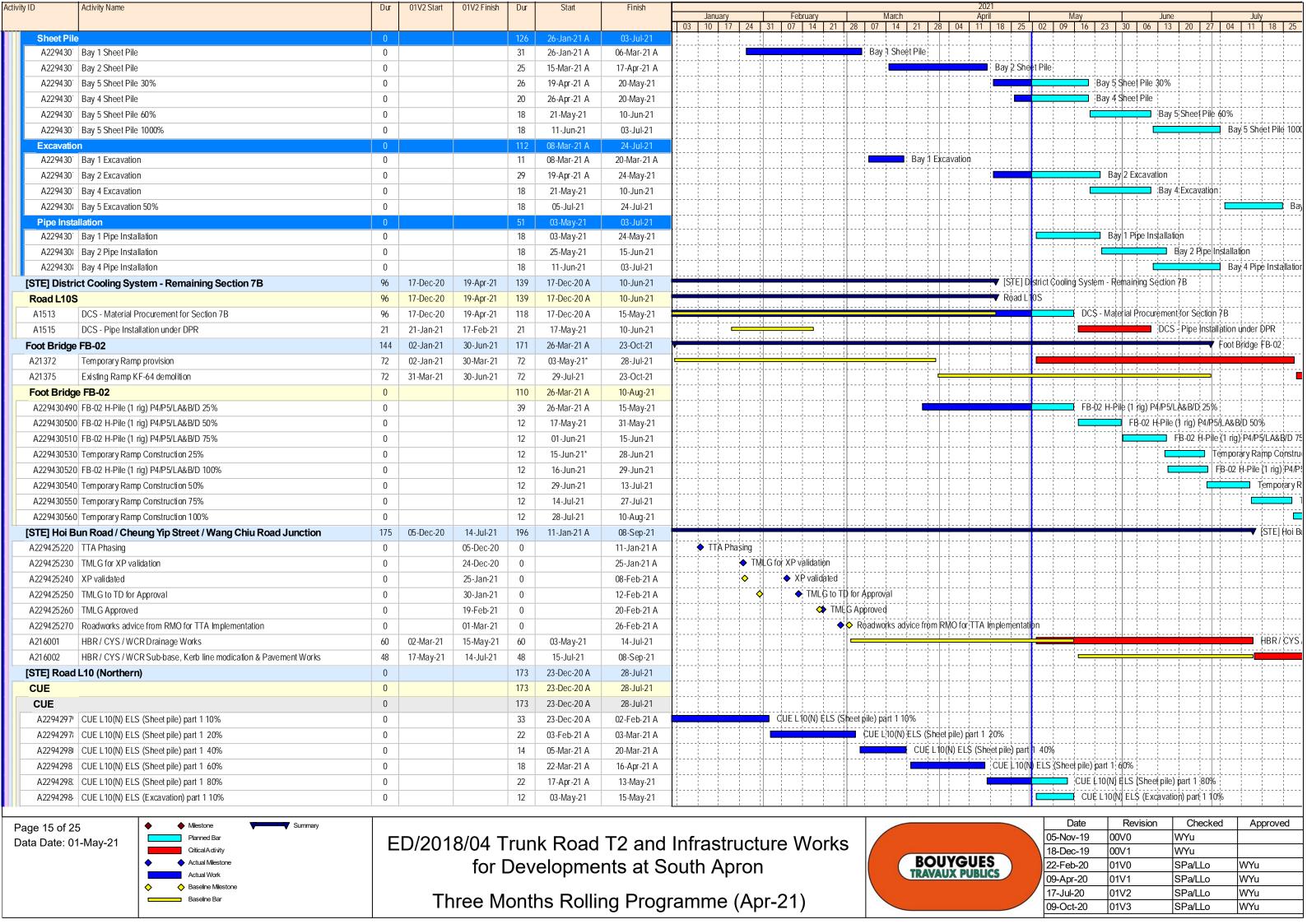




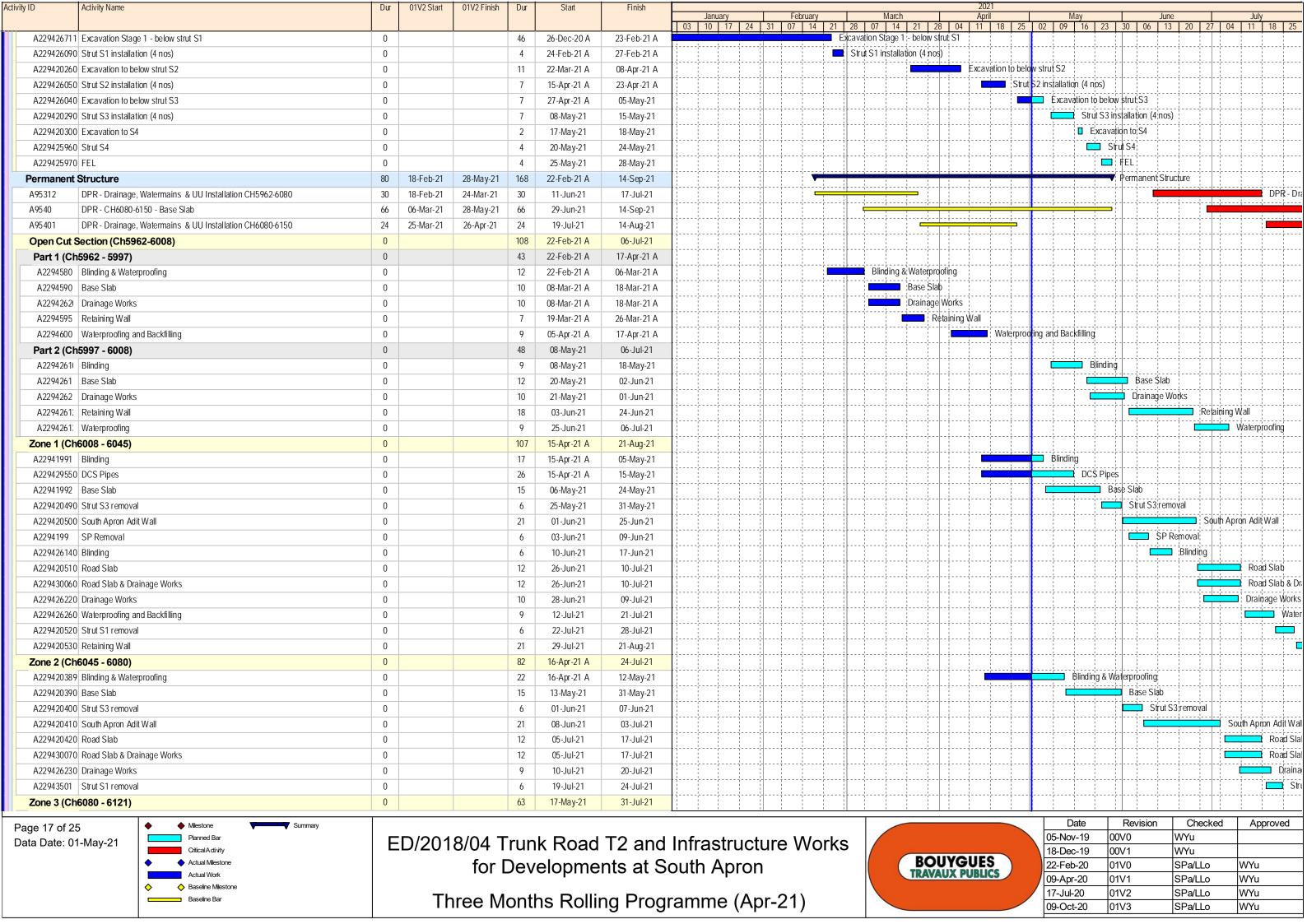




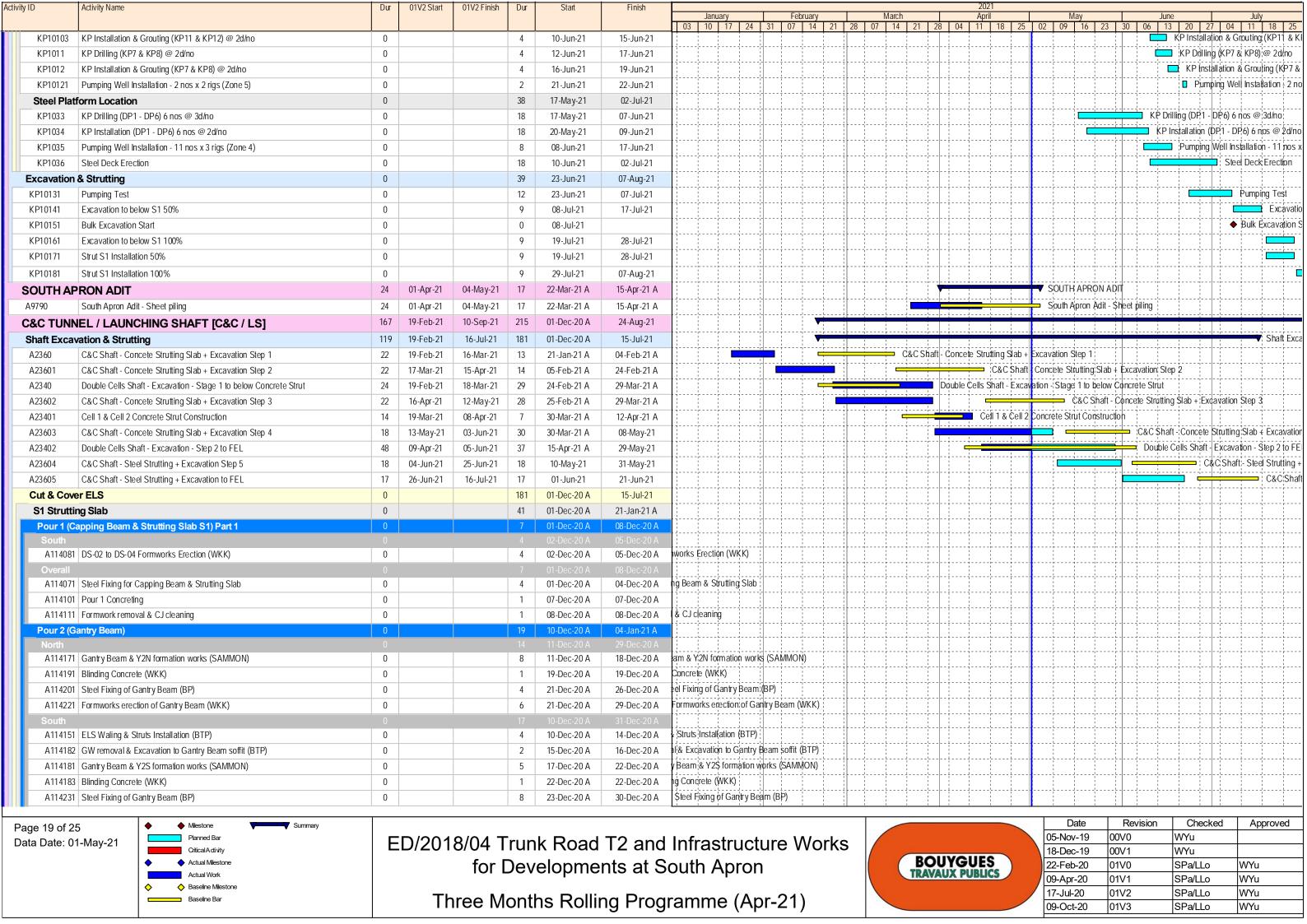




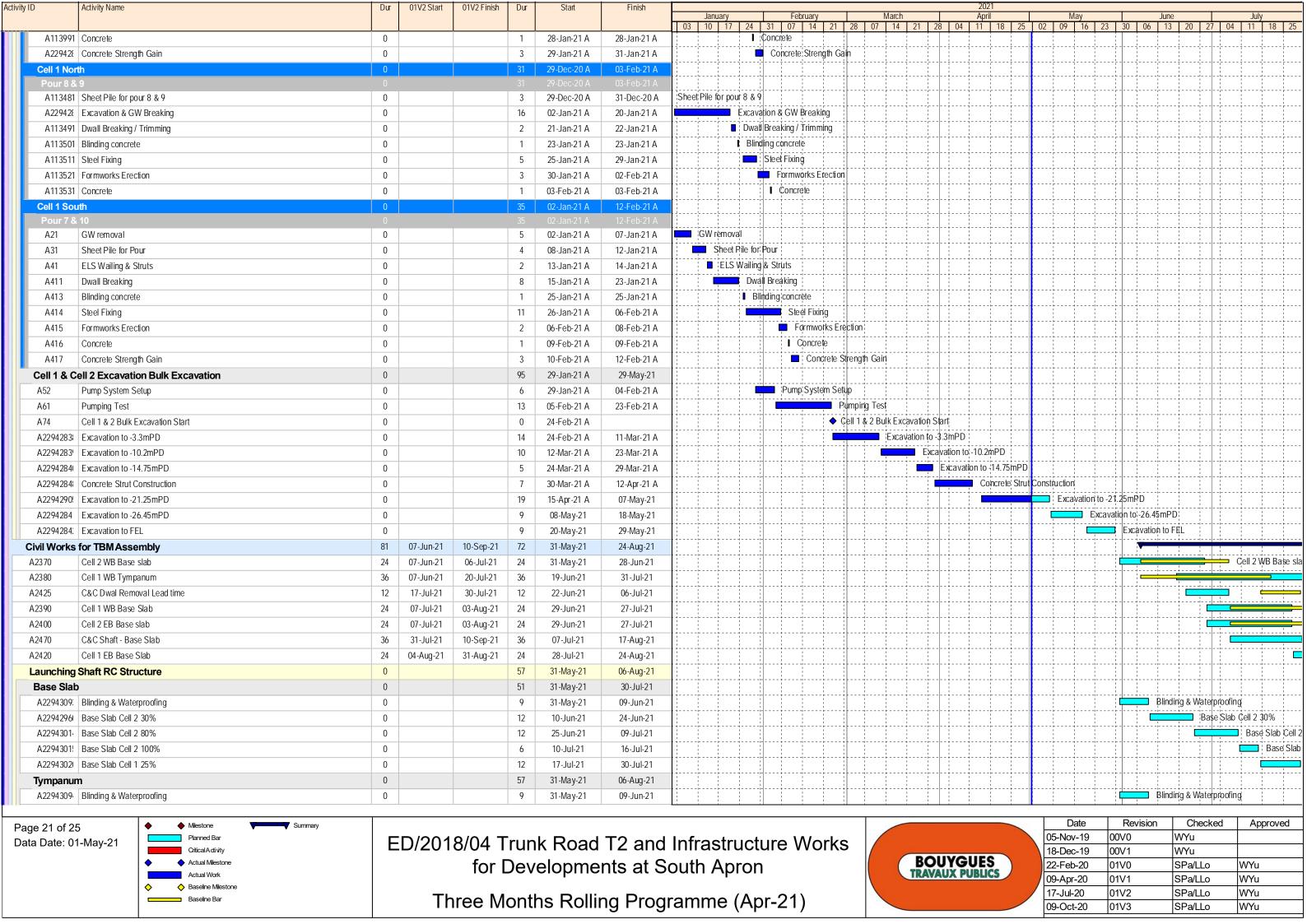
Activity ID	Activity Name	Dur	01V2 Start	01V2 Finish	Dur	Start	Finish	2021	Mari	l. l. l.
								January         February         March         April         N           03         10         17         24         31         07         14         21         28         07         14         21         28         04         11         18         25         02         09	May June   16   23   30   06   13   20	7   July   27   04   11   18   25
A2294298	CUE L10(N) ELS (Sheet pile) part 1 100%	0			12	14-May-21	28-May-21		CUE L10(N) ELS (Shee	pile) part 1: 100%
A2294298!	CUE L10(N) ELS (Excavation) part 1 20%	0			12	17-May-21	31-May-21		CUE L10(N) ELS (Ex	
A2294304!	CUE L10(N) ELS (Sheet pile) part 1 10%	0			12	29-May-21	11-Jun-21			ELS (Sheet pile) part 1 10%
A2294298	CUE L10(N) ELS (Excavation) part 1 30%	0			12	01-Jun-21	15-Jun-21		CUE L1	O(N) ELS (Excavation) part 1
A2294304	CUE L10(N) ELS (Sheet pile) part 1 20%	0			12	12-Jun-21	26-Jun-21			CUE L10(N) ELS (Sheet pile
A2294304:	, , , , , , , , , , , , , , , , , , , ,	0			12	16-Jun-21	29-Jun-21			CUE L10(N) ELS (Excava
	CUE L10(N) ELS (Sheet pile) part 1 30%	0			12	28-Jun-21	12-Jul-21			CUE L10(N) E
	CUE L10(N) ELS (Excavation) part 1 50%	0			12	30-Jun-21	14-Jul-21			CUE L10(N)
	CUE L10(N) ELS (Sheet pile) part 1 40%	0			12	13-Jul-21	26-Jul-21			C
A2294304	CUE L10(N) ELS (Excavation) part 1 60%	0			12	15-Jul-21	28-Jul-21			
DEPRESS	ED ROAD [DPR]	173	24-Oct-20	28-May-21	233	01-Dec-20 A	14-Sep-21		DEPRESSED ROAD [D	PRI :
Excavation		107	24-Oct-20	05-Mar-21	167	01-Dec-20 A	28-Jun-21	▼ Excavation & Strutting		
A9510	DPR - CH5962-6008 - Excavation S1	24	24-Oct-20	21-Nov-20	63	01-Dec-20 A	18-Feb-21 A	DPR - CH5962-6008 - Excavation S1		
A9530	DPR - CH6080-6150 - Excavation to S1	18	24-Oct-20	14-Nov-20	55	15-Dec-20 A	23-Feb-21 A	DPR - ¢H6080-6150 - Excavation to \$1		
A95201	DPR - CH6008-6080 - Strut S1 Installation	12	19-Nov-20	02-Dec-20	26	25-Jan-21 A	26-Feb-21 A	DPR - CH6008-6080 - \$trut \$1 Installation		
A95301	DPR - CH6080-6150 - Strut S1 Installation	12	16-Nov-20	28-Nov-20	16	15-Feb-21 A	05-Mar-21 A	DPR- CH6080-6150 - \$trut \$1 Installation	.;;;	
A95302	DPR - CH6080-6150 - Excavation to S2	12	30-Nov-20	12-Dec-20	20	22-Feb-21 A	16-Mar-21 A	DPR - ¢H6080-6150 - Excavation to \$2		
A95202	DPR - CH6008-6080 - Excavation to Strut S3	20	03-Dec-20	28-Dec-20	37	24-Feb-21 A	13-Apr-21 A			
A95203	DPR - CH6008-6080 - Strut S3 Installation	12	29-Dec-20	12-Jan-21	29	10-Mar-21 A	17-Apr-21 A	DPR- CH6008-6080 -		
A95303	DPR - CH6080-6150 - Strut S2 Installation	12	14-Dec-20	29-Dec-20	21	22-Mar-21 A	20-Apr-21 A	Jiiiijiiiii,i,	0 - Strut S2 Installation	
A95304	DPR - CH6080-6150 - Excavation to S3	12	30-Dec-20	13-Jan-21	34	25-Mar-21 A	08-May-21	<u> </u>	R - CH6080-6150 - Excavation to S3	
A95204	DPR - CH6008-6080 - Excavation to FEL	/	13-Jan-21	20-Jan-21	8	14-Apr-21 A	22-Apr-21 A		080 - Excavation to FEL	C2 Listallation
A95305	DPR - CH6080-6150 - Strut S3 Installation	12	14-Jan-21	27-Jan-21	12	10-May-21	24-May-21		DPR - CH6080-6150 - Stru	
A95306	DPR - CH6080-6150 - Excavation to S4	12	28-Jan-21	10-Feb-21	12	25-May-21	07-Jun-21	-	. i i i i i i	-6150 - Excavation to S4
A95307	DPR - CH6080-6150 - Strut S4 Installation	12	11-Feb-21	27-Feb-21	12	08-Jun-21	22-Jun-21	<u> </u>		PR - ¢H6080-6150 - Strut S4  DPR - CH6080-6150 - Exc
A95308	DPR - CH6080-6150 - Excavation FEL	5	01-Mar-21	05-Mar-21	5	23-Jun-21	28-Jun-21	<del>             -</del>		DPR - C 10000-0130  - EXC
	Section (Ch5962-6008)   Excavation Ch5963 - Ch5997	0			00	15-Feb-21 A 15-Feb-21 A	07-May-21 20-Feb-21 A	Excavation Ch5963 - Ch5997		
	Excavation Ch5997 - Ch6008	0			5	03-May-21	07-May-21	dbbbbbbb	avation Ch5997 - Ch6008	
	16008 - 6045)	0			01	14-Dec-20 A	10-Apr-21 A	LAC	avalion C10777 - C10000;	
· · · · · · · · · · · · · · · · · · ·	Excavation Stage 1 - below strut S1	0			33	14-Dec-20 A	23-Jan-21 A	Excavation Stage 1 - below strut S1		
	Strut S1 installation (5 nos)	0			0	06-Feb-21 A	19-Feb-21 A	Strut \$1 installation (5 nos)		
	Excavation to S3 - 3,600m <sup>3</sup>	0			19	24-Feb-21 A	17-Mar-21 A	Excavation to S3 - 3,600m <sup>3</sup>		
	Strut S3 installation (5 nos)	0			7	18-Mar-21 A	25-Mar-21 A	Strut \$3 installation (5 nps)		
	Excavation Stage 3 - FEL	0			9	26-Mar-21 A	10-Apr-21 A	Excavation Stage 3 - FEL		
	6045 - 6080)	0			109	01-Dec-20 A	17-Apr-21 A	<u> </u>		
	Excavation Stage 1 - below strut S1	0			63	01-Dec-20 A	18-Feb-21 A	Excavation Stage 1 - below strut \$1		
	Strut S1 installation (4 nos)	0			5	19-Feb-21 A	24-Feb-21 A	Ştrut S1 installation (4 nos)		
	Excavation to S3	0			9	08-Mar-21 A	17-Mar-21 A	Excavation to S3		
A229420150	Strut S3 installation (4 nos)	0			9	26-Mar-21 A	10-Apr-21 A	Strut S3 installation (4 nos)		
A229420160	Excavation to FEL	0			6	12-Apr-21 A	17-Apr-21 A	Excavation to FEL		
Zone 3 (Ch	6080 - 6121)	0			127	07-Dec-20 A	15-May-21			
A229426611	Excavation Stage 1 - below strut S1	0			47	07-Dec-20 A	02-Feb-21 A	Excavation Stage 1 - below strut S1		
A229420180	Strut S1 installation (4 nos)	0			5	02-Feb-21 A	06-Feb-21 A	Strut S1 installation (4 nos)		
A229420210	Excv to below S2	0			18	22-Feb-21 A	13-Mar-21 A	Excy to below S2		
A229426070	Strut S2 installation (4 nos)	0			9	22-Mar-21 A	31-Mar-21 A	\$trut \$2 installation (4 nds)		
A229420170	Excavation to S3	0			6	13-Apr-21 A	20-Apr-21 A	Excavation to 53		
	Strut S3 Installation (4 nos)	0			16	19-Apr-21 A	07-May-21	Stru	ut S3 Installation (4 nos)	
	Excv to FEL	0			7	08-May-21	15-May-21		Excy to FEL	
Zone 4 (Ch	6121 - 6150)	0			121	26-Dec-20 A	28-May-21			
Page 16 of 2	5 ♦ Milestone ▼ Summary									cked Approved
Data Date: 0	1-May-21 Planned Bar	F	D/201	8/04 T	run	k Road	T2 and	Infrastructure Works		
	for Developments at South Apron    Actual Milestone   Actual Milestone   Critical Addivity   Actual Milestone   Critical Addivity   Actual Milestone   Actual Milesto									
	Actual Work			TOT L	Jeν	eiopme	nis at S	outh Apron  TRAVAUX PUBLICS  122-Fel 109-Ap		
	♦ Baseline Milestone						_	47.14		
	Baseline Bar		Th	ree Mo	onth	าร Rollir	ng Prog	amme (Apr-21)		
								, ,	1 1	ı



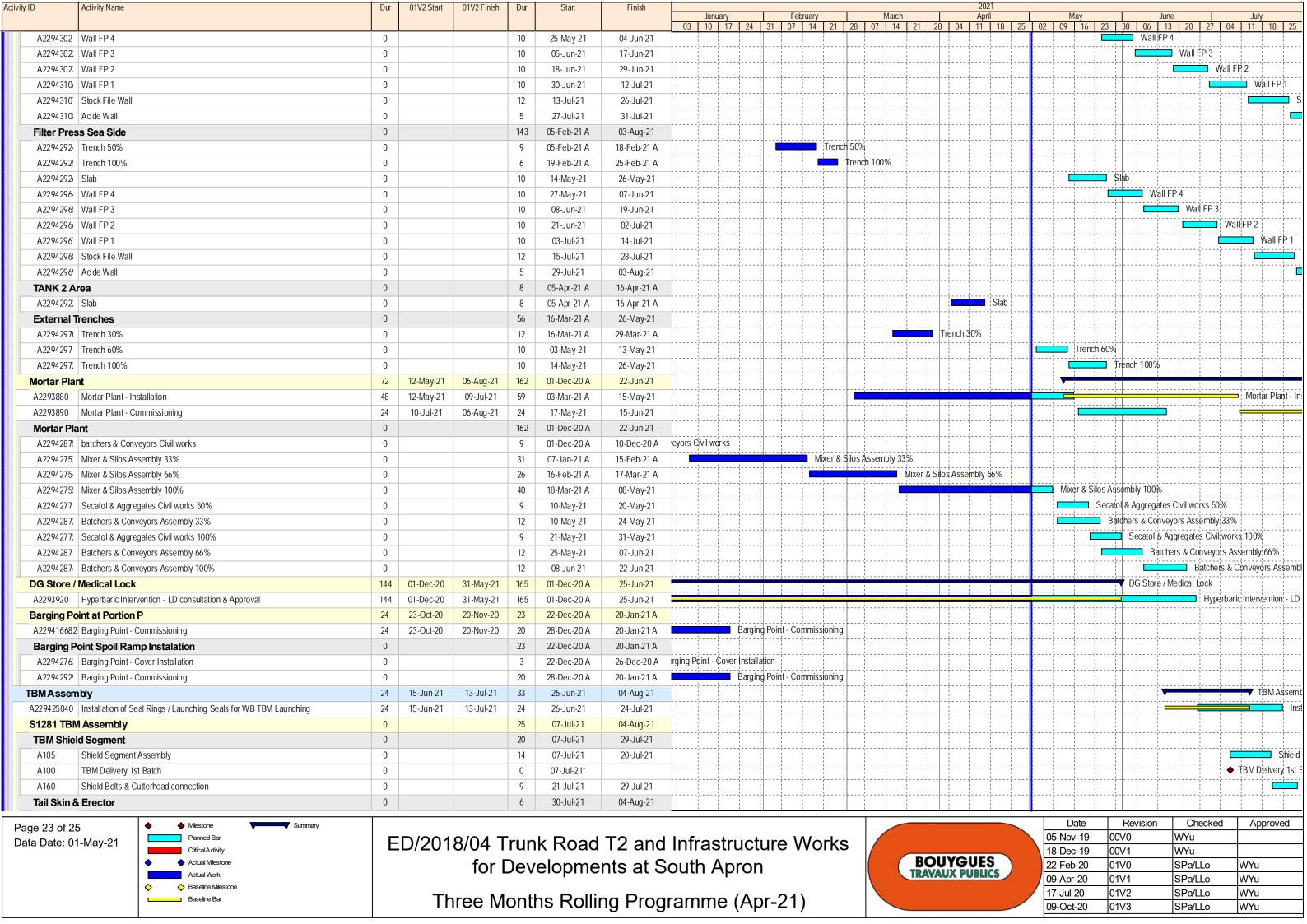
Activity ID	Activity Name	Dur	01V2 Start	01V2 Finish	Dur	Start	Finish	lanuari   Calminari	2021
								January   February	March   April   May   June   July   8   07   14   21   28   04   11   18   25   02   09   16   23   30   06   13   20   27   04   11   18   2
A229420449	Blinding & Waterproofing	0			9	17-May-21	27-May-21		Blinding & Waterproofing
A229420450	Base Slab	0			15	28-May-21	15-Jun-21		Base Slab
	Strut S3 removal	0			6	16-Jun-21	22-Jun-21		Strut S3 removal
A229420470	South Apron Adit Wall	0			21	23-Jun-21	17-Jul-21		South A
	South Apron Adit Wall	0			21	23-Jun-21	17-Jul-21		South A
A2294430		0			12	19-Jul-21	31-Jul-21		
	Drainage Works	0			10	20-Jul-21	30-Jul-21		
	6121 - 6150)	0			60	29-May-21	09-Aug-21		
A2294480	0	0			9	29-May-21	08-Jun-21		Blinding
		0			9	09-Jun-21	19-Jun-21		Base Slab Ch6140 - Ch6150
A229425980		0			3	21-Jun-21	23-Jun-21		□ \$tut\$4
	Strut S4 removal	0			4	21-Jun-21	24-Jun-21		□ Strut \$4 removal
	Base Slab part 2	0			12	24-Jun-21	08-Jul-21		Base Slab part
	Base Slab Ch6121 - Ch6140	0			12	25-Jun-21	09-Jul-21		Base Slab Ch
	Strut S3 removal	0			6	09-Jul-21	15-Jul-21		Strut \$3
	Strut S3 removal	0			6	10-Jul-21	16-Jul-21		Strut, S3
	South Apron Adit Wall	0			21	16-Jul-21	09-Aug-21		
	NTILATION BUILDING [WVB]	146	03-Dec-20	04-Jun-21	226	04-Jan-21 A	08-Oct-21		▼ WEST VENTILATION BUILDING [WVB]
ELS systen	a & Foundation	146	03-Dec-20	04-Jun-21	226	04-Jan-21 A	08-Oct-21		▼ ELS system & Foundation
A9650	WVB - Sheet Piles Installation 50% completion	48	03-Dec-20	30-Jan-21	55	04-Jan-21 A	11-Mar-21 A		WVB Sheet Piles Installation 50% completion
A96501	WVB - Sheet Piles Installation 100% completion	48	01-Feb-21	31-Mar-21	86	12-Mar-21 A	28-Jun-21		WVB - Sheet Piles Insta
A9640	WVB - H-piles Drilling / Installation / Grouting 50% completion	66	19-Dec-20	12-Mar-21	66	03-May-21	21-Jul-21		<del></del>
A96401	WVB - H-piles Drilling / Installation / Grouting 100% completion	66	13-Mar-21	04-Jun-21	66	22-Jul-21	08-Oct-21		
ELS Systen	1	0			83	19-Mar-21 A	02-Jul-21		
ELS Syste	m	0			83	19-Mar-21 A	02-Jul-21		
	Installation	0			49	19-Mar-21 A	21-May-21		
	North West Face connection welding	0			7	19-Mar-21 A	26-Mar-21 A		North West Face connection welding
	3rd layer North West Face	0			34	27-Mar-21 A	11-May-21		3rd layer North West Face
	South West Face connection welding	0			10	31-Mar-21 A	15-Apr-21 A		South West Face connection welding
A2294308	3rd layer South West Face	0			32	13-Apr-21 A	21-May-21	<b>.</b>	3rd layer South West Face
A2294308	, ,	0			29	16-Apr-21 A	21-May-21	<b>.</b>	3rd layer North East Face
A2294309	9	0			13	16-Apr-21 A	30-Apr-21 A		North East Face connection welding
A2294309	South East Face connection welding	0			19	17-Apr-21 A	10-May-21		South East Face connection welding
A2294308	South East Face	0			26	19-Apr-21 A	20-May-21		South East Face
North		0			55	29-Mar-21 A	07-Jun-21		
KP1000	Rig Mobilization & Setup	0			3	29-Mar-21 A	31-Mar-21 A		Rig Mobiliza in a Setup
KP1001	KP Drilling (KP3 & KP4) @ 2d/no	0			1	01-Apr-21 A	06-Apr-21 A		KP Drilling (KP3 & KP4) @ 2d/no
KP1004	KP Drilling (KP1 & KP2) @ 2d/no	0			3	13-Apr-21 A	15-Apr-21 A	<del> </del>	■ KP Drilling (KP1 & KP2) @ 2d/no
KP1007	KP Drilling (KP9 & KP10) @ 2d/no	0			4	15-Apr-21 A	19-Apr-21 A		KP Drilling (KP9 & KP10) @ 2d/no
KP1002	KP Installation & Grouting (KP3 & KP4) @ 2d/no	0			4	07-May-21	11-May-21	<del> </del>	KP Installation & Grouting (KP3 & KP4) @ 2d/no
KP1003	Pumping Well Installation - 6 nos x 2 rigs (Zone 3)	0			6	12-May-21	18-May-21	<del> </del>	Pumping   Well   Installation   6 nos x 2 rigs (Zone 3)
KP1005	KP Installation & Grouting (KP1 & KP2) @ 2d/no	0			4	12-May-21	15-May-21	<del> </del>	KP Installation & Grouting (KP1 & KP2) @ 2d/no
KP1008	KP Installation & Grouting (KP9 & KP10) @ 2d/no	0			4	17-May-21	21-May-21	<del> </del>	KP Installation & Grouting (KP9 & KP10) @ 2d/no
KP1006	Pumping Well Installation - 6 nos x 2 rigs (Zone 1)	0			0	24-May-21	29-May-21	<del> </del>	Pumping Well Installation - 6 nos x; 2 rigs (Zone 1)
KP10081	Pumping Well Installation - 7 nos x 2 rigs (Zone 2)	0			63	31-May-21 07 Apr 21 A	07-Jun-21	<del> </del>	Pýmping Well Installation -7 nos x 2 rígs (
South KP1009	KP Drilling (KP5 & KP6) @ 2d/no	0			03 E	07-Apr-21 A 07-Apr-21 A	22-Jun-21 12-Apr-21 A	<del> </del>	KP Drilling (KP5 & KP6) @ 2d/no
		0			) /	<u>'</u>		<del> </del>	KP Diffiling (KP3 & KP6) @ 2d/ho  KP Installation & Grputing (KP5 & KP6) @ 2d/ho
KP1010 KP10101	KP Installation & Grouting (KP5 & KP6) @ 2d/no				4	03-May-21	06-May-21	<del> </del>	Pumping Well Installation - 3 nos x 2 rigs (Zone 6)
	Pumping Well Installation - 3 nos x 2 rigs (Zone 6)	0			э л	20-May-21	22-May-21	<del> </del>	□ Pumping (Ven installation - 3 flos x 2 figs (20fle o)      □ KP Drilling (KP11 & KP12) @ 2d/no
KP10102	KP Drilling (KP11 & KP12) @ 2d/no	0			4	08-Jun-21	11-Jun-21		
Page 18 of 2	BI 18								Date Revision Checked Approved
Data Date: 0	Data Date: 01-May-21  Data Date: 01-May-21								
	♦ ♦ Actual Milestone for Developments at South Apron								
	Actual Work			IOI L	\ <b>C</b> \	ciohilie	iiio al O	outil Aproli	TRAVAUX PUBLICS  09-Apr-20  01V1  SPa/LLo  WYu
	♦ Baseline Milestone		<del></del> .		11	- D "	D.	(1)	17-Jul-20 01V2 SPa/LLo WYu
	Baseline Bar		۱r	iree Mo	onth	ns Kollir	ng Prog	ramme (Apr-21)	09-Oct-20 01V3 SPa/LLo WYu
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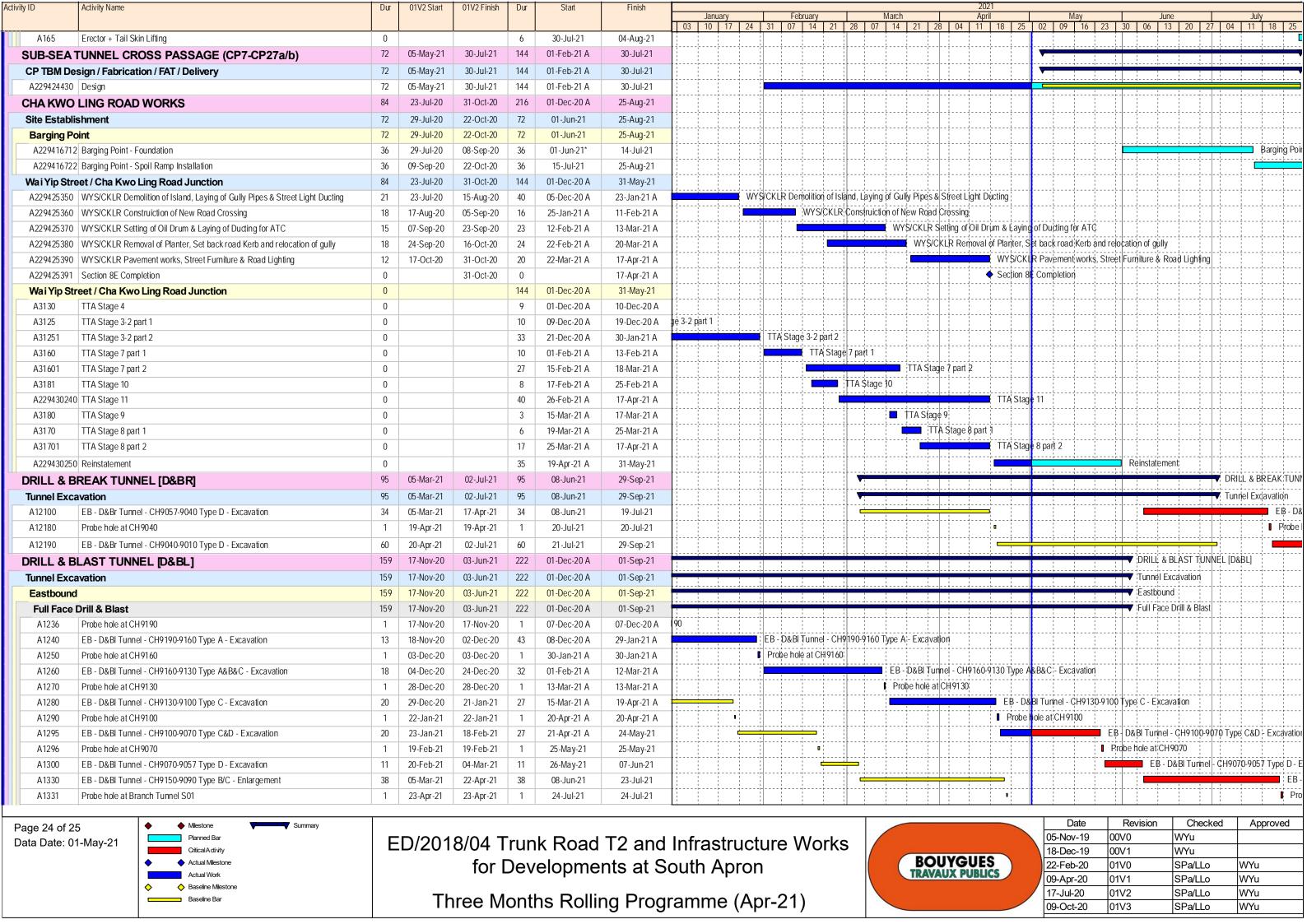


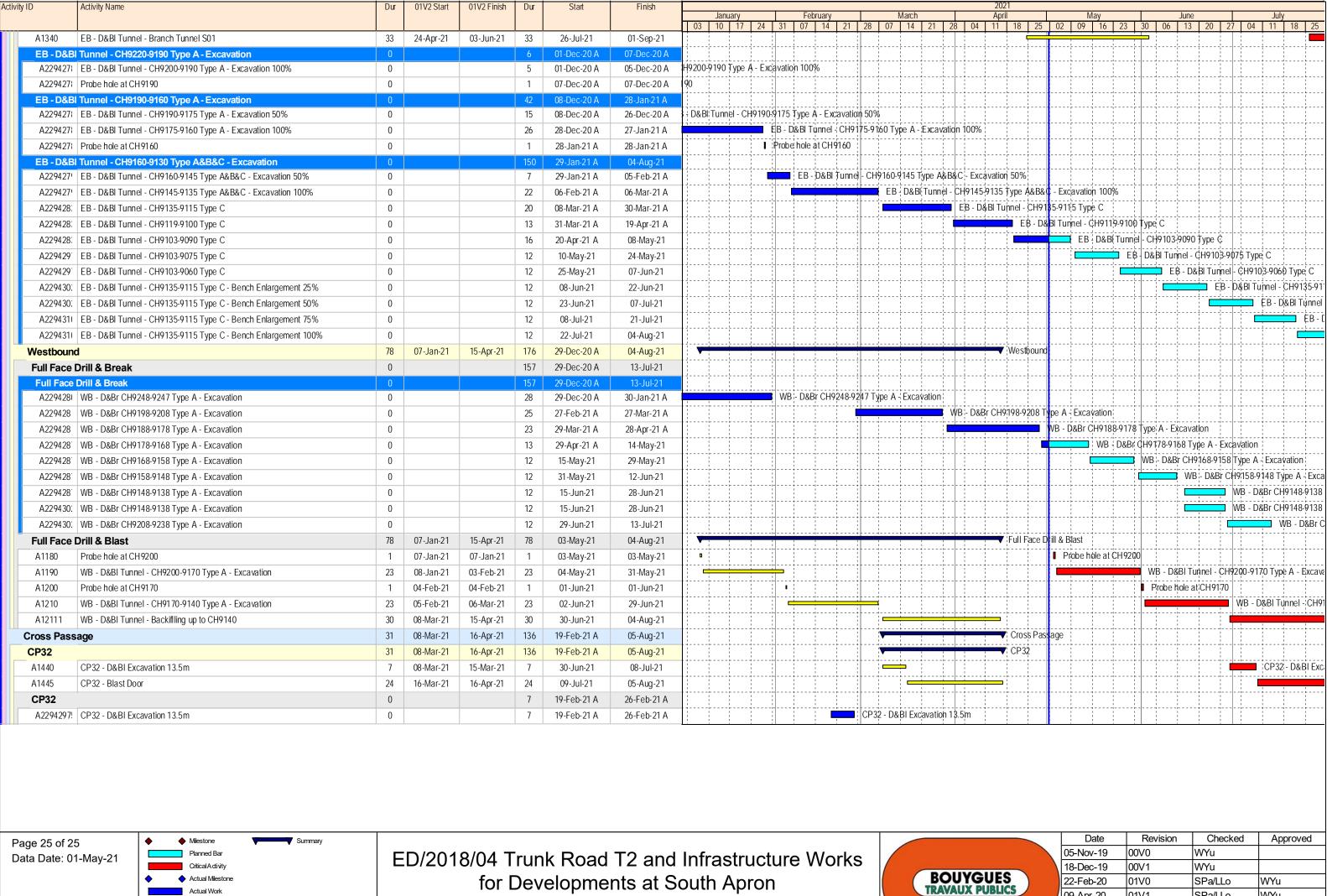
Activity ID		Activity Name	Dur	01V2 Start	01V2 Finish Dur	Start	Finish	2021  January February March April	Mav		June		Julv
	1111011	5 4 4 4 6 4 5 4444				00.5		03 10 17 24 31 07 14 21 28 07 14 21 28 04 11 18 25	02 09 16	23 30 0	6 13 20	27 0	4 11 18 25
		Formworks erection of Gantry Beam (WKK)	0		4	28-Dec-20		Formworks erection of Gantry Beam (WKK)					
	Overall	Pour 2 Concreting (WKK)	0		2	02-Jan-21 a		■ Pour 2 Concreting (WKK)					
		Pour 2 Formworks removal & CJ Cleaning (WKK & BTP)	0		1	02-Jan-21		Pour 2 Formworks removal & CJ Cleaning (WKK & BTP)					
		pping Beam & Strutting Slab S1) Part 2	0		14	05-Jan-21		From 210 mworks telliovar & C3 Cleaning (WKK & B1F)					
	South	pping beam & Struming Stab ST) Fait 2	0		2	05-Jan-21 <i>i</i>							
		ELS Removal at Zone C (DARWIN)	0		2	05-Jan-21		■ £LS Removal at Zone C (DARWIN)					
	Overall		0			06-Jan-21							
		Blinding Conrete (WKK)	0		2	06-Jan-21		■ Blinding Cohrete (WKK)					
	A229428	Backfilling & Formation	0		2	08-Jan-21	A 09-Jan-21 A	■ Backfilling & Formation					
		Steel Fixing Pour 3 (BP)	0		4	11-Jan-21	A 14-Jan-21 A	Steel Fixing Pour 3 (BP)					
		Pour 3 Concreting (WKK)	0		1	15-Jan-21	A 15-Jan-21 A	Pour 3 Concreting (WKK)					
		Concrete Strength Gain	0		3	16-Jan-21		Concrete Strength Gain					
		Cut & Cover Bulk Excavation Start	0		0	21-Jan-21		◆ Cut & Cover Bulk Excavation Start		<del></del>			
C		er Bulk Excavation	0		140	21-Jan-21				<del></del>			
		Excavation to below S2	0		15	21-Jan-21		Excavation to below S2		<del></del>			
		Strut S2 Construction	0		9	05-Feb-21		Strut S2 Construction		<del>  - </del>			
		Excavation to below S3	0		8	16-Feb-21		Excavation to below S3					
		Strut S3 Construction	0		10	24-Feb-21		Strut S3 Construction				-	
		Excavation to below S4	0		10	09-Mar-21		Excavation to below S4					
		Permanent Strutting Slab S4	0		20	20-Mar-21			Strutting Slab S4				
		Excavation to below S5	0		15	20-Apr-21	· ·		Excavation			-	
		Steel Strut S5	0		10	08-May-21	-		<b>.</b>	Steel Strut \$5			
		Excavation to below S6	0		9	21-May-21	-	<del> </del>			/ation to below	, S6	
		Steel Strut S6	0		10	01-Jun-21		<del> </del>			■ Steel Stru		
		Excavation to FEL	0		9	12-Jun-21		<del> </del>				Excavatio	on to FEL
		Barrette Trimming	0		9	24-Jun-21		<del> </del>					Barrette Trimming
		Base Slab Construction 50%	0		9	06-Jul-21		<del> </del>					Base Slab
		Shaft ELS	0		142	02-Dec-20		<del> </del>			<del> </del> <del> </del>		
	apping Be		0		59	02-Dec-20	-						
	Cell 2		0		49	02-Dec-20							
	Pour 4 (Sc	outh)	0		17	25-Dec-20	A 16-Jan-21 A				·;		;;
	A229429	ELS Wailing & Struts for Pour 4,5 & 6	0		3	25-Dec-20	A 30-Dec-20 A	ELS Wailing & Struts for Pour 4,5 & 6					
	A113311	Dwall Breaking	0		6	31-Dec-20	A 07-Jan-21 A	Dwall Breaking					
	A113321	Trimming	0		2	08-Jan-21	A 09-Jan-21 A	■ Trimming					
	A113331	Blinding concrete	0		1	09-Jan-21	A 09-Jan-21 A	■ Blinding concrete					
	A113341	Steel Fixing	0		3	11-Jan-21	A 13-Jan-21 A	■ Steel Fixing					
	A113351	Formworks Erection	0		2	14-Jan-21	A 15-Jan-21 A	■ Formworks Erection					
	A229428	Concrete	0		1	16-Jan-21	A 16-Jan-21 A	■ Concrete					
	Pour 5 (No	orth)											
	A229428	Excavation & GW Breaking	0		18	02-Dec-20	A 22-Dec-20 A	ation & GW Breaking					
		Dwall Breaking / Trimming	0		6	23-Dec-20	A 31-Dec-20 A	Dwall Breaking / Trimming					
		Blinding concrete	0		1	02-Jan-21	A 02-Jan-21 A	Blinding concrete					
		Steel Fixing	0		4	04-Jan-21	A 07-Jan-21 A	Steel Fixing:					
	A229429	Formworks Erection	0		2	07-Jan-21	A 08-Jan-21 A	■ Formworks Erection					
	A229428	Concrete	0		1	09-Jan-21	A 09-Jan-21 A	Il Concrete					
		am South	0		25	02-Jan-21							
		Dwall Breaking / Trimming	0		12	02-Jan-21		Dwa   Breaking / Trimming	<b>[</b>	ļļ. ļ.		.   .   .	
		Hand Trimming & Blinding	0		3	16-Jan-21		Hand Trimming & Blinding	ļļ	ļļ.ļļ			
		Steel Fixing	0		4	20-Jan-21		Stee Fixing	<b>[</b>	ļļ. j		. j   .	
	A113981	Formworks Erection	0		3	25-Jan-21	27-Jan-21 A	Formworks Erection			1 1		
Page	20 of 25	♦ Milestone Summary							Date	Revis	on Cl	necked	Approved
_	Data Date: 01-May-21 Planned Bar FD/2018/04 Trunk Pood T2 and Infrastructure Works 05-Nov-19 0000 WYu												
		CriticalAdivity	-	J, <u>L</u> U I					18-Dec-19	00V1	WYu		1407
		◆ Actual Milestone  Actual Work			tor Dev	/elopm	ients at S	outh Apron  BOUYGUES TRAVAUX PUBLICS	22-Feb-20	01V0 01V1	SPa/		WYu
		♦ Baseline Milestone										WYu WYu	
												116	
		Baseline Bar		Th	ree Mont	hs Ro	llina Proc	ramme (Apr-21)	09-Oct-20	01V2 01V3	SPa/ SPa/		WYu



Activity ID Act	tivity Name	Dur	01V2 Start	01V2 Finish	Dur	Start	Finish	2021	
								January February March April May June July  103   10   17   24   31   07   14   21   28   07   14   21   28   04   11   18   25   02   09   16   23   30   06   13   20   27   04   11   18   18   18   19   19   19   19	
A2294296 Tyl	mpanum Pour 1	0			12	10-Jun-21	24-Jun-21	Tympanum Pour 1	
A2294301ı Tyı	mpanum Pour 2	0			6	25-Jun-21	02-Jul-21	Tympanum Pour	
A2294301 Tyl	mpanum Pour 3	0			10	03-Jul-21	14-Jul-21	Tympa	
A22943011 Tyl	mpanum Pour 4	0			10	15-Jul-21	26-Jul-21		
A2294301' Tyl	mpanum Pour 5	0			10	27-Jul-21	06-Aug-21		
SUB-SEA TBI	M TUNNEL - WESTBOUND	315	23-Oct-20	15-Nov-21	210	01-Dec-20 A	18-Aug-21		
Precast Fabric	ation	180	12-Apr-21	15-Nov-21	193	21-Dec-20 A	18-Aug-21		
TBM Precast	Segments	180	12-Apr-21	15-Nov-21	193	21-Dec-20 A	18-Aug-21		
A9440-020 Pre	ecast TBM Segment - 10%	36	12-Apr-21	25-May-21	20	21-Dec-20 A	15-Jan-21 A	Precast TBM Segment - 10%	
A9440-030 Pre	ecast TBM Segment - 20%	36	26-May-21	08-Jul-21	58	16-Jan-21 A	27-Mar-21 A	Precast TBN	
A9440-040 Pre	ecast TBM Segment - 30%	36	09-Jul-21	19-Aug-21	43	29-Mar-21 A	24-May-21		
A9440-050 Pre	ecast TBM Segment - 40%	36	20-Aug-21	02-Oct-21	36	25-May-21	07-Jul-21		
A9440-060 Pre	ecast TBM Segment - 50%	36	04-Oct-21	15-Nov-21	36	08-Jul-21	18-Aug-21		
Site Establishn	ment	256	23-Oct-20	03-Sep-21	204	01-Dec-20 A	11-Aug-21		
Precast Eleme	ents Storage Yard	0			108	22-Mar-21 A	03-Aug-21		
Segment Yar	d	0			108	22-Mar-21 A	03-Aug-21		
	undation civil works part 1	0			36	22-Mar-21 A	07-May-21	Foundation civil works part 1	
	C Beam & Rail Installation 50% part 1	0			12	08-May-21	22-May-21	RC Beam & Rail Installation 50% part 1	
A2294290 RC	C Beam & Rail Installation 100% part 1	0			12	24-May-21	05-Jun-21	RC Beam & Rail Installation 100% part 1	
A2294290i Ga	antry Crane Assembly part 1 50%	0			12	07-Jun-21	21-Jun-21	Gantry ¢rane Assembly pa	
A2294290' Ga	antry Crane Assembly part 1 100%	0			12	22-Jun-21	06-Jul-21	Gantry Crane	
A2294309! For	undation civil works part 2	0			12	07-Jul-21*	20-Jul-21		
A2294309i RC	C Beam & Rail Installation 50% part 2	0			12	21-Jul-21	03-Aug-21		
Gantry Crane	Setup for TBM Assembly	66	13-Apr-21	02-Jul-21	54	03-May-21	07-Jul-21	▼ Gantry Crane Se	
A229020 Ga	antry Crane - Ground Beam Construction	24	13-Apr-21	11-May-21	24	03-May-21*	31-May-21	Gantry Grane Ground Beam Construction	
A229030 Ga	antry Crane - Delivery & Assembly	36	12-May-21	24-Jun-21	24	01-Jun-21	29-Jun-21	Gantry Cranei- Deliv	
A229040 Ga	antry Crane - Commissioning & Load Test	6	25-Jun-21	02-Jul-21	6	30-Jun-21	07-Jul-21	Gantry Crane	
Slurry Treatm	ent Plant	96	12-May-21	03-Sep-21	160	25-Jan-21 A	11-Aug-21		
A6930 SIL	urry Treatment Plant - Civil works	36	12-May-21	24-Jun-21	82	18-Feb-21 A	31-May-21	Slurry, Treatment Plant	
A6940 SIL	urry Treatment Plant - Delivery & Assembly	24	10-Jun-21	09-Jul-21	24	17-May-21	15-Jun-21	Slurry Trea	
A6945 SIL	urry Treatment Plant - Installation	48	10-Jul-21	03-Sep-21	48	16-Jun-21	11-Aug-21		
Desanding A	rea	0			48	25-Jan-21 A	24-Mar-21 A		
A2294291 Tre		0			10	25-Jan-21 A	04-Feb-21 A	Trench	
A2294291: Sla		0			10	18-Feb-21 A	01-Mar-21 A	Slab	
	esanding Area 1 Wall 25%	0			17	02-Mar-21 A	20-Mar-21 A	Desanding Area 1 Wall 25%	
	esanding Area 1 Wall 50%	0			17	02-Mar-21 A	20-Mar-21 A	Desanding Area 1 Wall 50%	
	esanding Area 1 Wall 75%	0			15	08-Mar-21 A	24-Mar-21 A	Desanding Area 1 Wall 75%	
	esanding Area 1 Wall 100%	0			15	08-Mar-21 A	24-Mar-21 A	Desanding Area 1 Wall 100%	
Water Treatm		0			37	22-Mar-21 A	08-May-21	<u> </u>	
A22942911 Sla		0			10	22-Mar-21 A	07-Apr-21 A	Slab	
	nk Assembly part 1	0			6	03-May-21*	08-May-21	Tank Assembly part 1	
TANK 1 Area		0			22	03-May-21	28-May-21	<u> </u>	
A2294292: Sla		0			10	03-May-21	13-May-21	;Slab	
	nk Assembly part 1	0			12	14-May-21	28-May-21	Tank Assembly part 1	
Filter Press E	<del>-</del>	0			119	06-Mar-21 A	31-Jul-21	Trong F00/	
A2294291' Tre		0			5	06-Mar-21 A	11-Mar-21 A	Trench 100%	
A22942921 Tre		0			3	12-Mar-21 A	15-Mar-21 A	Trench 100%	
A2294292 Sla		0			4	13-Apr-21 A	17-Apr-21 A	Slab	
A2294296: Wa		0			19	19-Apr-21 A	11-May-21	Wall FP 6	
A2294296: Wa	ali FY 5	0			10	12-May-21	24-May-21	Wall FP5	
Page 22 of 25	♦ Milestone ▼ Summary							Date Revision Checked Approve	
Data Date: 01-M	Data Date: 01-May-21 Planned Bar FD/2018/04 Trunk Road T2 and Infrastructure Works								
	Critical Activity  Actual Work  Critical Activity  Actual Work  Critical Activity  Actual Work  Critical Activity  Actual Work  For Developments at South Apron  TRAVAUX PUBLICS  TRAVAUX PUBLICS								
	♦ Baseline Milestone		<del></del>		4.		5	47 14 00 004 0 007 14 1 1406	
	Baseline Bar		۱h	ree Mo	ontl	ns Kollii	ng Prog	gramme (Apr-21)	
		1							







Three Months Rolling Programme (Apr-21)

