



俊和-中國中鐵-中鐵大橋局聯營
CHUN WO - CRGL - MBEC JOINT VENTURE

Your reference :

Our reference : CWCRMBJV/610/26848-2019

28 May 2019

Environmental Protection Department
The EIA Ordinance Register Office
27/F Southorn Centre
130 Hennessy Road
Wan Chai, Hong Kong

Attn: Mr. Billy Ma – Environmental Protection Officer

Dear Mr. Ma,

Contract No. HY/2009/19
Central – Wan Chai Bypass – Tunnel (North Point Section) and Island Eastern Corridor Link
Revised Noise Management Plan (Rev. 5)

Please ignore our previous submission of the captioned Plan (our ref: CWCRMBJV/610/26786-2019 dated 8 May 2019).

Pursuant to the FEP-07/364/2009/F Part C Special Conditions Clause 2.9, we are pleased to submit herewith the following documents for your review and approval.

1. Noise Management Plan – Revision 5 (Four hard copies and one electronic copy);
2. Letter of Certification from Environmental Team (Lam Geotechnics Limited); and
3. Letter of Verification from Independent Environmental Checker (RAMBOLL).

Should you have any query, please do not hesitate to contact our Mr. M.H. Isa at 9884 0810 or 3757 8218.

Please note our fax number is 3757 8901.

Thank you for your attention.

...../P.2



俊和-中國中鐵-中鐵大橋局聯營
CHUN WO - CRGL - MBEC JOINT VENTURE

Your reference :

CWCRMBJV/610/26848-2019

Our reference :

28 May 2019

Yours sincerely,
For and on behalf of
Chun Wo – CRGL – MBEC Joint Venture

William Luk
Site Agent

Encl.

c.c.	HyD	-	Mr. Patrick Lai] w/e
	AECOM (H.O.)	-	Mr. Alex Li] w/e
	AECOM (CRE)	-	Mr. S.K. Lo] w/e
	RAMBOLL – IEC	-	Mr. David Yeung] w/e
	Lam – ET Leader	-	Mr. Raymond Dai] w/e
	Head Office] w/e

WL/ISA/wl

Ref.: AACWBIECEM00_0_11332L.19

27 May 2019

Chun Wo – CRGL – MBEC Joint Venture
C2, 5/F, Hong Kong Spinners Industrial Building
601-603 Tai Nan West Street
Cheung Sha Wan
Kowloon, Hong Kong

By Post and Fax (2570 8013)

Attention: Mr. William Luk

Dear Sir,

Re: Contract No. HY/2009/19
Central – Wan Chai Bypass – Tunnel (North Point Section)
and Island Eastern Corridor Link
Construction Noise Management Plan (Revision 5)

Reference is made to your submission of the Construction Noise Management Plan (Revision 5 dated 24 May 2019) to us through e-mail on 27 May 2019 for our review and comment.

Please be informed that we have no adverse comments on the captioned submission. We write to verify it in accordance with Condition 2.9 of FEP-07/364/2009/F.

Thank you for your kind attention.

Yours sincerely,



David Yeung
Independent Environmental Checker

c.c.	HyD	Mr. Tong Cheung	by fax: 2714 5289
	CEDD	Mr. Lee Hon	by fax: 2301 1277
	AECOM	Mr. S.K. Lo	by fax: 3912 3010
	AECOM	Mr. Frankie Fan	by fax: 2691 2649
	AECOM	Ms. Gloria Tang	by fax: 2587 1877
	LAM	Mr. Raymond Dai	by fax: 2882 3331

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Lam Geotechnics Limited

Ground Investigation & Instrumentation Professionals

華益土力有限公司

Ref : G1525/CS/L1048/FEP-07/364/2009/F
Date : 27 May 2019

Chun Wo - CRGL - MBEC Joint Venture
C2, 5/F,
Hong Kong Spinners Industrial Building,
601-603 Tai Nan West Street,
Cheung Sha Wan,
Kowloon, Hong Kong

By Post and Fax (2570-8013)

Attn: Mr. William Luk, Site Agent

Dear William,

Contract No. HY/2009/19
Central – WanChai Bypass Tunnel
(North Point Section) and Island Eastern Corridor Link
Noise Management Plan (Rev. 5)

Referring to the captioned information dated 24 May 2019 received through email on 27 May 2019, we have reviewed your submitted details and hereby certify the submission in accordance with Condition 2.9 of FEP-07/364/2009/F.

Please be reminded that the certification of the captioned updated Noise Management Plan submission does not absolve any person/party from any requirement or obligation under FEP-07/364/2009/F, EP-364/2009/F and EP-482/2013/A. As per the general conditions under these 3 EPs, we would like to remind that *“The Permit Holder and any person working on the Project shall comply with all conditions set out in this Permit. Any non-compliance by any person may constitute a contravention of the Environmental Impact Assessment Ordinance (EIAO) (Cap.499) and may become the subject of appropriate action being taken under the Ordinance.”*

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

Yours faithfully,

Raymond Dai
Environmental Team Leader

c.c.

HyD	- Mr. Tony Cheung	(By Fax: 2714-5289)
CEDD	- Mr. Lee Hon	(By Fax: 2301-1277)
AECOM	- Mr. S. K. Lo	(By Fax: 3912-3010)
AECOM	- Ms. Gloria Tang	(By Fax: 2587-1877)
Ramboll	- Mr. David Yeung	(By Fax: 3548-2899)






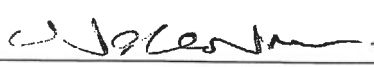
俊和-中國中鐵-中鐵大橋局聯營
CHUN WO - CRGL - MBEC JOINT VENTURE

CONTRACT HY/2009/19

CENTRAL – WAN CHAI BYPASS – TUNNEL (NORTH POINT SECTION)
AND
ISLAND EASTERN CORRIDOR LINK

Construction Noise Management Plan

(Pursuant to the Further Environmental Permit - No. FEP-07/364/2009/F)

Rev	5	Prepared and Reviewed By	Approved By:
Date	24 May 2019		
Name		M.H. Isa	William Luk
Designation		Environmental Officer	Site Agent

REGISTRY OF NOISE MANAGEMENT PLAN AMENDED

Rev. No.	Amendment Date	Amendment Section	Content	Amended by
0	18 Mar 2011	All	Initial Revision incorporated ET and ICE comment	Simon Wong
1	12 Sep 2011	Appendix E	Construction Works Programme	M.H. Isa
		Sections 8.0,10.0,11.0	Responses to comments (1) received from EPD	
2	25 Oct 2011	Section 8.2	Movable / Temporary Noise Barrier	M.H. Isa
3	13 Mar 2013	Section 8.2	Movable / Temporary Noise Barrier	M.H. Isa
		Section 11	Conclusion	
		Appendix G	Schedule for the Installation of Noise Barrier	
		Appendix H	Specification of Noise Absorptive Material	
		Appendix I	Minutes of Meeting – Harbour Grand HK Hotel	
		Appendix J	Contract HY/2009/17 – FEHD Basement & Ground Floor Layout Plan	
4	13 Feb 2016	Section 1.0	Purpose of this Plan	M.H. Isa
		Section 8.1	Restriction on the use of Pneumatic Breaker	
		Section 8.2	Temporary Noise Barrier	
		Appendix C	Plan and Sectional View of Typical Noise Barrier during Construction Phase	
		Appendix D	Mitigation measures for the items of PME in each construction tasks	
		Appendix E	Specification of Noise Absorptive Material	
		Appendix F	Site Layout Plan	
4	05 Aug 2017	Section 8.2.1	Temporary Noise Barrier – Harbour Grand HK Hotel	M.H. Isa
		Appendix B	Figure 2: Location Plan of Temporary Noise Barrier during Construction Phase in North Point Waterfront	
		Appendix F	Harbour Grand HK Hotel Correspondence	
		Appendix G	Environmental Review Report	
4	20 Nov 2017	All	Revised the whole document and renamed to Construction Noise Management Plan	M.H. Isa
5	06 May 2019	Section 8.6	Construction Stage after CWB Tunnel Commissioning	M.H. Isa



俊和-中國中鐵-中鐵大橋局聯營
CHUN WO - CRGL - MBEC JOINT VENTURE

Contract No. HY/2009/19
Central - Wan Chai Bypass – Tunnel (North Point Section)
and Island Eastern Corridor Link

Construction Noise Management Plan – Rev. 5

		Appendix H	Explanatory Notes on Incomplete Single Noise Semi-Enclosure Works of Westbound Bridges between Piers 17 and 22	
		Appendix I	Updated Noise Assessment of Cumulative Impact due to Construction work with Temporary Noise Mitigation Measures at Pier 17 to Pier 22	

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1.0 Purpose of this Plan

Pursuant to the Further Environmental Permit (No. **FEP-07/364/2009/F**), Part C, Special Condition, Clause 2.9, a Construction Noise Management Plan (NMP) is developed by Permit Holder (Chun Wo – CRGL - MBEC Joint Venture) to demonstrate clearly the management of construction noise generated in the execution of works for the Project. The mitigation measures specified in this NMP shall be implemented on site to reduce and/or minimise the construction noise impact on the public and nearest noise sensitive receivers.

The purpose of this Plan is to update the latest noise barrier arrangement with respect to the reviewed construction sequence and alternative arrangement on the demolition and construction of substructure for the Island Eastern Corridor (IEC).

2.0 Project Description

This Project “Contract No. HY/2009/19 Central - Wan Chai Bypass – Tunnel (North Point Section) and Island Eastern Corridor Link” (HY/2009/19) is part of the Central-Wan Chai Bypass (CWB) project, which shall provide relief to the existing congestion along the East-West corridor and cater for the anticipated growth of traffic on Hong Kong Island.

Scope of Works

The scope of the Project mainly includes:

- Construction of a 300-metre-long tunnel at North Point;
- Construction of an approach road to the tunnel;
- Modification of the section of Island Eastern Corridor between Hing Fat Street and Po Leung Kuk Yu Lee Mo Fan Memorial School;
- Modification of the junction of Victoria Park Road and Hing Fat Street;
- Demolition of Rumsey Street Flyover eastbound in Central;
- Sub-structure works of the East Ventilation Building and the foundation works of the Administration Building; and
- Associated works including landscaped deck, noise barriers, noise semi-enclosures, road drainage and landscaping works.

The site layout plan for the project is shown in Figure 6 in **Appendix E**.

3.0 Environmental Legislation, Policies, Plans, Standards and Criteria

Construction noise impacts have been assessed in accordance with methodology and the criteria given in the Technical Memoranda (TM) on Noise from Construction Works other than Percussive Piling (GW-TM) issued under the Noise Control Ordinance (NCO) and the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM) respectively.

The NCO provides the statutory framework for noise control of construction work other than percussive piling using Powered Mechanical Equipment (PME) between the hours of 1900 to 0700 or at any time on Sundays and a general holiday (i.e. restricted hours). Noise from construction activities in non-restricted hours is subject to the Criteria for evaluating Noise Impact stated in Table 1B of Annex 5 in the EIAO-TM. The noise criteria are 75dB(A) $L_{eq(30\text{ minutes})}$ at the facades of dwellings and 70 dB(A) $L_{eq(30\text{ minutes})}$ at the facades of schools (65dB(A) during examination). The construction noise criteria are summarized in Table 3-1.

Table 3-1: Daytime Construction Noise Criteria

Uses	Noise Level in Leq (30-minutes), dB(A)
Domestic Premises	75
Educational Institution	70
Educational Institution (during examination)	65

4.0 Noise Sensitive Receivers (NSRs)

In order to evaluate the construction noise impacts from the Project, representative existing NSRs of the Project have been identified in the EIA (AEIAR-125/2008), and are summarized in Table 4-1. The locations of the NSRs are shown in Figure 1 in **Appendix A**.

Table 4-1: Representative Existing Noise Sensitive Receivers

NSR	Section	Location	Use
N9	Tin Hau	Viking Garden	Residential
N10		Victoria Court	
N11		Mayson Garden	
N12		Gordon House	
N13		Belle House	
N14		Hoi Tao Building	
N15		Staff Quarters of FEHD	
N16		Victoria Centre	
N17		Harbour Heights	
N18		North Point	
N19	City Garden, Block 7		
N20	HK Baptist Church Henrietta Sec. School		
N21	Provident Centre, Blk 1		Residential

N22		Provident Centre, Blk 6	
N23		Provident Centre, Blk 17	
N24*		PLK Yu Lee Mo Fan Memorial School	Educational Institution

Note: * Not being identified as representative NSR in the EIA.

5.0 Identification of Noise Impacts

Potential noise impacts of the Project are likely arise from the following activities:

- Diaphragm wall and tunnel construction;
- Substructure and superstructure for landscape deck and connection of Island Eastern Corridor (IEC) Link;
- Demolition of superstructure, including the IEC structure; and
- Road formation, earth works and drainage culvert construction

6.0 Assessment Methodology

In accordance with the EIAO, the methodology outlined in the GW-TM has been used for the assessment of construction noise (excluding percussive piling). Sound Power Levels (SWLs) of the equipment were taken from Table 3 of this TM.

A negative correction of 10dB(A) was added to the calculated result if there is noise screening eliminating the line of sight from a NSR to the construction areas.

A positive correction of 3dB(A) was added to the calculated result in order to allow for façade reflection effect.

7.0 Prediction and Evaluation of Noise Impacts

In accordance with the approved EIA report (AEIAR-125/2008), exceedences of the construction noise-criteria as stated in Table 3-1 are predicted at representative NSRs in the absence of mitigation measures. A summary of the unmitigated construction noise levels of the representative NSRs during normal daytime working hours within the construction period of the Project is summarized in Table 7-1.

Table 7-1: Summary of Unmitigated Construction Noise Levels at Representative NSRs during Normal Daytime Working Hours

Representative NSRs	Predicted Unmitigated Construction Noise Levels during Normal Daytime Working Hour (L_{eq} (30-minutes) dB(A))
N11	57 – 101
N13	60 – 84
N15	66 – 88
N17	63 – 96

N18	62 – 98
N20 [#]	65 – 90
N22	64 - 79

Note: # For normal daytime working hours, the noise criteria are 70 dB(A) and 65 dB(A) for normal teaching periods and examination periods, respectively.

Noise mitigation measures should therefore be required to reduce construction noise impacts.

8.0 Mitigation of Adverse Environmental Impacts

In order to reduce the construction noise impacts on NSRs during normal daytime working hours, it is recommended that the following noise reduction measures shall be strictly implemented during the construction phase.

8.1 Restriction on the use of Pneumatic Breaker

At the planning stage it was anticipated that pneumatic breakers may be used for the demolition of the existing IEC and its restriction was laid down as below.

The use of pneumatic breakers, if required to demolish the existing IEC, shall be confined to the period from 0900 to 1700 hours on weekdays (Monday to Friday), and the pneumatic breakers shall not be used any time on Saturdays, Sundays and general holidays, and during examination hours of the schools affected by the works site, including:

- (1) HK Baptist Church Henrietta Secondary School;
- (2) PLK Yu Lee Mo Fan Memorial School

To ensure no pneumatic breakers shall be used during the examination period, CW-CRGL-MBEC JV shall:

- closely liaise with the schools to address their environmental concerns during the course of construction works;
- check the examination schedule and re-schedule the works during the examination period, where practicable, to avoid construction noise affecting the schools; and
- join the briefing sessions / visits held by the Highway Department or the Engineer to the schools to provide them more updating information about the upcoming construction activities of the Project.

8.2 Temporary Noise Barrier

Due to the latest construction sequence and alternative arrangement on the demolition and construction of substructure for the Island Eastern Corridor (IEC), different types of noise barriers will

be installed for particular items of powered mechanical equipment (including saw cutting / wire cutting machines) and construction works at the locations as shown in Figure 2 in **Appendix B**. These noise barriers shall be installed along the existing Island Eastern Corridor (IEC) during the demolition and construction of substructure for the IEC and construction of adjacent tunnel approach ramp structure, as shown in Figure 2 in **Appendix B**. Besides, temporary noise barriers shall be provided on temporary working platforms on piers or pile caps for the demolition works of existing piers and crossheads for the marine section of the existing IEC as shown in Figure 3 in **Appendix B**. The barrier material shall have a surface mass of not less than 14 kg/m² on skid footing with 25mm thick internal sound absorptive lining.

Movable noise barriers will be used for static plant, such as generator, air compressor and concrete pump and / or truck as well as Powered Mechanical Equipment (PME) such as crawler crane where appropriate. The barrier material shall have a surface mass of not less than 14 kg/m² with sound absorptive lining. We would exhaust all practicable mitigation measures as required in TM-EIAO in order to minimize the construction noise impact on nearby NSRs including the use of movable noise barriers. Plan and sectional view of movable noise barrier for static plants/PME to be adopted during the construction phase are shown in **Appendix C**.

Materials used for the construction of the noise barriers are given in **Appendix D**.

Detailed noise barrier arrangements are given in the Environmental Review Report (ERR) in **Appendix G**.

8.2.1 Movable Noise Barrier – for Harbour Grand Hong Kong Hotel (HGH)

In accordance with **Figure 2** of **FEP-07/364/2009/F**, during the demolition and construction of substructure for the Island Eastern Corridor (IEC) and in particular the location facing the HGH, movable noise barriers were installed. As of 26 April 2017, the above works had been completed and a portion of site area directly opposite to the HGH was subsequently handed back to the Hotel.

Subsequently, for the construction of the Approach Ramp we, Chun Wo – CRGL - MBEC Joint Venture, liaised with the HGH regarding the requirements of placing the movable noise barriers. HGH expressed objection to the installation of the movable noise barriers right in front of HGH as highlighted in Figure 2 of **Appendix B**. The relevant correspondence is attached in **Appendix F**.

HGH is the only NSR who might be potentially affected without the corresponding section of the movable noise barrier. However, as HGH is centrally air-conditioned fitted with double glazed well-gasketed windows and does not rely on open windows for ventilation. No adverse construction noise impact on HGH is anticipated even if the corresponding section of movable noise barrier is not

installed. In view of the objection of HGH, we propose not to install the above said section of the movable noise barriers. Nevertheless to minimize construction noise, scheduling of works will be discussed with the HGH during the construction of the Approach Ramp.

8.3 Quality Powered Mechanical Equipment (QPME)

The following types of QPME are proposed to be used during the construction phase of the Project:

- Bulldozer, wheeled
- Excavator, wheeled / tracked
- Loader, wheeled
- Road roller
- Power rammer (petrol)
- Crane, mobile
- Bulldozer, tracked
- Loader, tracked
- Asphalt paver
- Roller, vibratory
- Compactor, vibratory
- Generator

8.4 Good Site Practices

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

- Only well-maintained plant shall be operated on-site and plant shall be serviced regularly during the construction period;
- Silencers or mufflers on construction equipment shall be utilized and shall be properly maintained during the construction period;
- Mobile plant, if any, shall be sited as far away from NSRs as possible;
- Machines and plant (such as trucks) that may be in intermittent use must be shut down between works periods or shall be throttled down to a minimum;
- Plant known to emit noise strongly in one direction shall, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and
- Material stockpiles and other structures shall be effectively utilized, wherever practicable, in screening noise from on-site construction activities.
- The use of QPME as far as practicable
- Exhaust all practicable mitigation measures to minimize noise impact to the NSRs.

8.5 Multi-Phase Construction

Proactive planning of working sequences for multi-phase construction could minimize the construction noise impact during normal daytime working hours.

PME grouping as noise mitigation measures shall be implemented at NSRs N11, N13, N17, N18 and N20. In order to minimize the construction noise impact on the surrounding NSRs, only one group of PME shall be operated at any one time during construction.

Detailed list of PME and specific noise impact of individual construction work shall be reviewed in relevant method statement via submission to the Engineer.

8.6 Construction Stage after CWB Tunnel Commissioning

Pursuant to Clause 2.10 of both Environmental Permit No. **EP/364/2009/F** and Further Environmental Permit No. **FEP-07/364/2009/F**, to mitigate traffic noise from road operation, the following noise barriers and semi-enclosures shall be installed before the commencement of operation of the **corresponding road sections** unless otherwise specified in the above Permits. The locations and indicative designs of the noise semi-enclosures and barriers are shown in Figures 4a and 4b of the above Permits:

- (a) about 235m length of noise semi-enclosure covering the westbound slip road from the Island Eastern Corridor (IEC);
- (b) about 230m length of noise semi-enclosure covering the main carriageways (eastbound and westbound) of the Central-Wan Chai Bypass (CWB) and IEC;
- (c) about 135m length of 5.5m high cantilevered noise barrier with 4.5m long cantilever inclined at 45° on the eastbound slip road to the IEC;
- (d) about 95m length of 5.5m high cantilevered noise barrier with 1m long cantilever inclined at 45° on the eastbound slip road to the IEC;
- (e) about 350m length of 3.5m high vertical noise barrier on the eastbound slip road to the IEC;
- (f) about 265m length of noise semi-enclosure covering the westbound slip road from the IEC shall be installed before the occupation of planned noise sensitive receivers (NSRs) in the Comprehensive Development Areas (CDA) near Oil Street, North Point, as shown in Figures 4a and 4b of the above Permits.

Due to the existing site constraint, the noise semi-enclosure between IEC westbound Pier 17 and Pier 22 (i.e. portion of noise semi-enclosure in item (a) above) cannot be installed until some of the traffic lanes are diverted to CWB tunnel after tunnel commissioning so as to allow working space for installation. An explanatory note on the incomplete single noise semi-enclosure works of IEC westbound bridges between Piers 17 and 22 is enclosed in **Appendix H**.

The remaining section of noise semi-enclosure between IEC westbound Pier 17 and Pier 22 will be completed as soon as possible after granting the approval from the Traffic Management Liaison Group (TMLG) members including Transport Department and Hong Kong Police Force on the traffic lane closure after CWB tunnel commissioning.

To mitigate the construction noise impact for the installation of the remaining permanent noise semi-enclosures due to the incomplete noise semi-enclosure between IEC westbound Pier 17 and Pier 22, a 3.5m high vertical noise barrier with PMMA panels with same specification as the noise barriers in item (a) above has been installed along the edge of IEC Pier 17 to Pier 22 as temporary noise mitigation measures (see **Figures a and b** in **Appendix I**), except for some locations at the movement joints of the piers which the outstanding PMMA panels will have been installed prior to the commencement work of above construction work. An updated noise assessment of cumulative impacts due to construction work with reference to (i) Appendix 4.13 - Powered Mechanical Equipment (PME) for the Different Construction Tasks during Normal Daytime Working Hours (with Mitigation Measures), and (ii) Appendix 4.14 - Calculations and Results of Construction Noise Impacts During Normal Daytime Working Hour (with Mitigation Measures) of approved EIA report has been carried out (refer to **Appendix I**). It is noted that the predicted cumulative construction noise level is still below 75dB(A) with the temporary noise mitigation measures properly in place.

In addition to the 3.5m high vertical noise barrier with PMMA panels with same specification as the noise barriers in item (a) of Condition 2.10 of the EP and FEP will be installed along the edge of IEC Pier 17 to Pier 22 as temporary noise mitigation measures, all practicable noise mitigation measures will be implemented if necessary to minimize the construction noise impact to nearby residents including the use of movable noise barriers / acoustic mat. Movable noise barriers / acoustic mat will be used for static plant, such as generator, air compressor, cherry picker and crane lorry as well as other Powered Mechanical Equipment (PME) where appropriate. The barrier material shall have a surface mass of not less than 14 kg/m² with sound absorptive lining.

The proposed construction equipment list in **Appendix I** is confirmed to be realistic, practical and practicable in completing the installation works of noise semi-enclosure between Pier 17 and 22 within the proposed schedule.

9.0 Evaluation of Mitigated Noise Impacts

With the use of QPME, temporary / movable noise barriers and PME grouping, the overall construction noise levels at NSRs shall be reduced by 7 to 31dB(A), depending on the type of construction activities. With the exception of NSRs N11, N17, N18 and N20, the predicted construction noise levels arising from the Project at all other NSRs selected for assessment shall comply with the EIAO-TM construction noise criteria. A summary for mitigated construction noise levels during normal daytime working hours at representative NSRs extracted from the approved EIA report (AEIAR-125/2008) is shown in Table 9-1.

Table 9-1: Summary of Mitigated Construction Noise Levels at Representative NSRs during Normal Daytime Working Hours

Representative NSRs	Predicted Mitigated Construction Noise Levels ($L_{eq(30\text{-minutes})}$ dB(A))
N11	44 – 70 (Group 1 PME)
N11	51 – 85 (Group 2 PME)
N13	55 – 71 (Group 1 PME)
N13	55 – 71 (Group 2 PME)
N15	62 – 75
N17	58 – 80 (Group 1 PME)
N17	58 – 80 (Group 2 PME)
N18	54 – 84 (Group 1 PME)
N18	54 – 84 (Group 2 PME)
N20 [#]	60 – 77 (Group 1 PME)
N20 [#]	60 - 77 (Group 2 PME)
N22	62 - 72

Note: # For normal daytime working hours, the noise criteria are 70 dB(A) and 65 dB(A) for normal teaching periods and examination periods respectively.

In accordance with the approved EIA report, the on-site survey has revealed that NSR N20 (HK Baptist Church Henrietta Secondary School) has already been noise insulated with air-conditioners. With the provision of noise insulation and air-conditioners, it is considered that the noise impact shall be minimized by keeping the windows closed during the construction activities. Notwithstanding this, due to a limited buffer distance and a more stringent noise criterion of 65 dB(A), it is proposed that particularly noisy construction activities, especially those associated with the demolition of the IEC structures, shall be scheduled to avoid examination periods as far as practicable.

10.0 Impact Monitoring during Construction

External Monitoring

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

The Environmental Team Leader and his team member shall be responsible for the set-up, implementation and maintaining of the EM&A system. The real-time on-site monitoring of noise level around the work sites areas shall be carried out by Environmental Team during the construction phase.

The monitoring station(s) may be subject to change with respect to the availability of the

measurement location and/or other related factors. The relevant location(s) should be referred to the latest EM&A Manual via the Project website at the below link:

<http://www.wd2-cwb.com/web/index.php/project-ema-manual>

Action shall be immediately taken if the construction noise level exceeded the limit and action levels stipulated in the EM&A Manual.

11.0 Conclusion

- (1) The predicted unmitigated noise level shall range from 57 to 101 dB(A) at the respective NSRs. With the use of QPME, temporary / movable noise barriers and PME grouping for construction tasks under the Project, the predicted construction noise levels at the representative NSRs except NSRs N11, N17, N18 and N20 shall comply with the construction noise criteria.

Having exhausted practicable noise mitigation measures, the predicted noise level at NSR N11 (i.e Mayson Garden) shall exceed the noise criterion of 75dB(A) by 10 dB(A) with Group 2 PME. For NSR N17 (i.e Harbour Heights), the predicted noise level shall exceed the noise criterion of 75 dB(A) by up to 5 dB(A) with Group 1 or Group 2 PME. For NSR N18 (i.e City Garden), the predicted noise level shall exceed the noise standard of 75 dB(A) by up to 9 dB(A) with Group 1 or Group 2 PME. For NSR N20 (i.e HK Baptist Church Henrietta Secondary School), the predicted noise level with Group 1 or Group 2 PME shall exceed the noise standard of 65 dB(A) by up to 12 dB(A) for Group 1 or Group 2 PME during examination periods. For the normal teaching period, the noise level shall exceed the noise standard of 70 dB(A) by 7 dB(A) with Group 1 or Group 2 PME. However, the school has been noised insulated with air conditioners and, by keeping the windows closed during construction activities, noise impacts at the indoor environment can be avoided. Notwithstanding this, the particularly noisy construction activities shall be scheduled to avoid examination period as far as practicable.

Whilst the prediction does indicate some noise exceedance for limited periods of time, during the actual construction period all practicable mitigation measures possible shall be done to reduce construction noise further and there shall be on-going liaison with all concerned parties and site monitoring to deal with and minimize any exceedances. Community Liaison Group (CLG) will facilitate communication, enquires and complaint handling on all environmental issues. Regular meetings will be set up for the CLG to update the latest cumulative environmental impact due to the project.

Nonetheless, as mentioned above, the erection of movable noise barrier where allowable, at localized location as a possible noise mitigation measures will minimize any construction noise impact on the NSRs in the construction stage.



俊和-中國中鐵-中鐵大橋局聯營
CHUN WO - CRGL - MBEC JOINT VENTURE

Contract No. HY/2009/19
Central - Wan Chai Bypass – Tunnel (North Point Section)
and Island Eastern Corridor Link
Construction Noise Management Plan – Rev. 5

This Construction Noise Management Plan will be revised regularly to reflect changes if any.



俊和-中國中鐵-中鐵大橋局聯營
CHUN WO - CRGL - MBEC JOINT VENTURE

CONSTRUCTION NOISE MANAGEMENT PLAN

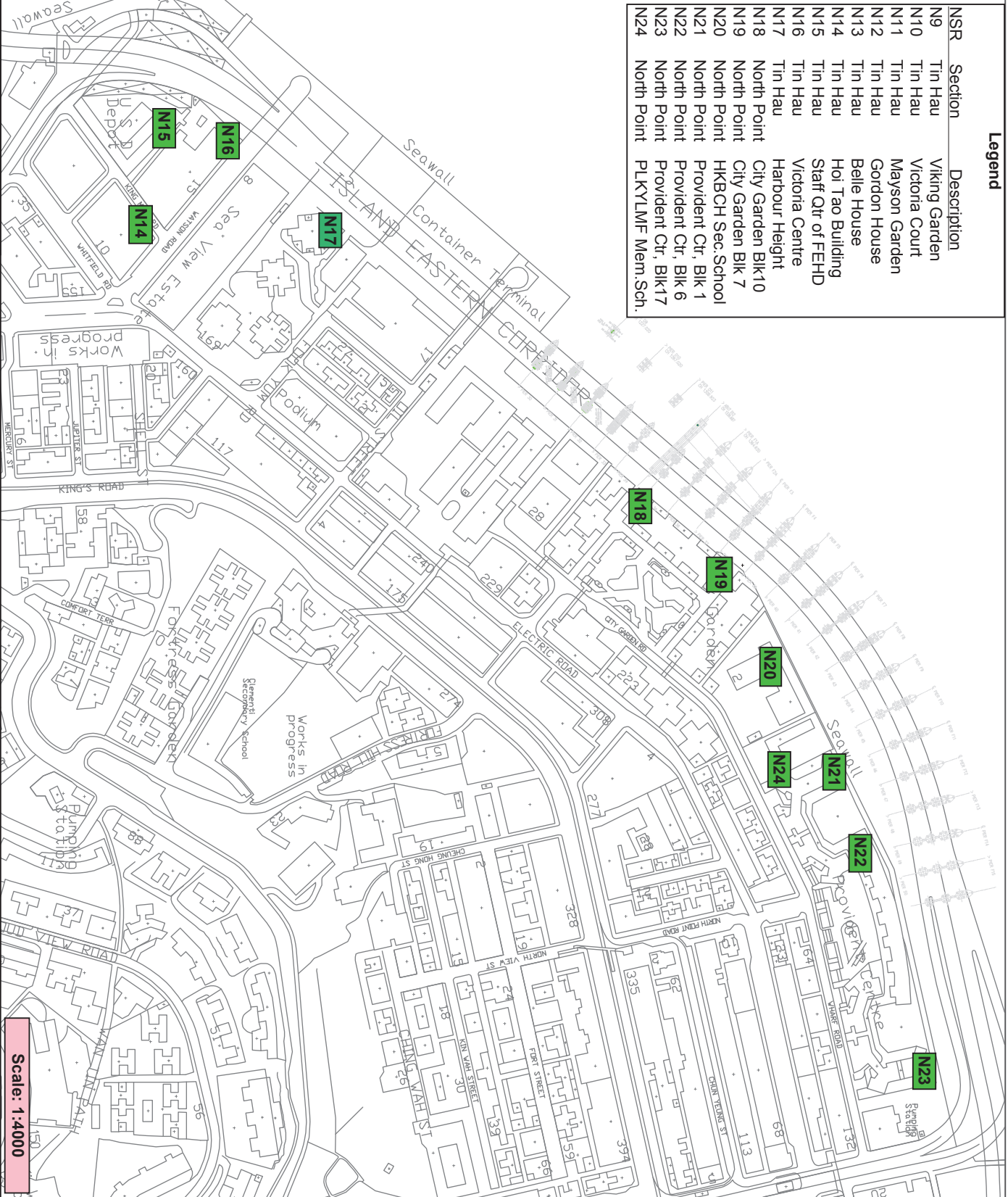
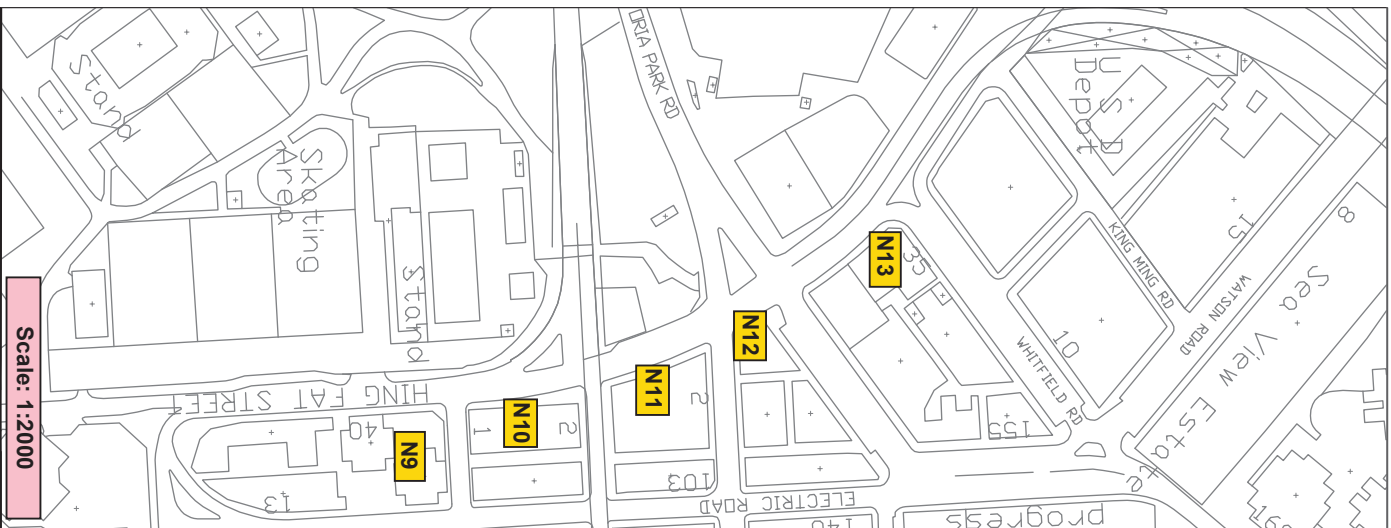
FOR

Contract No.: HY/2009/19

**Central – Wan Chai Bypass
Tunnel (North Point Section)
and
Island Eastern Corridor Link**

Appendix A

**Location Plan for
Representative Noise Sensitive Receivers**



NSR	Section	Description
N9	Tin Hau	Viking Garden
N10	Tin Hau	Victoria Court
N11	Tin Hau	Mayson Garden
N12	Tin Hau	Gordon House
N13	Tin Hau	Belle House
N14	Tin Hau	Hoi Tao Building
N15	Tin Hau	Staff Qtr of FEHD
N16	Tin Hau	Victoria Centre
N17	Tin Hau	Harbour Height
N18	North Point	City Garden Bldk 10
N19	North Point	City Garden Bldk 7
N20	North Point	HKBCH Sec. School
N21	North Point	Provident Ctr. Bldk 1
N22	North Point	Provident Ctr. Bldk 6
N23	North Point	Provident Ctr. Bldk 7
N24	North Point	PLKYLME Mem. Sch.

Legend

CLIENT

ENGINEER'S REPRESENTATIVE

CONTRACTOR

PROJECT:
 後和-中國中鐵-中鐵大橋局聯合
 CHIN WONG - CRI - WBC JOINT VENTURE

JOB TITLE:

Location Plan of Noise Sensitive Receivers (NSRs)

SCALE	AS shown at A4	Sheet	of
DATE			
DRAWN		DESIGNED	
CHECKED		APPROVED	
		Figure 1	REV
			0



俊和-中國中鐵-中鐵大橋局聯營
CHUN WO - CRGL - MBEC JOINT VENTURE

CONSTRUCTION NOISE MANAGEMENT PLAN

FOR

Contract No.: HY/2009/19

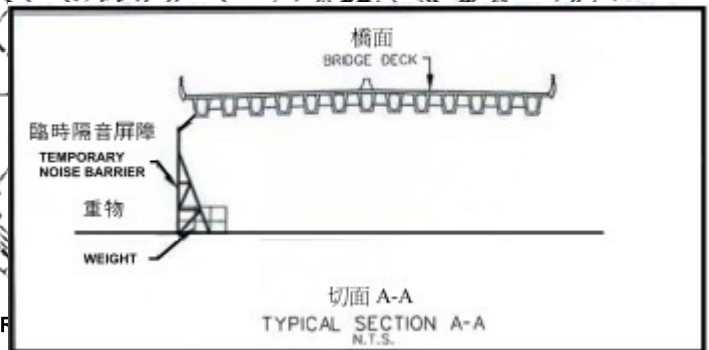
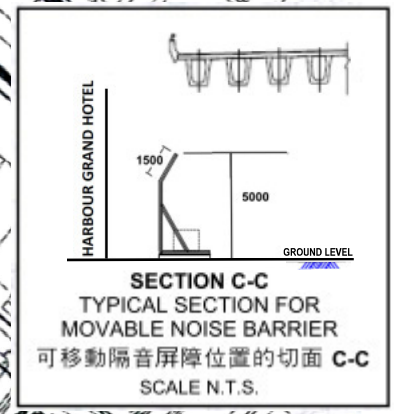
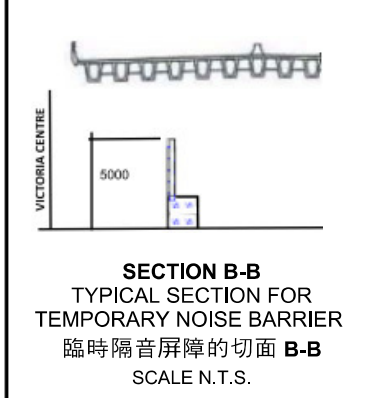
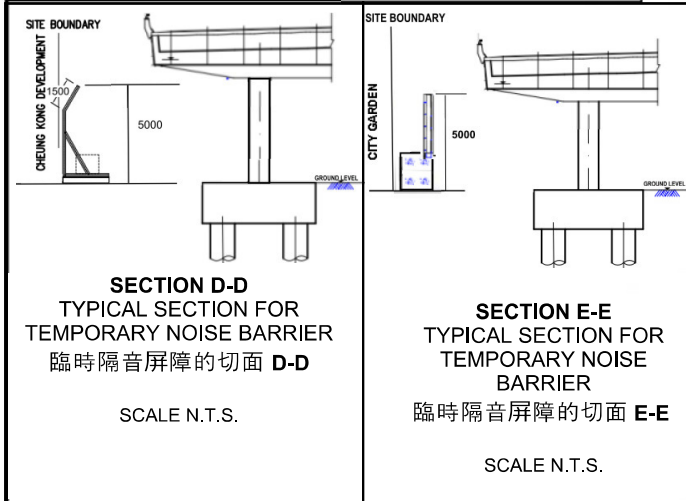
**Central – Wan Chai Bypass
Tunnel (North Point Section)
and
Island Eastern Corridor Link**

Appendix B

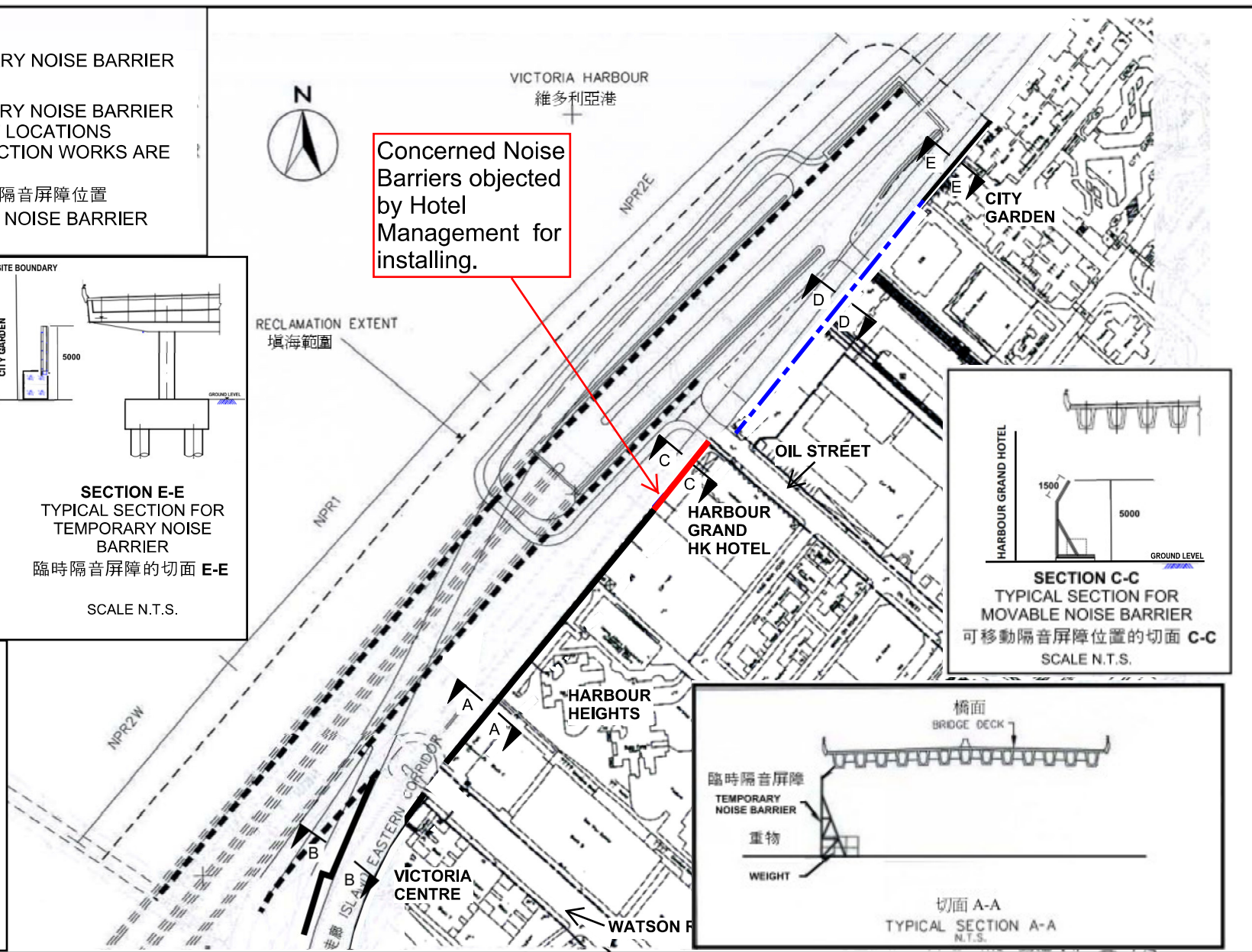
**Location Plan of Temporary Noise Barrier during
Construction Phase in North Point Waterfront
and during the Demolition of Existing Piers and Crossheads in
Marine Section of IEC**

LEGEND: 圖例

-  LINE OF TEMPORARY NOISE BARRIER
臨時隔音屏障位置
-  LINE OF TEMPORARY NOISE BARRIER
(TO BE PLACED AT LOCATIONS
WHERE CONSTRUCTION WORKS ARE
IN PROGRESS)
施工期間設置的臨時隔音屏障位置
-  LINE OF MOVABLE NOISE BARRIER
可移動隔音屏障位置



Concerned Noise Barriers objected by Hotel Management for installing.



Central - Wan Chai Bypass - Tunnel (North Point Section) and
Island Eastern Corridor Link

Figure 2: Location of Temporary Noise Barriers during Construction Phase in North Point Waterfront
圖 2: 在北角海旁施工期間的臨時隔音屏障位置圖

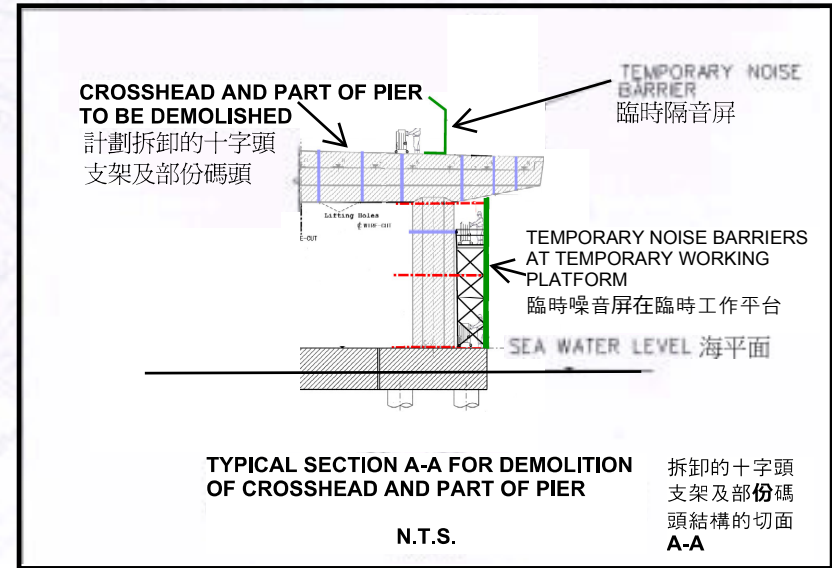
LEGEND 圖例

— PROPOSED TEMPORARY NOISE BARRIERS ON TEMPORARY WORKING PLATFORM TO BE ERECTED ON PIERS OR PILE CAPS OF IEC FOR DEMOLITION WORKS

在拆卸工程期間建議豎立於碼頭或東區走廊樁帽的臨時工作平台上的臨時隔音屏障



填海範圍
RECLAMATION EXTENT



Central - Wan Chai Bypass - Tunnel (North Point Section) and Island Eastern Corridor Link

Figure 3: Location of Temporary Noise Barriers during Demolition of Existing Piers and Crossheads in Marine Section of IEC

圖 3: 拆卸現有碼頭及東區走廊海面十字頭支架期間的臨時隔音屏障位置圖



俊和-中國中鐵-中鐵大橋局聯營
CHUN WO - CRGL - MBEC JOINT VENTURE

CONSTRUCTION NOISE MANAGEMENT PLAN

FOR

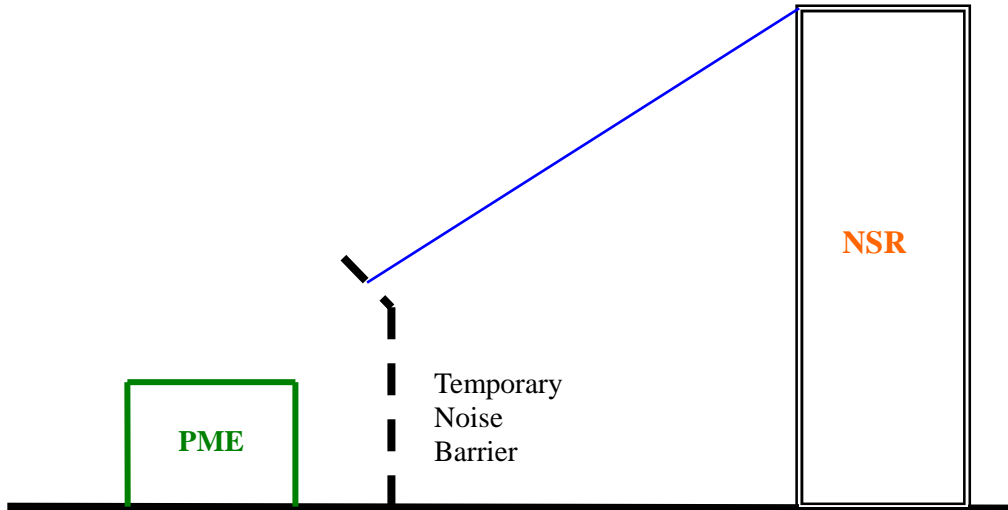
Contract No.: HY/2009/19

**Central – Wan Chai Bypass
Tunnel (North Point Section)
and
Island Eastern Corridor Link**

Appendix C

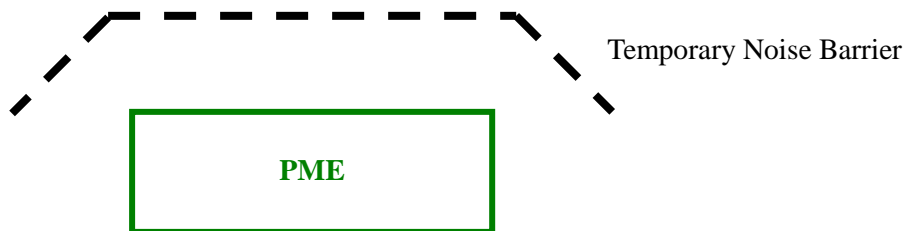
**Plan and Sectional View of Typical Noise Barrier
during Construction Phase**

Section View of Temporary Noise Barrier



Temporary Noise Barrier comprised of a surface mass of not less than 14 kg/m² on skid footing with 25mm thick internal sound absorptive lining backing with a cantilevered upper portion located within 5m from any static plant. The PME shall be totally screened when viewed from the NSR.

Plan View of Temporary Noise Barrier



Static plant that shall be totally screened when viewed from the NSR



俊和-中國中鐵-中鐵大橋局聯營
CHUN WO - CRGL - MBEC JOINT VENTURE

CONSTRUCTION NOISE MANAGEMENT PLAN

FOR

Contract No.: HY/2009/19

**Central – Wan Chai Bypass
Tunnel (North Point Section)
and
Island Eastern Corridor Link**

Appendix D

Specification of Noise Absorptive Material



15 JUL 2010

RESPONSE TO CONTRACTOR'S SUBMISSION

Our Ref. : CWB/(HY/2009/17)/M25/110/17B000514

To : Lam Woo & Co., Ltd.

Attn. : Mr. Daniel Chan

Location : Aesthetic Panel (Type 1)		CSF No. : CMS/C&S/014/2	
Title of Submission : Noise Absorptive Material - (Originated Rockwool for Aesthetic Panel from Contractor) (Type 1)		Rev.: N/A	Date: 12 July 2010
<p>The Engineer's Representative's Comment(s) :</p> <p>Your submission ref: CMS/C&S/014/2, dated 13 July 2010 and received on 13 July 2010 refers.</p> <p>I have no objection to the use of "IAC" Acoustic Panel (Standard Panel Size: 1900 x 500 x 50mm) for the Aesthetic Panel Type 1.</p> <p>Please note that the colour of aluminium perforated sheet should be similar to the colour of steel posts.</p> <p>Please submit the schedule of material delivery to site.</p>			
<p>Status : <input type="checkbox"/> Approved; <input type="checkbox"/> Not approved and resubmission required;</p> <p><input checked="" type="checkbox"/> Approved subject to condition(s) as stated / further required information as stated.</p> <p><input type="checkbox"/> Approval not required. <input type="checkbox"/> Others _____ (Please specify)</p>			
The Engineer's Representative : _____ Terry Siu		Date of Response : 14 July 2010	

c.c. AECOM – Mr. Kelvin Cheng

TS/TL/SN/cw

Transportation Noise Barriers

Highways • Railroads • Buses • Airports • Light Rail Vehicles • Subways • Elevated Systems



- Galvanized Steel or Aluminium
- Free-Draining
- Light Weight
- Easily Installed
- Sound Absorptive
- Weather-Tested Finishes
- Freestanding or Add-on Cladding
- Horizontal or Vertical Installation
- Architectural Aesthetics

Freestanding Barriers

Noise Barriers Types : FS, HB and HBS Barriers – sound absorptive on one and two sides respectively – optimize sound transmission losses and sound absorbing properties in a durable and attractive wall system in harmony with the community. Excellent low frequency absorption for heavy vehicles.

- Laboratory-rated sound absorption on one or both sides.
- Low weight, rugged construction – ideal for wall or roof mounting.
- 125mm thick modular system in steel or aluminium.
- Abuse resistant powder coated galvanized steel or aluminium construction.
- Readily relocated in the event of expansion or the re-use in other projects.
- Withstand wind load up to 4.23 KPa (max. 3m) - designs for specific wind loads are available.



Noise Barrier system Finishes

Noise Barriers are finished with a tough, thermosetting, polyester powder coating. A wide variety of standard colors allows complementary decorative schemes and attractive designs to reduce apparent wall height as perceived by the community and motorists.

- Salt spray tested for checking, blistering, loss or adhesion, or evidence of corrosion per ASTM B 117 for 3000 hours without coating failure.
- Tested for accelerated weathering per AAMA 2604-98 for 5 years Florida with colour change $\Delta E < 5$ and gloss retention $> 30\%$.
- Optional facings include stucco and others.







Industrial Acoustics Company...Making the World a Quieter Place

Suite 1601, 148 Electric Road, North Point, Hong Kong.

Tel : 852-25281138 Fax : 852-25291961 email : info@iachk.com

Contract No. HY/2009/17 Noise Absorptive Material

Configuration		TYPE FS/A  Thickness 125mm	TYPE FS/A/1  Thickness 125mm	TYPE HB/A  Thickness 125mm	TYPE HBS/A  Thickness 125mm
Weight (kg/m ²)	Aluminium	10.70	24.50	12.20	25.40
Application		Freestanding alongside noisy equipment			Freestanding between multiple noise source

ACOUSTIC PERFORMANCE CHARACTERISTICS

1/1 Octave Band Center Frequency, Hz	125	250	500	1K	2K	4K	STC / R w
SOUND TRANSMISSION LOSS DATA, dB (.)							
FS/A	14	19	27	33	38	39	31
FS/A/1	23	30	39	35	41	45	38
HB/A	14	17	24	32	36	43	29
HBS/A	14	15	22	40	48	53	27
SOUND ABSORPTION COEFFICIENT (..)							
	NRC						
FS/A	0.79	1.14	1.18	1.12	1.06	1.01	1.10
FS/A/1	0.66	1.07	1.12	1.06	1.04	0.97	1.05
HB/A	0.62	1.07	1.22	1.14	1.17	1.10	1.15
HBS/A	0.43	0.60	0.92	1.06	1.04	1.13	0.90

. All data in accordance with ISO Standard 140 or ASTM E90.
.. All data in accordance with ASTM C423 or ISO Standard 354.

Specifications

Transportation Noise Barriers FS/A, FS/A/1, HB/A and HBS/A Module

1.0 GENERAL

1.1 Noise Barrier Modules shall be manufactured and installed with an acoustically absorptive surface, having guaranteed sound absorptive properties facing the predominant noise source. The barrier shall be constructed of vertical posts and polyester powder coated absorptive modules stacked to achieve the required wall heights. The pre-approved barrier system shall be Transportation NOISHIELD Type : FS, HB and HBS as manufactured by Industrial Acoustics Company (H.K.) Ltd., Suite 1601, 148 Electric Road, North Point, Hong Kong.

1.2 Pre-bid submittals and approval shall include sample, structural calculations and wall design drawings: current test data illustrating compliance with the requirements of the acoustical and durability specifications for modules made on production line; proof of adequate manufacturing and financial capability consistent with project requirements; and a sample module made on production tooling.

2.0 DESIGN

2.1 Ground Mounted Barriers

2.1.1 Posts shall be spaced at 3000mm on center for steel posts, (plus concrete web thickness for concrete posts) consistent with the module spanning capability at the design wind pressure.

2.2 Color, Module Patterns

2.2.1 Modules shall have a consistent color from module to module. A sample of each color to be supplied shall be submitted for approval prior to the start of manufacturing.

2.2.2 Panels shall be stacked with joints aligned horizontally or joints may be uniformly stepped where the top or bottom of the wall change elevations. Barrier module color patterns shall be shown on shop drawings (using a legend keyed to color numbers).

2.3 Acoustical Characteristics

2.3.1 The barrier shall incorporate absorptive sound materials to prevent reverberation of noise between parallel walls, between vehicles and nearby sound barriers, and noise reflections to unshielded noise sensitive areas of the community.

3.0 MATERIALS

3.1 Modules shall be constructed of aluminium sheets manufactured in accordance with the requirements of AA1100 Specification, minimum 1.2mm solid side and 1.2mm perforated side. Modules shall be non-welded, free draining. Modules shall be coated in the factory with polyester powder coating applied through the use of an electrostatic charged and thermally bonded to the aluminium sheets.

3.2 Acoustic fill material shall be fiberglass, non-corrosive, resistant to be attacked by fungus, fire-resistant, vermin proof, and non-hygroscopic. Fill material shall be free draining, self supporting and shall retain physical and sound absorptive characteristics after long term exposure to the elements.

3.3 Posts shall be galvanized steel meeting the requirements of BS729 and BS4360 Grade 43A or approved equal. Color coating of posts shall be as required by the owner/architect.

3.4 Anchor bolts shall be stainless steel or approved equal.

3.5 Bearing blocks shall be EPDM, neoprene, or rubber, 60 durometer.

3.6 Material Testing and Certification.

3.6.1 Acoustical testing

3.6.1.1 Certified test reports shall be submitted to demonstrate compliance with the Sound Transmission Loss and Sound Absorption Coefficients specified. Tests have been conducted in a laboratory accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) or HOKLAS.

3.6.1.2 Sound Absorption Coefficient Tests shall be performed in accordance with ASTM C423 or ISO 354.

3.6.1.3 Transmission Loss Tests shall be performed in accordance with ASTM E90 or ISO 140.

3.6.2 Module Testing

3.6.2.1 Fire properties of the panel shall be tested in accordance with ASTM E84-01 with the following results :

- Flame Spread Index = 0
- Smoke Developed Index = 5

3.6.2.2 Salt spray tested for checking, blistering, loss or adhesion, or evidence of corrosion per ASTM B117 for 3000 hours without coating failure.

3.6.2.3 Tested for accelerated weathering per AAMA 2604-98 for 5 year Florida with colour change $\Delta E < 5$ and gloss retention $> 30\%$.

All designs and specifications subject to change without notice. Metric dimensions nominal.



INDUSTRIAL ACOUSTICS COMPANY (H.K.) LTD.

雅士消聲器材(香港)有限公司

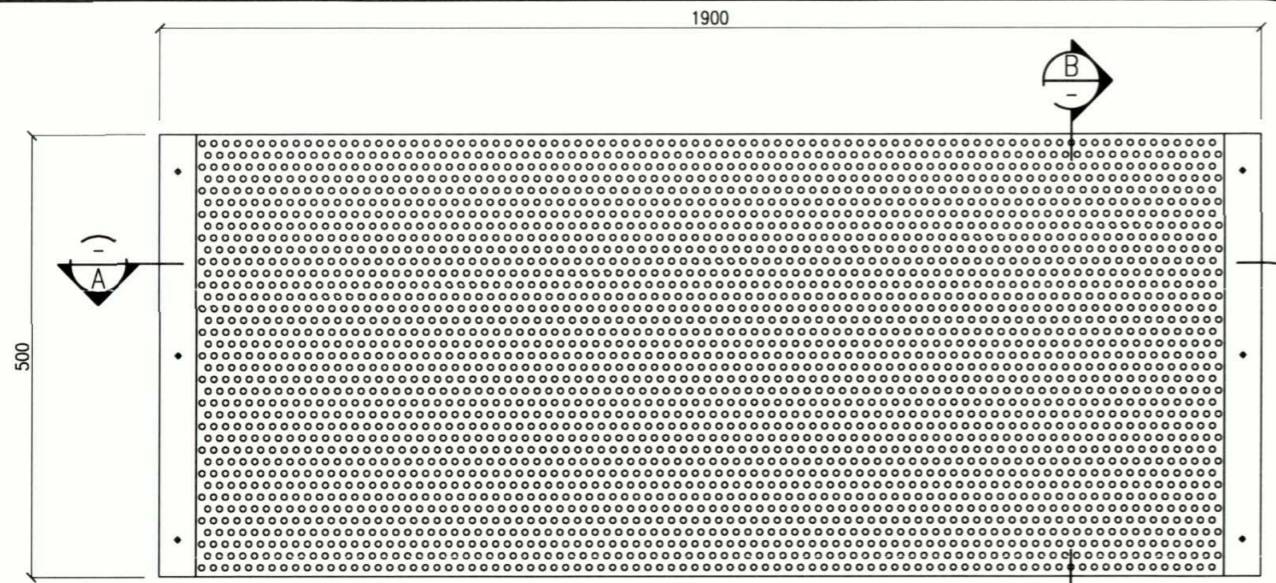
Suite 1601, 148 Electric Road, North Point, Hong Kong
Tel: (852) 2528 1138 Fax: (852) 2529 1961
E-mail address: info@iachk.com Web Site: www.iachk.com



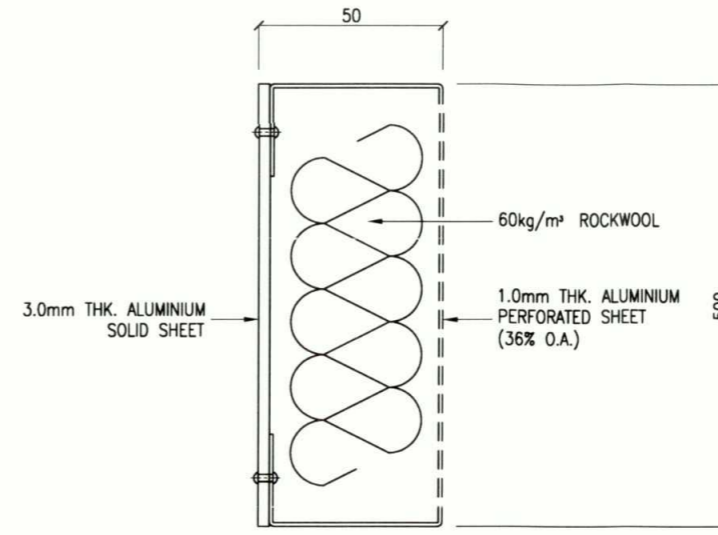
Calculation the weight of 50mm thick panel

	panel size	1900x500 =	0.95	m2	
Material		Area		Weight	
1)	3mm thick aluminium sheet 1900x500	0.95	m2	7.84	kg
2)	1.0mm thick Aluminium perforated sheet 1900x700 (36% Opening)	1.33	m2	2.3408	kg
3)	1.0mm thick Aluminium End U	0.1	m2	0.275	kg
4)	50mm Thk. 60kg/m3 Rockwool	0.95	m2	2.85	kg
5)	Others (Pop revit and screws)			0.15	kg
		Total		13.4533	kg
		Unit Weight		14.16	kg/m2

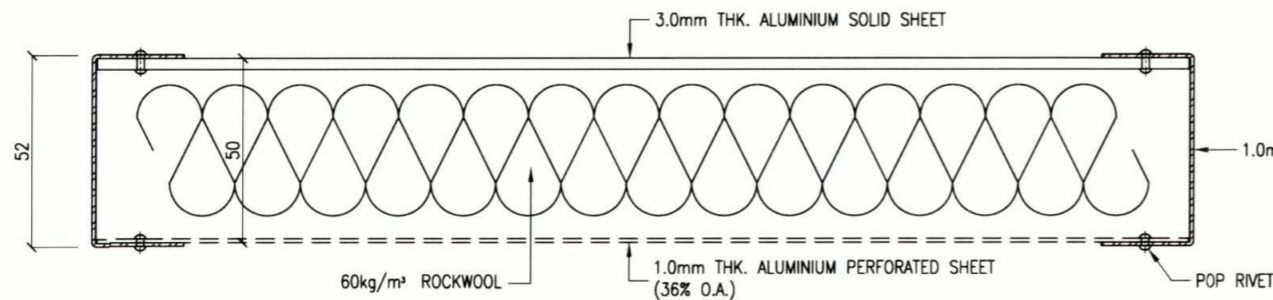




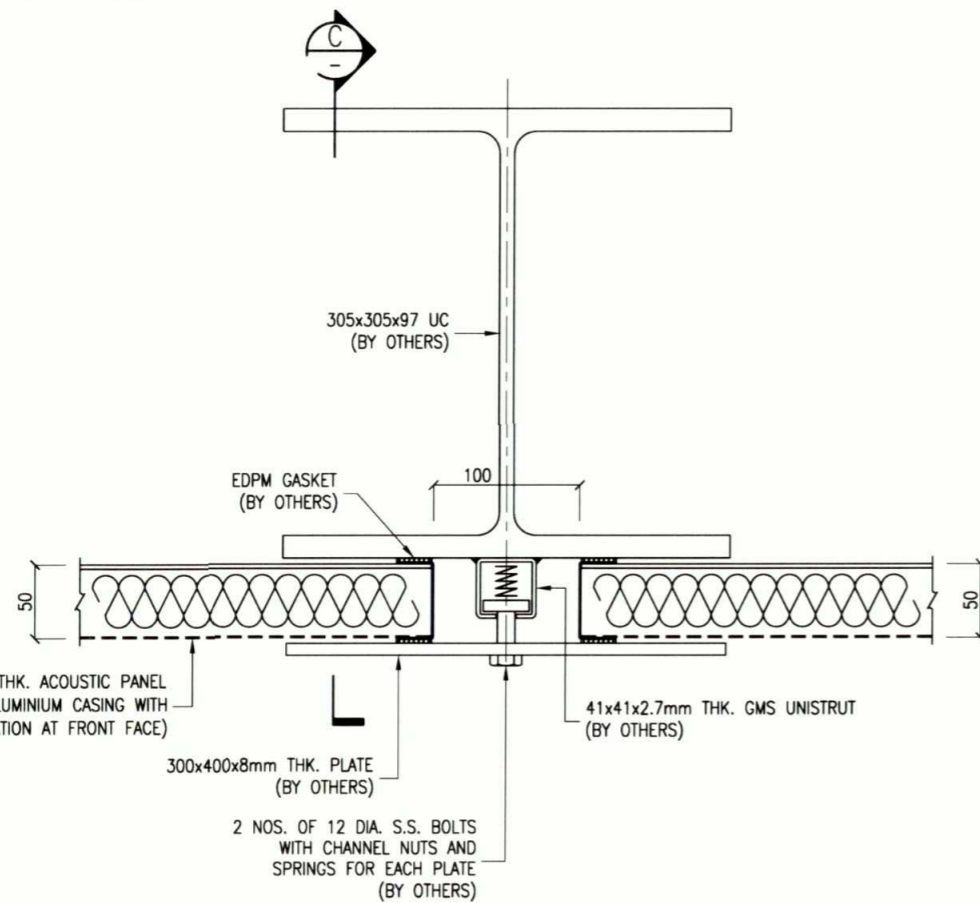
ELEVATION OF ACOUSTIC PANEL
N.T.S.



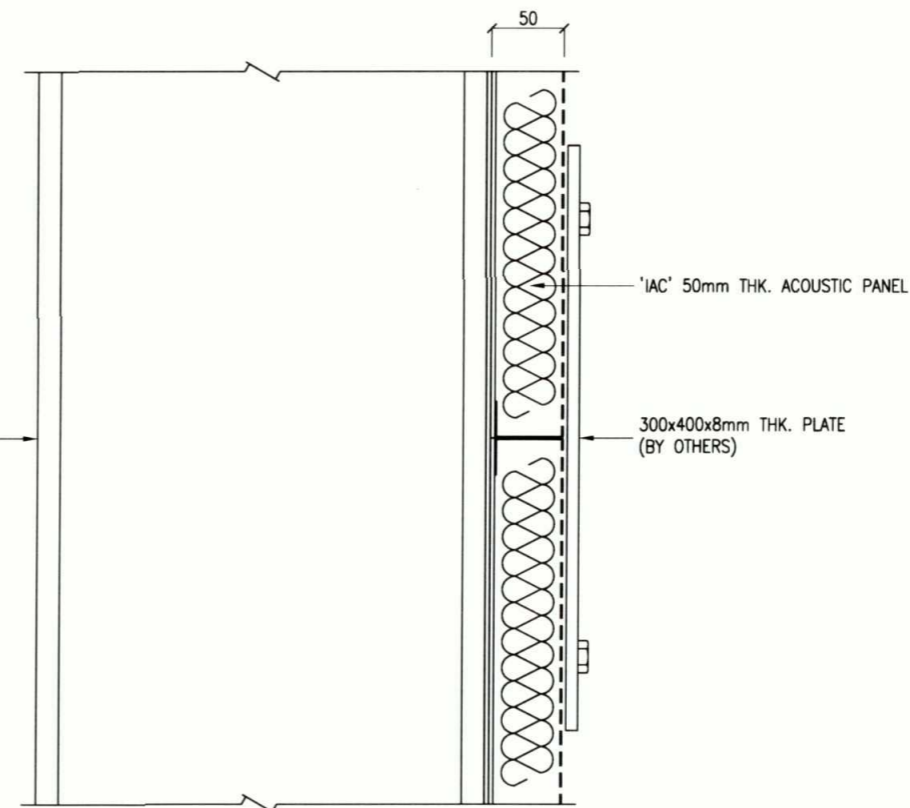
SECTION B
N.T.S.



SECTION A
N.T.S.



FIXING DETAIL FOR ACOUSTIC PANEL
SCALE 1:5



SECTION C
SCALE 1:5

NOTES:

- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH AECOM'S DWG. NO. 60095653/FEHD/1107A, 1108A.



PROJECT:
CONTRACTOR NO. HY/2009/17
CENTRAL - WAN CHAI BYPASS
FEHD WHITFIELD DEPOT
RE-PROVISIONING WORKS

TITLE:
LAYOUT AND FIXING DETAIL
OF ACOUSTIC PANEL

DRAWN BY: SHL	DESIGNED BY: FML
SCALE: AS SHOWN@A3	CHECKED BY: FML
JOB NO: -	DATE: 9-JUL-2010

DRAWING NO: EW-2009/17-AP-D001	REV: 0
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AECOM +E
8/F, Grand Central Plaza, Tower 2, +E
138 Shatin Rural Committee Road,
Shatin, Hong Kong
香港新界沙田鄉事會路 138 號
新城市中央廣場第 2 座 8 樓
www.aecom.com

B000207

Your Ref. : CHEC-CRBCJV/C-257/01.01/000243, CGS/000016/A
Our Ref. : CWB/(HY/2009/11)/M25/110/B000207

10 March 2010

Mr. Daniel Cheung
China Harbour Engineering Company Limited -
China Road and Bridge Corporation Joint Venture
19th Floor, China Harbour Building
370-374 King's Road
North Point
Hong Kong

Dear Sirs,

Contract No. HY/2009/11
Central-Wan Chai Bypass – North Point Reclamation

Submission CGS/000016/A for Noise Absorptive Material

I refer to your above referenced submission dated 12 February 2010 and your subsequent letter dated 5 March 2010 enclosing the manufacturer's testing report on the proposed Forster F2 absorptive panel.

Since the report shows that the absorptive panel can absorb 12 dB noise intensity which meets the EIA noise reduction requirement of 10dB, I have no further comment on their use for the special hoarding of this project.

Yours faithfully,
For and on behalf of
AECOM Asia Co. Ltd.

Terry Siu
Engineer's Representative
Transportation

c.c. AECOM - Attn : Mr. Kelvin Cheng

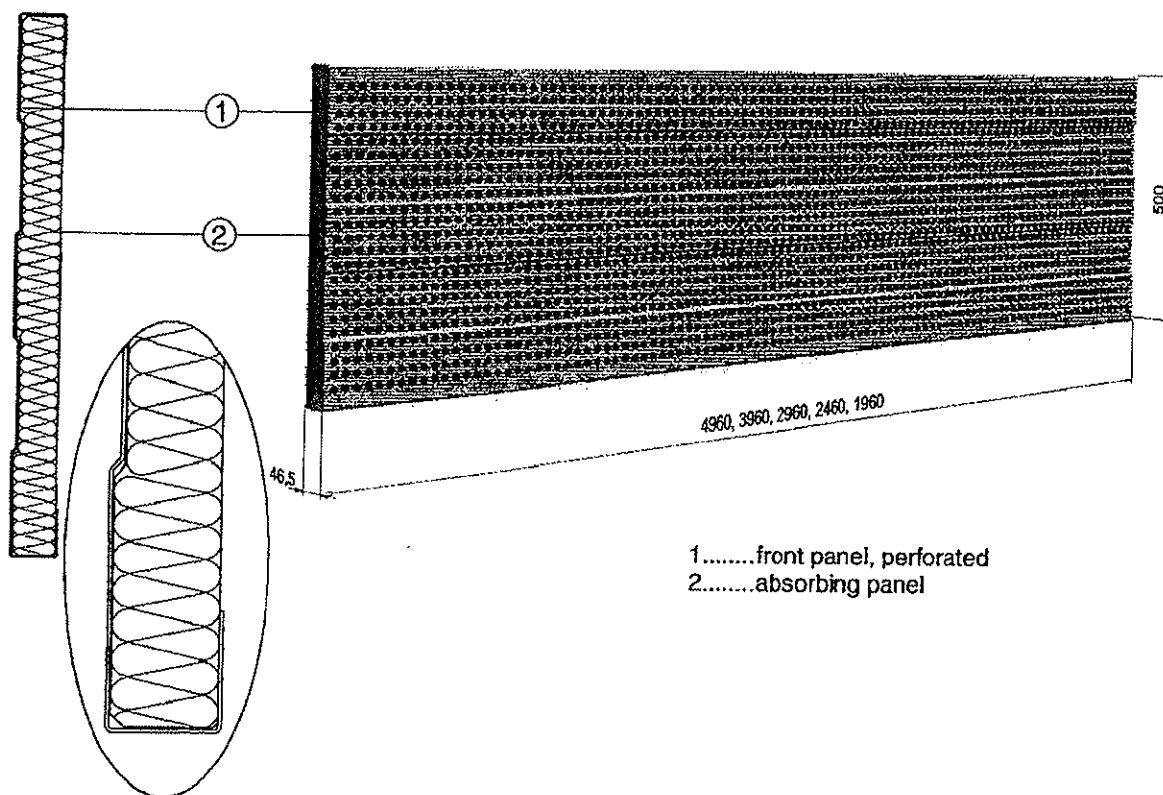
TS/ TL/SN/mt

Forster Metallbau Gesellschaft m. b. H.
 P.O. Box 176, Weyrer Strasse 135
 A-3340 Waichhofen/Ybbs, Austria

Tel. (0) 74 42 / 501 - 0 e-mail: forster@forster.at
 Fax (0) 74 42 / 501 - 100 http://www.forster.at



highly absorbing aluminium cladding panel type F2



Types:

F2/1,25 sheet thickness 1,25 mm

Material:

Aluminium, polyester-powder-coated

Standard size : 1960mm x 500mm x 45mm

Description:

Aluminium cladding panel, highly absorbing, for cladding of reflecting walls, according to EN 1793-1, ZTV-LSW 06 and CE-label acc. to EN 14388.

Absorbing panel: 40 mm thick rockwool with 100 kg/m³, front side covered with black glass fleece (hydrophobic).

Front panel crimped for stiffening and profiled.

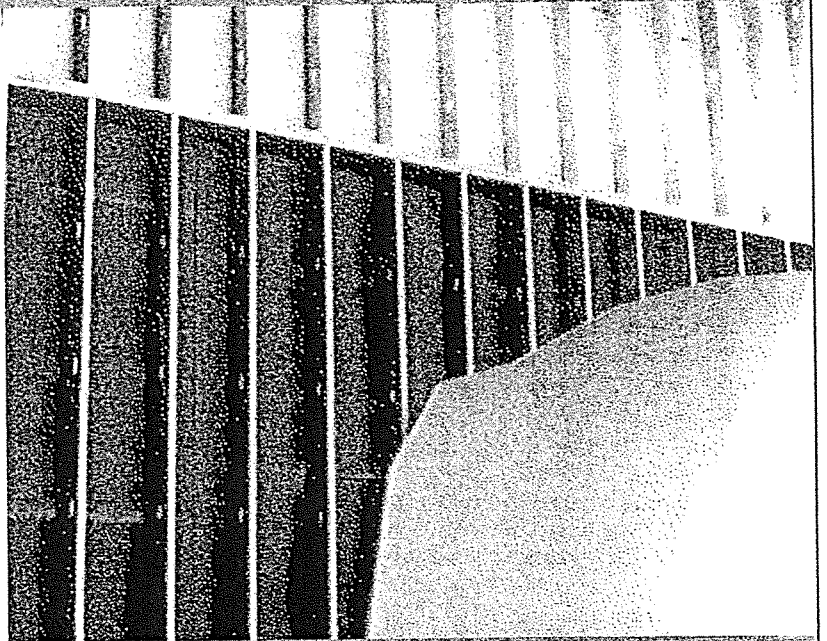
Characteristic values:

	sound absorption acc. EN 1793-1
	DL _α , dB
	min. 9 (A3)

讓噪音成為絕響

專業隔音 給您真正安靜空間

SOUND
PROOF



BOUNTY

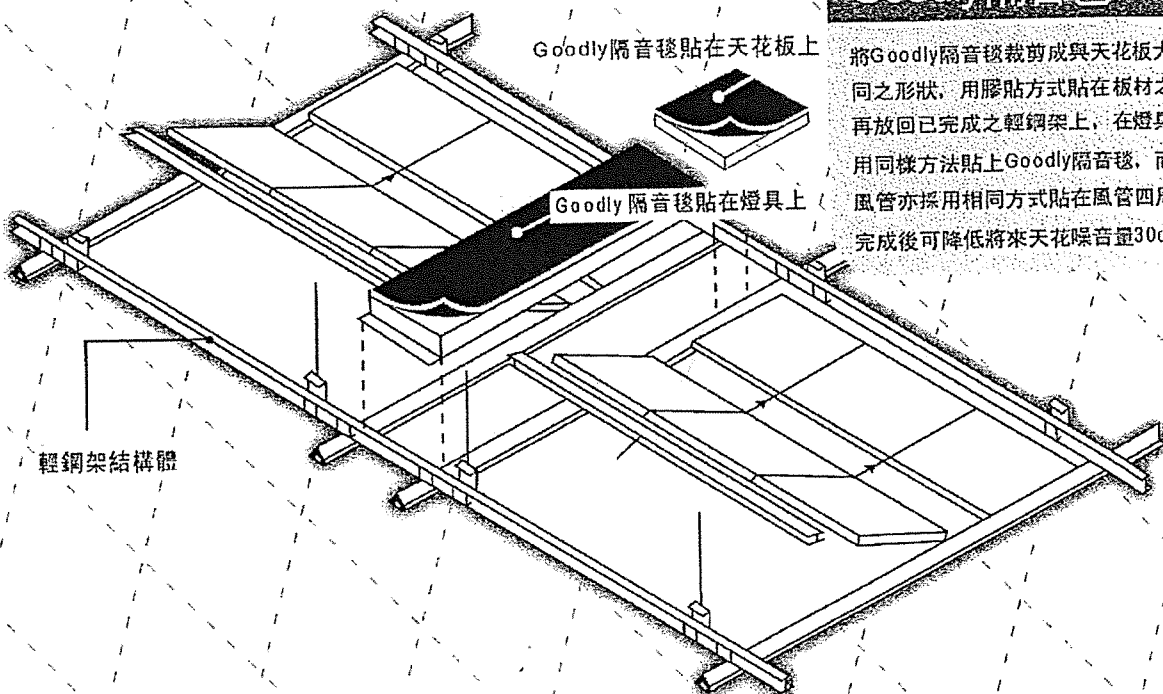
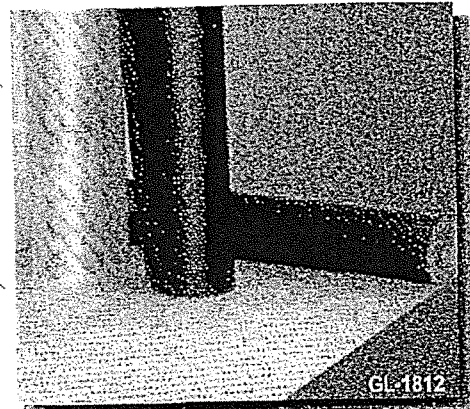
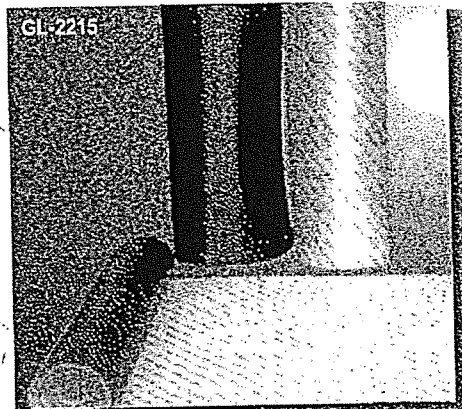
Contract No. HY/2009/19 Noise Absorptive Material

隔音材料

GOODLY 隔音毯

1. 面積密度: $2.1\text{Kg}/\text{m}^2$
厚度: $1.5\text{m}/\text{m}$
寬度: 0.9m .
2. 標準長度: 10m 耐燃度: 200°C .
3. 特性: 音響透過 **STC-21**.
抗拉強度為 9.56MPa , 延伸率為 143.1% , 可承受抗擊力為 88.8N . 不阻礙電波傳達, 具柔軟性, 可任意剪裁, 可配合各種施工方法, (如膠合, 壓合)等.
4. 組合成份: 聚乙稀加無機礦物粉, 加不銹鋼金屬纖維.
5. 可適用於工業廠房、空調機房、汽車、音響室、KTV、音樂教室等.

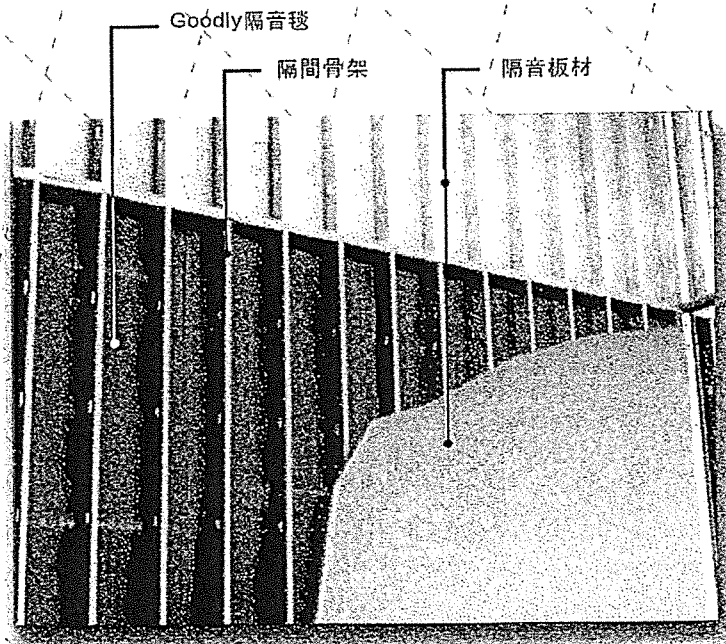
美國 ASTM 聲學測試結果表							
	125	250	500	1000	2000	4000	STC
GL-2215	12	12	16	22	27	32	21



輕鋼架天花系統貼上 Goodly 隔音毯

將Goodly 隔音毯裁剪成與天花板大小相同之形狀, 用膠貼方式貼在板材之背面, 再放回已完成之輕鋼架上, 在燈具背面亦用同樣方法貼上Goodly 隔音毯, 而空調風管亦採用相同方式貼在風管四周即可。完成後可降低將來天花噪音量30dB。

GOODLY® 隔音毯施工法

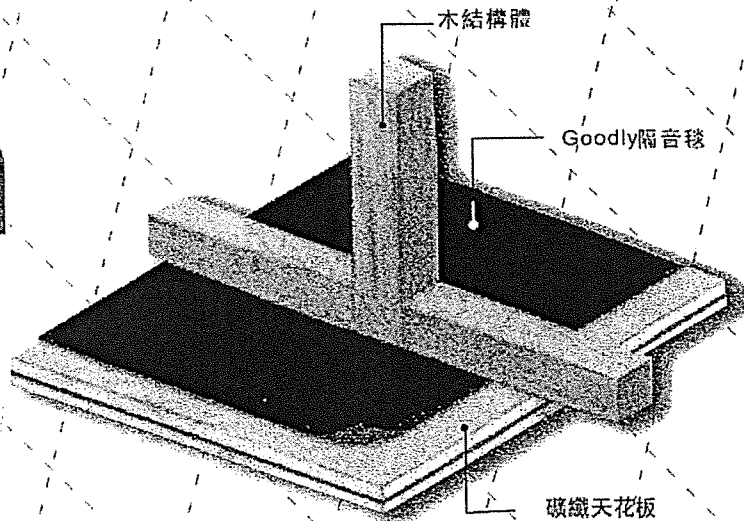


內貼 Goodly 隔音毯

先在已完成之單面板材上用膠貼或風壓釘方式，把 Goodly 隔音毯固定在板材上（黑色為面），面需貼向噪音來源點，再封釘另一片板材即可，再用粉刷漆上顏色或貼上壁紙修飾，完成后隔音量可達 30dB

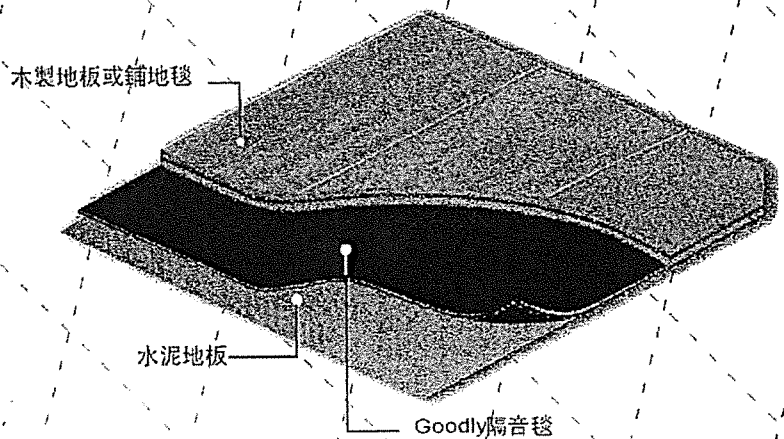
木作天花板貼上 Goodly 隔音毯

在木天花板第一層板材完成後，用膠貼或風壓釘把 Goodly 隔音毯固定在板面上（黑色為面），需面向噪音來源點，後再封釘另一面板材即可，再用粉刷或漆上顏色或貼上壁紙修飾。完成後可隔絕由上層所產生之噪音量為 40dB



水泥、磚塊或木地板貼上 Goodly 隔音毯

先將原地面打掃乾淨，吸掉地面一切灰塵並吹乾地面，使表面乾燥後，再用白膠或強力膠塗滿地面，另在 Goodly 隔音毯底部（黑色為面）面需貼向噪音來源點，同樣塗滿膠貼物，待膠貼物 1/3 乾後，鋪貼在地面上即可，最後再鋪上地毯或木地板便完成。完工後隔音量可達 40dB。



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CONSTRUCTION NOISE MANAGEMENT PLAN

FOR

Contract No.: HY/2009/19

**Central – Wan Chai Bypass
Tunnel (North Point Section)
and
Island Eastern Corridor Link**

Appendix E

Site layout Plan

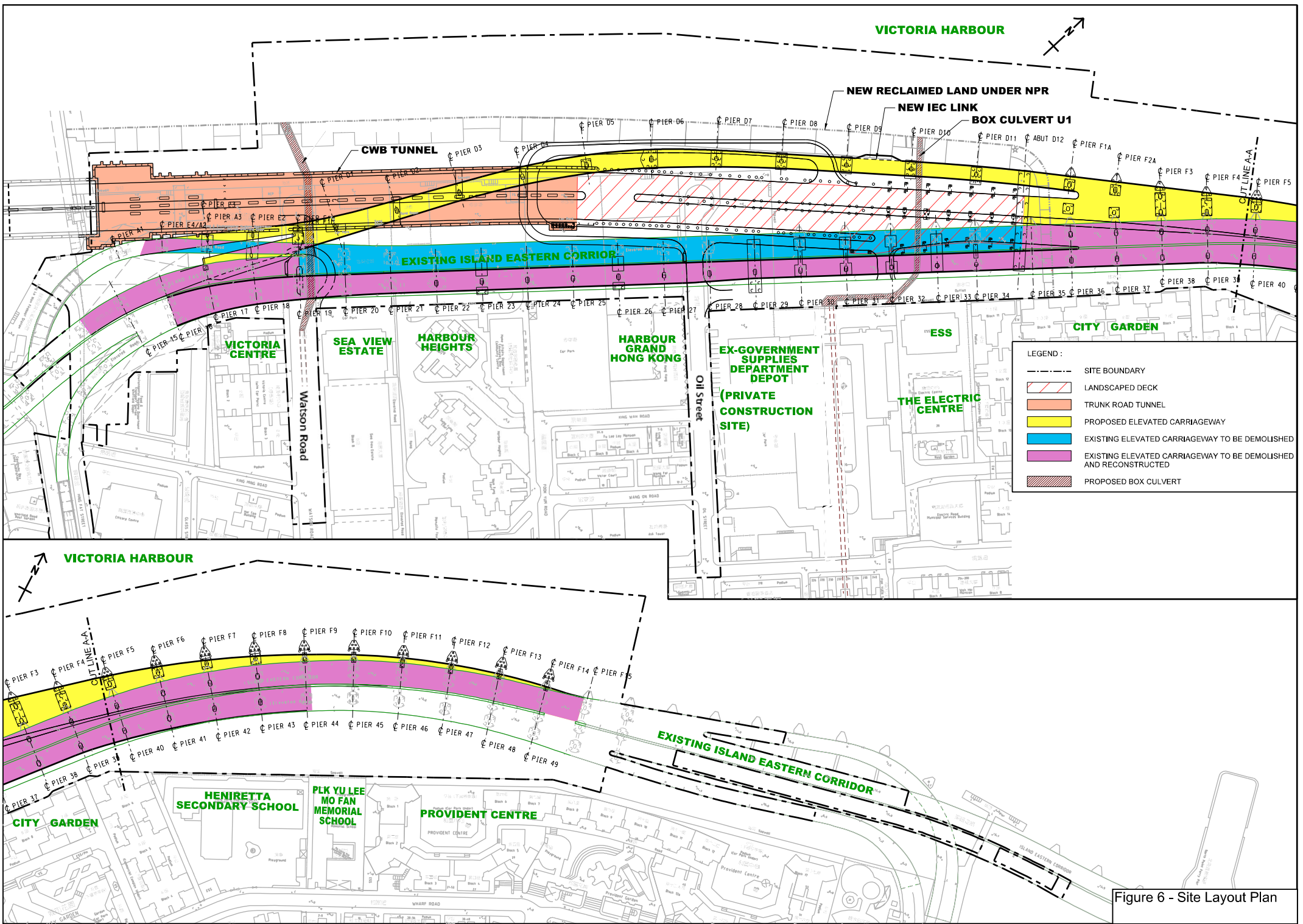


Figure 6 - Site Layout Plan



俊和-中國中鐵-中鐵大橋局聯營
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CONSTRUCTION NOISE MANAGEMENT PLAN

FOR

Contract No.: HY/2009/19

**Central – Wan Chai Bypass
Tunnel (North Point Section)
and
Island Eastern Corridor Link**

Appendix F

Harbour Grand Hong Kong Hotel Correspondence

Mohamed Hasan Isa

From: Simon Tang (Harbour Grand Hong Kong - Director of Guest Safety & Services) <simont@harbourgrand.com>
Sent: Thursday, July 06, 2017 4:33 PM
To: George Lee (CW)
Cc: Ivan Wong (CW); Andy Chan (CW); Mohamed Hasan Isa
Subject: RE: HGHK: Placing Temp Noise Barrier at HGHK Carpark

Dear George:
Hotel fully understood the barrier would block the view and natural wind.
We would prefer not to build the barrier.
BR,
Simon

From: GEORGE LEE CHUNG [<mailto:george.lee@chunwo.com>]
Sent: Wednesday, 05 July, 2017 9:59 AM
To: Simon Tang (Harbour Grand Hong Kong - Director of Guest Safety & Services)
Cc: IVAN WONG CHI CHEUNG; ANDY CHAN CHI CHUNG; mh.isa@hy200919.chunwo.com
Subject: RE: HGHK: Placing Temp Noise Barrier at HGHK Carpark

Dear Simon,

Further to my previous email, I would like to further elaborate the reason of placing noise barrier.

The provision of temporary noise barrier as noise mitigation measures as recommended under the relevant EIA report and EP.

We understand that the view to Victoria Harbour from hotel will be blocked and natural wind will be reduced once the barriers are in place.

Should you understand the requirement and accept the removal of the temporary noise barrier, kindly reply our email once again to express your opinion on such arrangement.

Regards,

Lee Chung

Chun Wo Construction & Engineering Co. Ltd.

Mobile: (852) 9641 9401

Website: www.chunwo.com

寄件者: Simon Tang (Harbour Grand Hong Kong - Director of Guest Safety & Services) <simont@harbourgrand.com>
寄件日期: 2017 年 7 月 3 日 16:26
收件者: GEORGE LEE CHUNG
副本: IVAN WONG CHI CHEUNG
主旨: RE: HGHK: Placing Temp Noise Barrier at HGHK Carpark

Dear George:

A 5m height barriers would definitely blocking our view from the alfresco as well as the function room on 1/F. Therefore, we would not agree on this proposal.

Thanks & regards,

Simon Tang

Director of Guest Safety & Services
Harbour Grand Hong Kong Limited

23 Oil Street, North Point, Hong Kong
(MTR Fortress Hill Station, Exit A)
Dir: +852 2121 2635
Fax: +852 3908 6159
Email: simont@harbourgrand.com
Website: www.harbourgrand.com

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From: GEORGE LEE CHUNG [<mailto:george.lee@chunwo.com>]
Sent: Monday, 03 July, 2017 1:59 PM
To: Simon Tang (Harbour Grand Hong Kong - Director of Guest Safety & Services)
Cc: IVAN WONG CHI CHEUNG
Subject: HGHK: Placing Temp Noise Barrier at HGHK Carpark

Dear Simon,

Currently our project is carrying out foundation works outside HGHK Carpark. Such works target to finish in July 2017.

Our client's Environmental Team (ET) comments that, in order to mitigate the impact to adjacent stakeholders, JV propose to place some temporary noise barriers along the fence wall of HGHK Carpark. The barrier will have approx. 5m in height and continuous from east to west.

We understand that the view to Victoria Harbour from hotel will be blocked and natural wind will be reduced once the barriers are in place.

We therefore write to seek your approval on such arrangement.

Should you have any queries please feel free to contact me.

Regards,

Lee Chung

Chun Wo Construction & Engineering Co. Ltd.
Mobile: (852) 9641 9401
Website: www.chunwo.com

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CONSTRUCTION NOISE MANAGEMENT PLAN

FOR

Contract No.: HY/2009/19

**Central – Wan Chai Bypass
Tunnel (North Point Section)
and
Island Eastern Corridor Link**

Appendix G

Environmental Review Report

Central-Wan Chai Bypass –Tunnel (North Point Section) and Island Eastern Corridor Link

Environmental Review Report for Alternative Arrangement for Demolition and Construction of Substructures for the Island Eastern Corridor and Construction of Adjacent Tunnel Approach Ramp Structure

1. Introduction

- 1.1 As stipulated in Condition 2.9(b) of Environmental Permit EP-364/2009/C (EP), temporary noise barriers with height up to the soffit of the bridge deck area shall be installed along the existing IEC structure during the demolition and construction of substructure for the IEC and construction of adjacent tunnel approach ramp structure to mitigate the construction noise impact.
- 1.2 This Environmental Review Report aims to identify potential environmental impact due to the alternative arrangement on the demolition and construction of substructures for the Island Eastern Corridor (IEC) with associated noise mitigation measures.

2. Site Description

- 2.1 As mentioned in the EP, the scope of the Central - Wan Chai Bypass Project includes:
- (i) a dual three-lane trunk road, approximately 4.5 km in length, and tunnel approximately 3.7 km in length defined from the connection with the existing Rumsey Street Flyover in Central, through to a connection with the existing Island Eastern Corridor to the east of the Causeway Bay Typhoon Shelter (CBTS);
 - (ii) the Central Interchange near the Rumsey Street Flyover to provide road connections to the Central area;
 - (iii) tunnel control buildings and ventilation buildings;
 - (iv) slip roads to connect the CWB to the local road system in the Wan Chai North and Causeway Bay area;
 - (v) associated road lighting, road signing, traffic control and surveillance system; and
 - (vi) other associated works.
- 2.2 As part of the works of the Project, the modification of the section of Island Eastern Corridor (IEC) between Hing Fat Street and Po Leung Kuk Yu Lee Mo Fan Memorial School is required in which demolition and construction of the IEC will be carried out in stages. The general site layout showing the extent of the IEC reconstruction work is indicated in Figure 1a.

3. Alternative Arrangement during Demolition and Construction of Substructures for the IEC

- 3.1 Pursuant to Condition 2.9(b) of the EP, temporary noise barriers with height up to the soffit of the bridge deck area shall be installed along the existing IEC structure during the demolition and construction of substructure for the IEC and construction of adjacent tunnel approach ramp structure to mitigate the construction noise impact.
- 3.2 As stated in Section 4.5.6 of the approved EIA report (Report No. AEIAR-125/2008), the original demolition method for existing IEC is that the IEC is to be demolished by the breaking of the two ends at the piers to separate the U-beams and the U-beams will be removed by lifting cranes. Mechanical breakers such as excavator mounted breakers will be adopted in the breaking works as a conventional method which has already been considered in the construction noise assessment of the EIA report. Alternative construction method such as saw cutting may be used in localized areas for cutting the slabs to separate the U-beams for removal by lifting one by one. Excavator mounted breakers with sound-proof hammer bracket or hydraulic breaker will be used in any case to break the pier head for the connection with the reconstructed IEC.

Central-Wan Chai Bypass –Tunnel (North Point Section) and Island Eastern Corridor Link

- 3.3 As an alternative arrangement on the demolition method for IEC, saw cutting method will be fully adopted in the U-beam separation, whilst wire cutting method will be adopted to replace conventional concrete breaking method to separate the U-beams from the existing piers. Besides, the pier heads and columns will be removed by wire cutting and lifting by cranes instead of conventional breaking work by excavator mounted breakers.
- 3.4 Apart from the above alternative arrangement, the alignment / height of the temporary noise barriers at some locations will be varied from the EP due to different site constraints.
- 3.5 The original alignment of the temporary noise barriers along the IEC as per EP requirement is indicated in Figure 1b (i.e. black dotted line). The proposed realignment of such type of temporary noise barriers is also indicated in Figure 1b (i.e. red dotted line). The photos showing the general views of the subject site and its surrounding environment with the nearest sensitive receivers are indicated in Figure 1b and Appendix 3.
- 3.6 The original location of the temporary noise barriers is shown in Figure 2 of the EP. Figure 1c shows the proposed layout of temporary noise barriers requiring realignment or modification. There are totally 3 nos. of locations requiring realignment or modification of temporary noise barriers, which are situated:
- (1) at the end of Watson Road opposite Victoria Centre (namely area A1 as indicated in Figure 1b);
 - (2) opposite Harbour Grand HK Hotel (namely area A2); and
 - (3) between Oil Street and City Garden Block 10 (namely area A3).
- 3.7 The original location of the temporary noise barriers required for demolition of crossheads and piers of existing marine section of IEC is shown in Figure 3 of the EP. Figure 1f shows the proposed layout of temporary noise barriers requiring modification (namely area A4 as indicated in Figure 1b).
- 3.8 The details of temporary noise barriers requiring realignment / modification at the above concerned areas are mentioned as follows:

Area A1 – Temporary Noise Barriers at End of Watson Road opposite Victoria Centre

- 3.8.1 The alignment of the temporary noise barriers has to be revised since:
- i) the basement car park of Food and Environmental Hygiene Department (FEHD) was located underneath this work area and some part of the site area has already been returned to the FEHD for daily operation; and
 - ii) placing the up-to-soffit noise barriers would cause structural damage to the ground floor slab of the FEHD basement car park and therefore the height of the temporary noise barriers has to be reduced.

The detail of the proposed realignment / modification of temporary noise barriers at this area is shown in Figure 1d.

Area A2 – Temporary Noise Barriers Opposite Harbour Grand HK Hotel (HGHK)

- 3.8.2 As requested by the HGHK, the installation of temporary noise barriers with height up to the soffit of the bridge deck area along the existing IEC structure opposite HGHK will hinder their business (Please refer to Appendix 4 for the minutes of meeting with HGHK). Therefore, movable noise barriers are proposed to be placed during the demolition and construction of substructure for the IEC. The detail of the proposed modification of temporary noise barriers at this area is shown in Detail A of Figure 1e.

Area A3 – Temporary Noise Barriers between Oil Street and City Garden Block 10

- 3.8.3 As mentioned in Section 3.3, the pier heads and the columns of the IEC will be removed by wire cutting and lifting by cranes. The installation of temporary noise barriers with height up to the soffit of the bridge deck area along the existing IEC structure will obstruct such operation. For the safety consideration, the alignment and height of the temporary noise barriers have to been revised and reduced for lifting operation by cranes for the demolition and construction of IEC superstructure and substructure and to allow working

Central-Wan Chai Bypass –Tunnel (North Point Section) and Island Eastern Corridor Link

space for temporary storage of demolished beams from the IEC. The detail of the proposed realignment / modification of temporary noise barriers at this area is shown in Figure 1e.

Area A4 – Temporary Noise Barriers at Marine Section of IEC in front of City Garden

- 3.8.4 With the change of the demolition method from conventional breaking method to wire cutting and lifting for the IEC substructure at marine section, the layout of temporary noise barriers has been modified which are installed at noise sources (i.e. the noise generated from the saw cutting / wire cutting machines) such that the construction noise impact to NSRs will be minimized. The detail of the proposed modification of temporary noise barriers at this area is shown in Figure 1f.

4. Potential environmental impacts and proposed environmental mitigation measures

- 4.1 The following paragraphs summarise the nature and extent of the key environmental impacts arising from the alternative arrangement mentioned in Section 3 above. Additional impact on waste generation due to the alternative arrangement is considered insignificant as no additional waste was generated.

5. Air Quality

End of Watson Road opposite Victoria Centre / Opposite Harbour Grand HK Hotel (HGHK)

- 5.1 As observed, the nearest domestic premise at Watson Road is Victoria Centre, which is identified as the Air Sensitive Receivers (ASR) for this assessment.
- 5.2 With curtain walls installed at HGHK, the air quality impact is not significant and therefore HGHK is not identified as the ASR for this assessment.
- 5.3 At the end of Watson Road opposite Victoria Centre, the air quality impact from the subject site would mainly be related to dust from demolition of substructures and material handling. Considering that the site is a hard paving ground, there would be no other emission sources from dust generation that would cause adverse impact to the nearby ASRs.
- 5.4 The possible sources of air emissions from materials handling would be from the ingress and egress of vehicles for transportation of materials and the vehicle movement within the subject site under the IECL. However, since FEHD is located in between the site and the ASRs, site traffic will not pose any significant impacts to the ASRs. Nevertheless, the following mitigation measures would be implemented:
- The haul road of the subject site is paved and the road will be water sprayed to minimize any fugitive dust emission due to vehicle movements.
 - Water spray during excavation and demolition works;
 - Stockpiles of dusty materials would be covered or sprayed with water during dry or windy conditions to prevent airborne dust impact if necessary;
 - Ultra Low Sulfur Diesel will be used in for all construction plants as far as possible;
 - Fugitive dust generation from loading/unloading activities would be limited by depositing the excavated materials from a minimum practical height;
 - Exposed soil would be covered as far as practicable.
- 5.5 With the implementation of the above mitigation measures, the air quality impact is considered not significant.

Central-Wan Chai Bypass –Tunnel (North Point Section) and Island Eastern Corridor Link

Works area beneath IEC bridge between Oil Street and City Garden Block 10 and Marine Section of IEC in front of City Garden

- 5.6 As observed, from Oil Street to marine side (towards North Point), there are some domestic premises such as Wan Wah Mansion (which is behind Harbour Grand HK Hotel) and from City Garden to Provident Centre, which are identified as the ASRs for this assessment.
- 5.7 The air quality impact from the proposed subject site would mainly be related to dust from construction activities such as excavation, demolition, and material handling activities which would have impact to the nearby sensitive receivers.
- 5.8 To reduce the air quality impact, the following mitigation measures would be implemented:
- Haul road will be water sprayed regularly to minimize any fugitive dust emission due to vehicle movements;
 - Water spray during excavation, the demolition of pile caps and columns;
 - Stockpiles of dusty materials would be covered or sprayed with water during dry or windy conditions to prevent airborne dust impact if necessary;
 - Ultra Low Sulfur Diesel will be used in for all construction plants as far as possible;
 - Fugitive dust generation from loading/unloading would be limited by dropping the excavated materials from only a minimum practical height;
 - To minimise dust emissions, the amount of soil exposed would be kept as low as possible.
- 5.9 With the implementation of the above mitigation measures, the air quality is considered not significant.

6. Noise

- 6.1 As mentioned in Section 3.3, saw cutting method will be fully adopted in the U-beam separation, whilst wire cutting method will be adopted to replace conventional concrete breaking method to separate the U-beams from the existing piers. Besides, the pier heads and columns will be removed by wire cutting and lifting by cranes instead of conventional breaking work by excavator mounted breakers. The construction noise impact on the demolition of IEC substructure has been significantly reduced compared with conventional method as stated in EIA report.
- 6.2 Besides, due to various site constraints, the installation of such temporary noise barriers cannot be carried out at some locations or the alignment has to be amended as compared with those as stated in the EP. Such constraint will continue to exist during the remaining construction period of the demolition and construction of substructure for the Island Eastern Corridor (IEC) and construction of adjacent tunnel approach ramp structure. Hence, different types of temporary noise barriers have been proposed for Area A1 to A3 as shown in Figures 1d and 1e.

Area A1 – End of Watson Road opposite Victoria Centre

- 6.3 This area has been occupied since April 2013. As the basement car park of Food and Environmental Hygiene Department (FEHD) was located underneath this work area and some part of site area has already been handed back to the FEHD for daily operation, the alignment of the temporary noise barrier has to be revised. Furthermore, the height of the temporary noise barrier has to be reduced because engineering calculation revealed that placing the up-to-soffit noise barriers on location according to figure 2 of the Environmental Permit would cause structural damage to the ground floor slab to the basement car park of the FEHD depot. This proposal has been addressed in the Noise Management Plan (Rev. 3) which was submitted to EPD on 15 March 2013.
- 6.4 As observed, the nearest domestic premise at Watson Road is Victoria Centre, which is identified as the Noise Sensitive Receivers (NSR) for this assessment.

Central-Wan Chai Bypass –Tunnel (North Point Section) and Island Eastern Corridor Link

- 6.5 At the end of Watson Road opposite Victoria Centre, the construction noise impact from the subject site would mainly be related to the demolition and construction of substructures. We have exhausted all practicable mitigation measures as required in TM-EIAO at this area in order to minimize the construction noise impact to nearby residents. Temporary noise barriers have been placed as indicated in Figure 1d and alternative demolition method as stated in Section 6.1 has been adopted to minimize environmental nuisance to the nearby NSRs.

Area A2 – Opposite Harbour Grand HK Hotel (HGHK)

- 6.6 This area is located in front of the Hotel Harbour Grand Hong Kong (HGHK) and has been occupied since February 2014. As requested by the HGHK, the installation of temporary noise barriers with height up to the soffit of the bridge deck area along the existing IEC structure within this area will hinder their business (refer to Appendix 4). As such localized movable noise barrier is proposed to be placed during the demolition and construction of substructure for the IEC (refer to Figure 1e). This proposal has been addressed in the Noise Management Plan (Rev. 3) which was submitted to EPD on 15 March 2013.
- 6.7 As observed, HGHK is identified as the Noise Sensitive Receivers (NSR) for this assessment.
- 6.8 We have exhausted all practicable mitigation measures as required in TM-EIAO at this area in order to minimize the construction noise impact to nearby residents. Curtain walls were installed at HGHK and temporary noise barriers have been placed as indicated in Figure 1e and alternative demolition method as stated in Section 6.1 has been adopted to minimize environmental nuisance to the nearby NSRs.

Area A3 – Between Oil Street and City Garden Block 10

- 6.9 This area has been occupied. Demolition of the bridge deck for the IEC has commenced in May 2015. As the alignment of temporary noise barriers will obstruct the construction of substructure for the IEC and its height at some locations will obstruct the movement of the mobile plant during its operation when demolishing the superstructure, both the alignment and the height of the temporary noise barriers have to be revised. Further elaboration on the impact of proposed change will be addressed in following session.
- 6.10 The construction of substructure for the tunnel approach ramp is expected to commence in late 2015. With the site constraints as mentioned above, continuous temporary noise barriers placed with details as shown in Figure 1e will be installed from Eastern side of Oil Street to City Garden Block 10.
- 6.11 Practical difficulties in installing the temporary noise barrier are shown in S6.12 to S6.14.
- 6.12 Within Area A3, the following works will be carried out:
- (i) Substructure construction for Administration Building (ground beam);
 - (ii) Extension of existing IEC pile caps;
 - (iii) Demolition & construction of IEC; and
 - (iv) Construction of Approach Ramp.
- 6.13 The substructures to be constructed under the IEC includes:
- (a) Pile caps reconstruction and pile cap tie-in works for the IEC – Some piles requiring tie-in for the IEC are either too close to the original alignment of the temporary noise barriers or pile cap is required to be extended from underneath of the IEC and extended beyond the alignment.
 - (b) Substructure works for the construction of Administration Building which sits directly under the IEC – The piling works and the pile caps for the Administration Building sits on the alignment of the temporary noise barriers, therefore the temporary noise barriers have to be shifted outward towards the site boundary.

Central-Wan Chai Bypass –Tunnel (North Point Section) and Island Eastern Corridor Link

- (c) pile cap extension works can only start after the demolition of the IEC with the demolition sequence starting from the bridge deck, then the columns and finally down to the pile cap. The demolition works will be carried out using wire saw cutting (which is more quiet) instead of pneumatic breaker. The pile cap will then be extended by inserting re-bars at it's side and concreting it. After the extension of the pile caps, the construction of columns on it followed by the deck can commence. Therefore, the above revised alignment of temporary noise barriers will be maintained during the demolition and reconstruction of the IEC.
- (d) Between Oil Street and City Garden Block 10, as observed, Wan Wah Mansion (which is behind Harbour Grand HK Hotel) and City Garden Block 10 &11 (Block 11 nearer to the site) are the nearest Noise Sensitive Receiver (NSR). For this works area, the pier heads and the columns of the IEC will be removed by wire cutting and lifting by cranes. The installation of temporary noise barriers with height up to the soffit of the bridge deck area along the existing IEC structure will obstruct such operation. For the safety consideration, the alignment and height of the temporary noise barriers have to been revised and reduced for lifting operation by cranes for the demolition and construction of IEC superstructure and substructure. However, as pile cap is not required to be removed for works area facing opposite City Garden Block 10/11, temporary noise barrier with height up to soffit will be kept. But again due to the operation of plants as mentioned above, the alignment of the temporary noise barrier will be along the boundary to City Garden. The detail of the proposed realignment / modification of temporary noise barriers at this area are shown in Figure 1e.
- 6.14 Besides, as the working space for pile cap reconstruction is restricted and the work requires heavy lifting operation of mobile plants, for the sake of safety, the height of temporary noise barriers has to be reduced to avoid possible collision with the lifting jibs of mobile plants during the work which results in overturning of the temporary noise barriers (refer to Section A-A in Figure 1e). Therefore, temporary noise barriers with an overall height of 5 m have been erected at in front of City Garden instead of under the IEC soffit.
- 6.15 Apart from the above, the construction of the approach ramp will also be carried out. The approach ramp can be divided into 3 stages, mainly excavation, re-bar fixing and concreting. It is anticipated that with the temporary noise barriers installed as shown in Figure 1e, additional movable noise barriers at the source of construction will further minimize noise nuisance.
- 6.16 Regarding the potential impact on the above proposed changes, we have exhausted all practicable mitigation measures as required in TM-EIAO in order to minimize the construction noise impact to nearby residents (e.g. City Garden), including the installation of temporary noise barriers and the use of movable noise barriers. Apart from City Garden, another areas adjacent to this works area are a private development (i.e. Cheung Kong) construction site and Hong Kong Electric Substation (HKE), the establishment of temporary noise barriers with 5m in height will block the line of sight between the nearest noise sensitive receivers namely, Man Wah Mansion (behind Harbour Grand HK Hotel) and approach ramp construction area. Movable noise barriers at sources have also been provided to further reduce the construction noise level.
- 6.17 In order to be able to demolish the substructure, the deck of the existing IEC needs to be demolished. The demolition work started from the westbound bridge deck of existing IEC which has commenced in May 2015 and the combined screening effect of the temporary noise barriers (with height up to soffit) and bridge deck would not exist in the remaining construction period of the demolition and construction of substructure for the IEC and construction of adjacent tunnel approach ramp structure after the removal of the soffit of the bridge deck. Even though there are practical difficulties in providing the up-to-soffit noise barriers strictly according to Figure 2 of the EP and there will be exceedance of construction noise limit, we have **exhausted all practicable mitigation measures** as required in TM-EIAO in order to minimize the construction noise impact to nearby residents including the use of movable noise barriers.
- 6.18 Furthermore, an updated noise assessment of cumulative impacts due to construction work with reference to (i) Appendix 4.13 - Powered Mechanical Equipment (PME) for the Different Construction Tasks during Normal Daytime Working Hours (with Mitigation Measures), and (ii) Appendix 4.14 - Calculations and Results of Construction Noise Impacts During Normal Daytime Working Hour (with Mitigation Measures) of

Central-Wan Chai Bypass –Tunnel (North Point Section) and Island Eastern Corridor Link

approved EIA report has been carried out (refer to Appendix 5). It is noted that the construction noise impact due to the proposed changes on the temporary noise barriers is negligible when comparing with the estimated noise level during EIA stage.

- 6.19 However, as a further measure for noise mitigation, the following suggested measures will be implemented during construction stage:
- (a) Only one construction task will be carried out at any time through thorough planning of works;
 - (b) Installation of movable noise barriers at noise source (including the construction of Approach Ramp) to achieve noise reduction.
- 6.20 We have exhausted all practicable mitigation measures as required in TM-EIAO in order to minimize the construction noise impact to nearby residents. Temporary noise barriers have been placed as indicated in Figure 1e and additional movable noise barrier has been placed at source to minimize environmental nuisance to the nearby NSRs.

Area A4 – Marine Section of IEC in front of City Garden

- 6.21 To further reduce noise nuisance, the demolition of the existing piers and crossheads for the marine section of the existing IEC will be carried out using wire cutting method instead of pneumatic breakers as mentioned above. The section will then be transported away from the works area. With demolition of the existing piers and crossheads not employing pneumatic breakers, temporary noise barrier as shown in Figure 3 of the Environmental Permit will not serve its original purpose. Temporary / Movable noise barriers will be installed at source as shown in Figure 1f.
- 6.22 With the change of the demolition method from conventional breaking method to wire cutting and lifting for the IEC substructure at marine section, the layout of temporary noise barriers has been modified which are installed at noise sources (i.e. the noise generated from the saw cutting / wire cutting machines) such that the construction noise impact to NSRs will be minimized.
- 6.23 We have exhausted all practicable mitigation measures as required in TM-EIAO in order to minimize the construction noise impact to nearby residents. Temporary noise barriers have been placed locally at source (i.e. movable noise barriers).
- 6.24 A review on construction noise impact has been conducted for the alternative arrangement on the demolition and construction of substructures. (please refer to Appendix 5).
- 6.25 With the alternative arrangement as stated in Section 6.1 above, associated noise mitigation measures have been implemented to minimize noise nuisance to the NSRs:
- (i) Ensure that all plant and equipment to be used are properly maintained and in good operating condition;
 - (ii) The use of Quality Powered Mechanical Equipment (QPME) plant as far as practicable;
 - (iii) Powered Mechanical Equipment would be switched off when idling; and
 - (iv) The use of additional movable noise barrier at construction noise sources as additional noise mitigation measures to cut off the line of sight between the PME and the NSR.
- 6.26 To minimize environmental nuisance to the nearby NSRs, we have exhausted all practicable mitigation measures as required in TM-EIAO in order to minimize the construction noise impact to nearby residents.

7. Visual

End of Watson Road opposite Victoria Centre

- 7.1 With temporary noise barrier constructed below the IEC there will be no line of sight between the sensitive receivers (Victoria Centre) and the construction of substructure works. Therefore, the visual impact is considered insignificant.

Central-Wan Chai Bypass –Tunnel (North Point Section) and Island Eastern Corridor Link

Opposite Harbour Grand HK Hotel (HGHK)

- 7.2 As requested by the HGHK, the installation of temporary noise barriers with height up to the soffit of the bridge deck area along the existing IEC structure opposite HGHK will hinder their business. Therefore, the localized movable noise barrier is proposed to cover the line of sight of the construction activities and the visual impact is considered insignificant.

Works area beneath IEC bridge between Oil Street and City Garden Block 10

- 7.3 Between Oil Street and City Garden there is a private construction site and a Hong Kong Electric Substation (HKE) next to it. This is not identified as a VSR and no impact is anticipated.
- 7.4 To reduce visual impact to the VSRs, the following mitigation measures would be implemented:
- Erection of movable noise barriers or temporary noise barriers (Figure 1e); and
 - Control of night- time lighting by
 - (i) Position and aim the lighting properly to avoid overspill of light to outside the area being lit up.
 - (ii) Ensure the external lighting is appropriately positioned, aimed or shielded so that illumination of nearby roads will not be adversely affected.
 - (iii) Position of lighting away from VSRs and facing down towards the site.

Marine Section of IEC in front of City Garden

- 7.5 Both City Garden and Provident Centre are identified as VSRs for this assessment.
- 7.6 With the installation of temporary noise barriers (identified in the Environmental Impact Assessment (EIA)) placed locally at source, the visual impact is considered insignificant.
- 7.7 To reduce the visual impact, the following mitigation measures would be implemented:
- Erection of movable noise barriers and temporary noise barriers (Figure 1f); and
 - Control of night- time lighting by placing light source away from VSRs and facing down.

8. Water

- 8.1 With the alternative arrangement as stated in Section 3 above, water will be used as a cooling agent to reduce the heat generated from saw cutting and wire cutting operations to avoid overheating of the machinery.
- 8.2 The following control measures would be implemented during the usage of water for saw cutting and wire cutting operations:
- bunds will be formed to confine the used water for the saw cutting or wire cutting operation.
 - The quantity of water to be used for cooling during saw cutting / wire cutting operation is approximately 420 litres per hour (or 117 ml/s). The used water (which might be possibly mixed with the concrete debris generated from saw cutting / wire cutting operation) will be collected and transferred to the local wastewater treatment plant (e.g. Wetsep) with treatment capacity of 80 cu.m (i.e. 80,000 litres) per hour, which is sufficient to treat those used water.
 - Instead of discharging the used water after treatment to approved discharge point in accordance with the water discharge licence under the Water Pollution Control Ordinance (WPCO), the water will be reused for watering on haul road for dust suppression as a sustainable measure to the environment.
- 8.3 With the implementation of the above control measures, the impact on water quality is considered insignificant.

9. Conclusion

Central-Wan Chai Bypass –Tunnel (North Point Section) and Island Eastern Corridor Link

- 9.1 With the alternative arrangement on the demolition and construction of substructures for the IEC and implementation of corresponding control measures and mitigation measures, the environmental nuisance (including noise, air, water and visual impacts) to these sensitive receivers is considered insignificant.
- 9.2 Saw cutting and wire cutting methods have been adopted for the demolition and construction of substructures for the IEC. Associated noise mitigation measures will be implemented to minimize noise nuisance to the NSRs:
- Ensure that all plant and equipment to be used are properly maintained and in good operating condition;
 - Prohibition of any noisy operations during restricted hours (i.e. any day not being a general holiday 1900 – 0700 next day; and general holiday including Sundays 0000 - 2400) unless a Construction Noise Permit has been granted;
 - The use of Quality Powered Mechanical Equipment (QPME) plant if possible;
 - Noise Emission Labels would be applied for air compressors with an air pressure not less than 500 kPa and handheld percussive breakers with weight not less than 10kg. No such PME would be used without a valid Noise Emission Label;
 - Powered Mechanical Equipment would be switched off when idling; and
 - The use of movable noise barrier if necessary.
- To minimize environmental nuisance to the nearby NSRs, we have exhausted all practicable mitigation measures as required in TM-EIAO in order to minimize the construction noise impact to nearby residents.
- 9.3 With the proposed mitigation measures mentioned below, the visual impact to sensitive receivers is considered insignificant:
- Erection of movable noise barriers and temporary noise barriers and
 - Control of night- time lighting by placing light source away from VSRs and facing down.

Reference:

Technical Memorandum on Environmental Impact Assessment Process, published by EPD, HKSAR

A Guide to the EIA Ordinance, published by EPD, HKSAR

Technical Memorandum on Noise from Construction Work other than Percussive Piling

Guidelines on Industry Best Practices for External Lighting Installation, issued by Environmental Bureau dated January 2012

END

Appendix 1

1. **Figure 1a - Site layout plan for IEC reconstruction**
2. **Figure 1b - Original layout and proposed realignment of temporary noise barriers for IEC reconstruction**
3. **Figure 1c - Proposed layout of temporary noise barriers requiring modification / realignment (with reference to Figure 2 of EP-364/2009/C)**
4. **Figure 1d – Detail of proposed realignment / modification of temporary noise barriers at Watson Road**
5. **Figure 1e – Detail of proposed realignment / modification of temporary noise barriers at Oil Street**
6. **Figure 1f – Proposed layout of temporary noise barriers requiring modification (with reference to Figure 3 of EP-364/2009/C)**

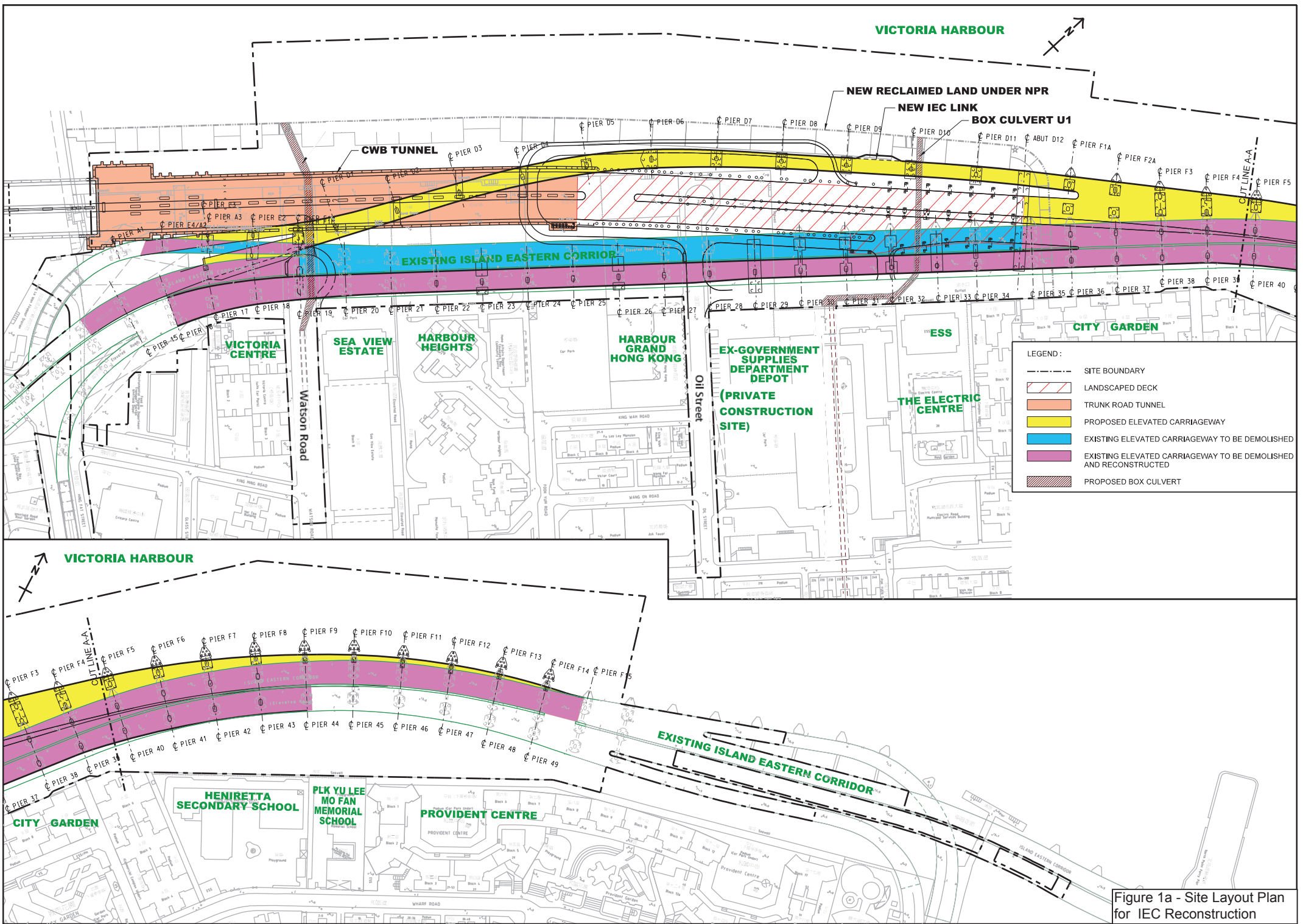


Figure 1a - Site Layout Plan for IEC Reconstruction

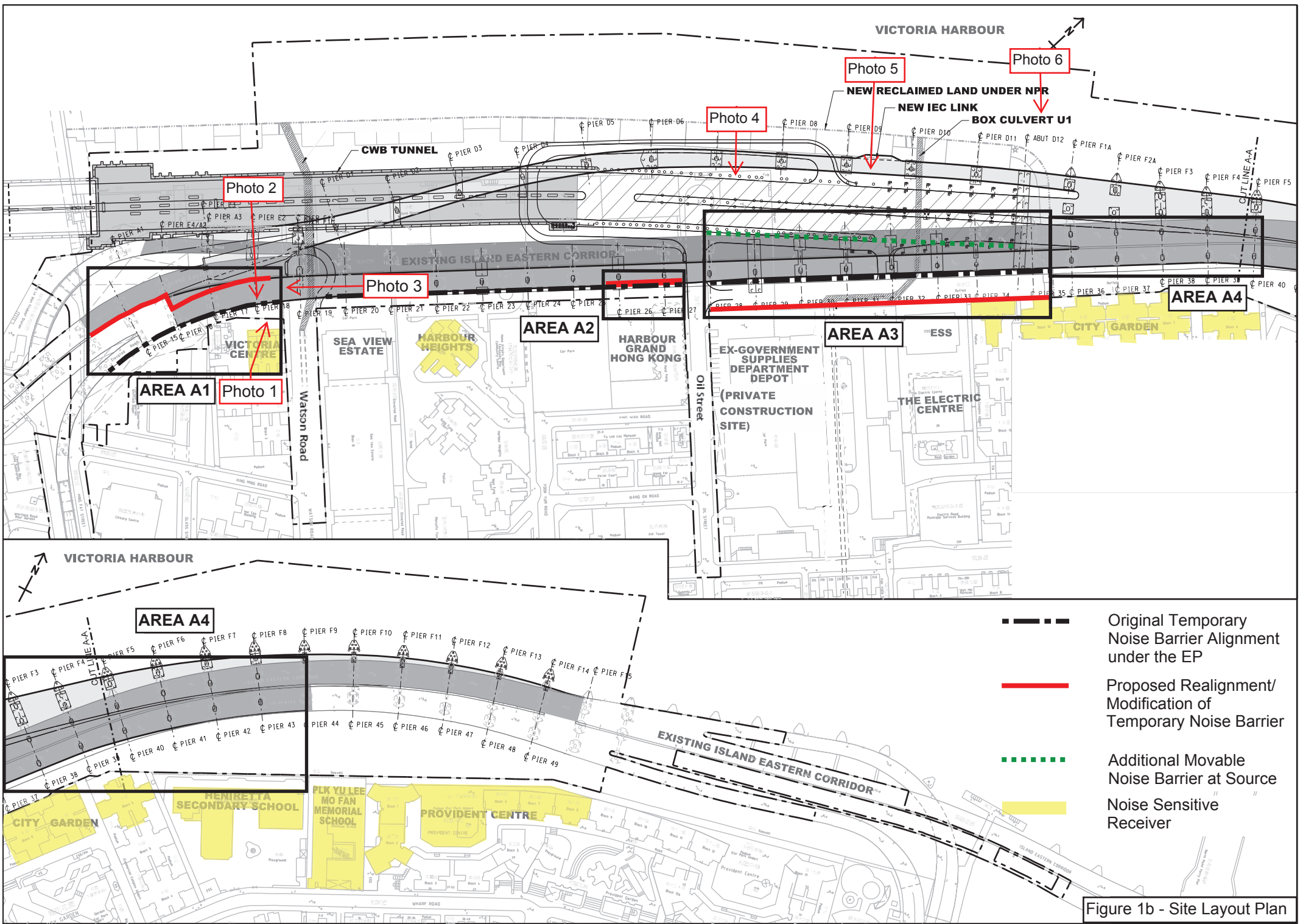
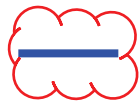


Figure 1b - Site Layout Plan

LEGEND: 圖例

-  LINE OF TEMPORARY NOISE BARRIER
臨時隔音屏障位置
-  LINE OF TEMPORARY NOISE BARRIER
(TO BE PLACED AT LOCATIONS
WHERE CONSTRUCTION WORKS ARE
IN PROGRESS)
施工期間設置的臨時隔音屏障位置



Temporary Noise Barrier
Requiring Realignment /
Modification



VICTORIA HARBOUR
維多利亞港

NPR2E

CITY GARDEN

RECLAMATION EXTENT
填海範圍

NPR1

NPR2W

Temporary Noise Barriers as
per EP-364/2009/C

Proposed Realignment of Temporary Noise
Barriers at the end of Watson Road opposite
Victoria Centre
(See Section 3.8.1 of EAR and Figure 1d for detail)

Proposed Modification of Temporary
Noise Barriers opposite Harbour
Grand HK Hotel
(See Section 3.8.2 of EAR and Figure
1e for detail)

Proposed Realignment of
Temporary Noise Barriers
at works area beneath IEC
bridge between Oil Street
and City Garden Block 10
(See Section 3.8.3 of EAR
and Figure 1e for detail)



Central - Wan Chai Bypass - Tunnel (North Point Section) and
Island Eastern Corridor Link

Figure 1c - Proposed Layout of Temporary Noise Barriers
Requiring Modification / Realignment (with Reference to
Figure 2.9 of EP-364/2009/C)

- Project Site Boundary
- Original Temporary Noise Barrier as per EP-364/2009/C
- Proposed Alignment of Temporary Noise Barrier

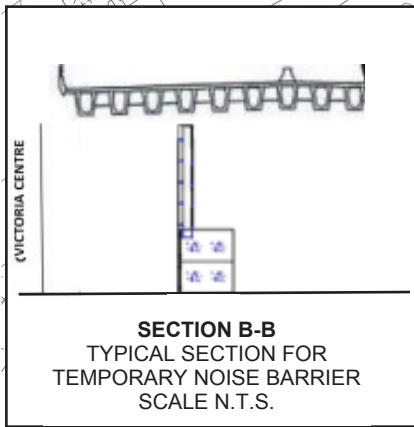
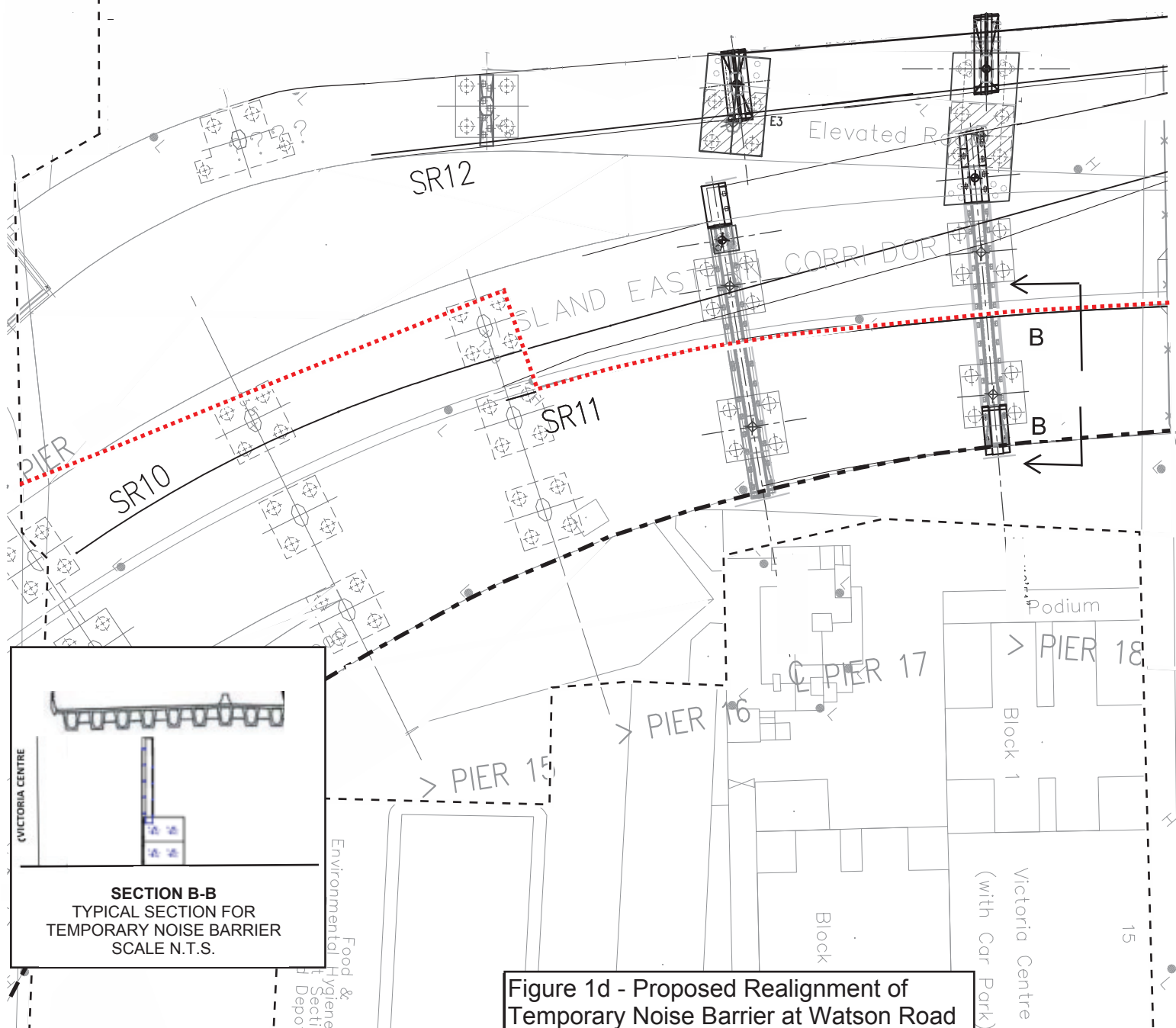
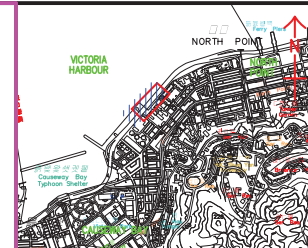


Figure 1d - Proposed Realignment of Temporary Noise Barrier at Watson Road

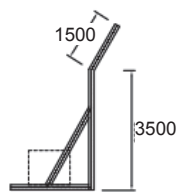
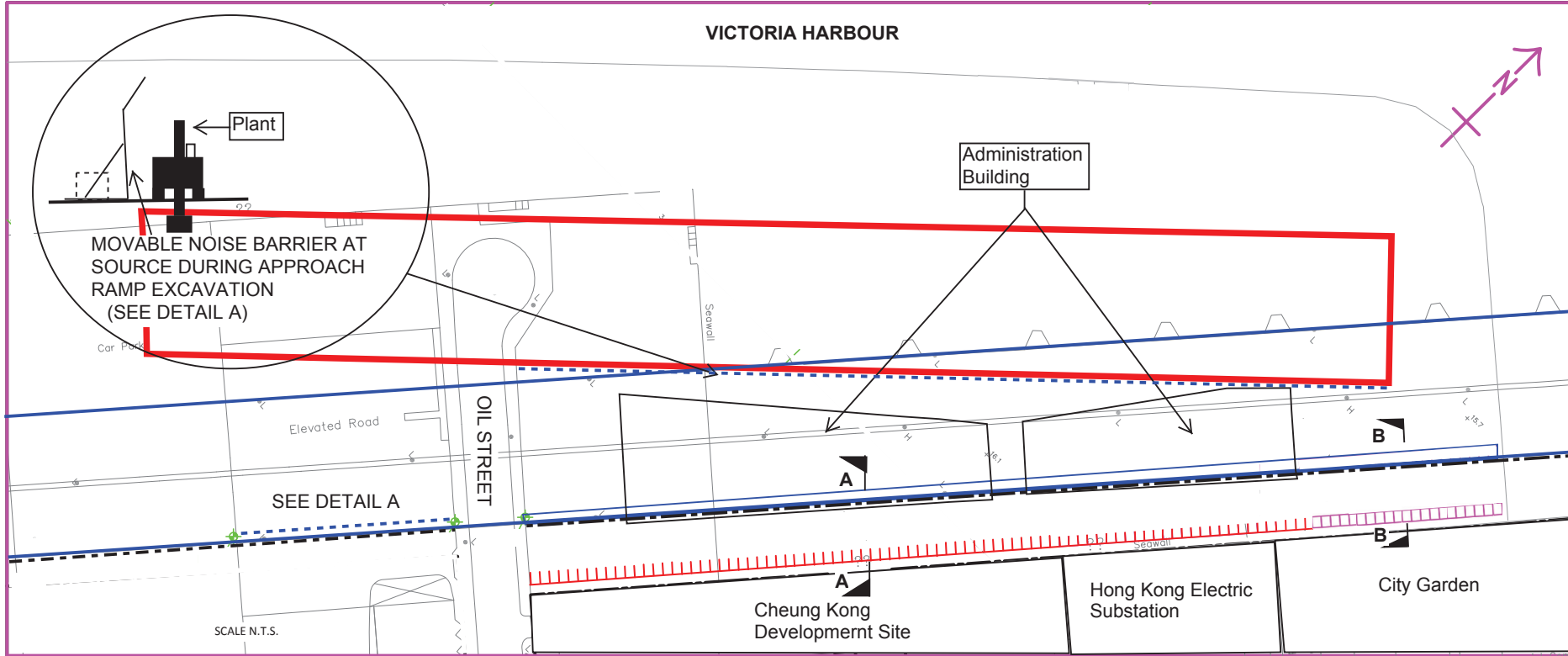
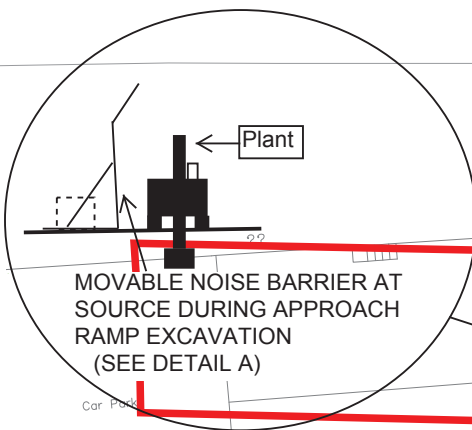
VICTORIA HARBOUR



KEY PLAN

LEGEND:

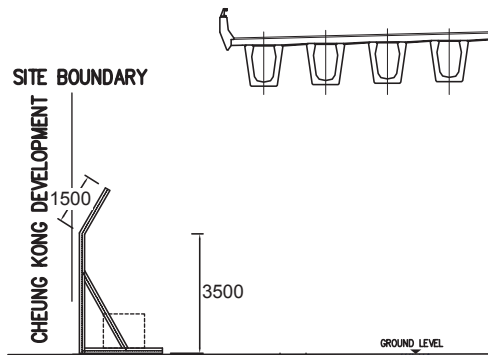
- Details refer to Section B-B
- Details refer to Section A-A
- Approach Ramp
- Existing Island Eastern Corridor (IEC)
- Original Temporary Noise Barrier
- Movable Noise Barrier



DETAIL A

TYPICAL SECTION FOR MOVABLE NOISE BARRIER AT SOURCE (THE BARRIER MATERIAL SHALL HAVE A SURFACE MASS OF NOT LESS THAN 14 Kg/m² ON SKID FOOTING WITH 25 mm THICK INTERNAL SOUND ABSORPTIVE LINING)

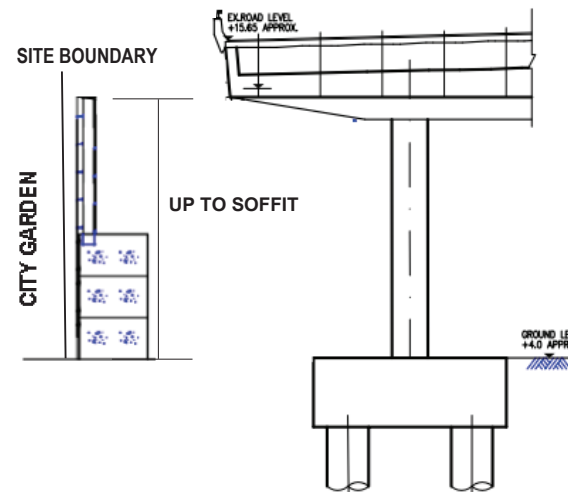
SCALE N.T.S.



SECTION A-A

TYPICAL SECTION FOR TEMPORARY NOISE BARRIER (THE BARRIER MATERIAL SHALL HAVE A SURFACE MASS OF NOT LESS THAN 14 Kg/m² ON SKID FOOTING WITH 25 mm THICK INTERNAL SOUND ABSORPTIVE LINING)

SCALE N.T.S.



SECTION B-B

TYPICAL SECTION FOR TEMPORARY NOISE BARRIER

SCALE N.T.S.

Figure 1e - Details of Temporary Noise Barriers (From Oil Street to City Garden Block 10)

LEGEND 圖例

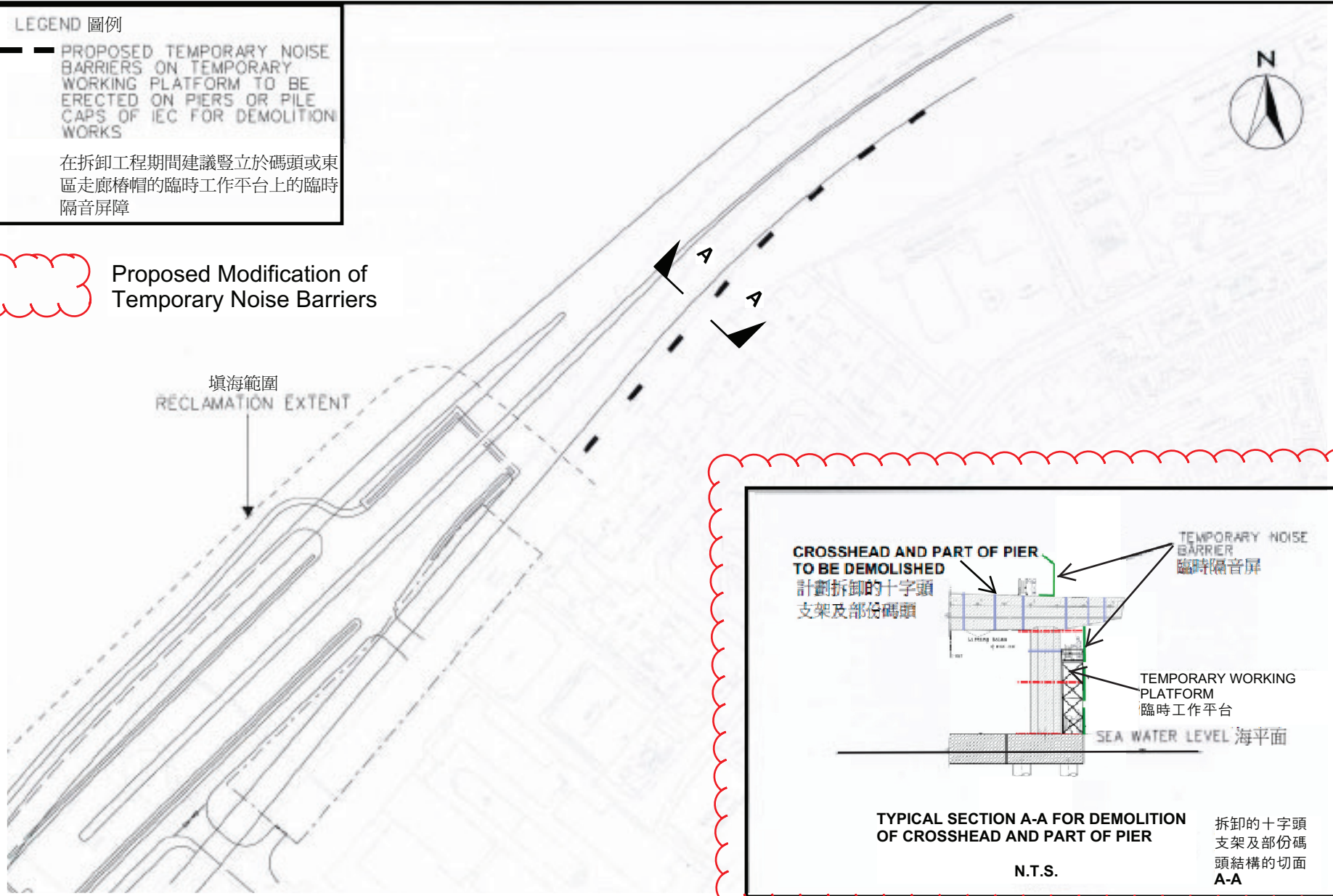
--- PROPOSED TEMPORARY NOISE BARRIERS ON TEMPORARY WORKING PLATFORM TO BE ERECTED ON PIERS OR PILE CAPS OF IEC FOR DEMOLITION WORKS

在拆卸工程期間建議豎立於碼頭或東區走廊樁帽的臨時工作平台上的臨時隔音屏障



Proposed Modification of Temporary Noise Barriers

填海範圍
RECLAMATION EXTENT



CROSSHEAD AND PART OF PIER TO BE DEMOLISHED
計劃拆卸的十字頭
支架及部份碼頭

TEMPORARY NOISE BARRIER
臨時隔音屏

TEMPORARY WORKING PLATFORM

臨時工作平台

SEA WATER LEVEL 海平面

TYPICAL SECTION A-A FOR DEMOLITION OF CROSSHEAD AND PART OF PIER

拆卸的十字頭
支架及部份碼頭結構的切面
A-A

N.T.S.



Central - Wan Chai Bypass - Tunnel (North Point Section) and Island Eastern Corridor Link

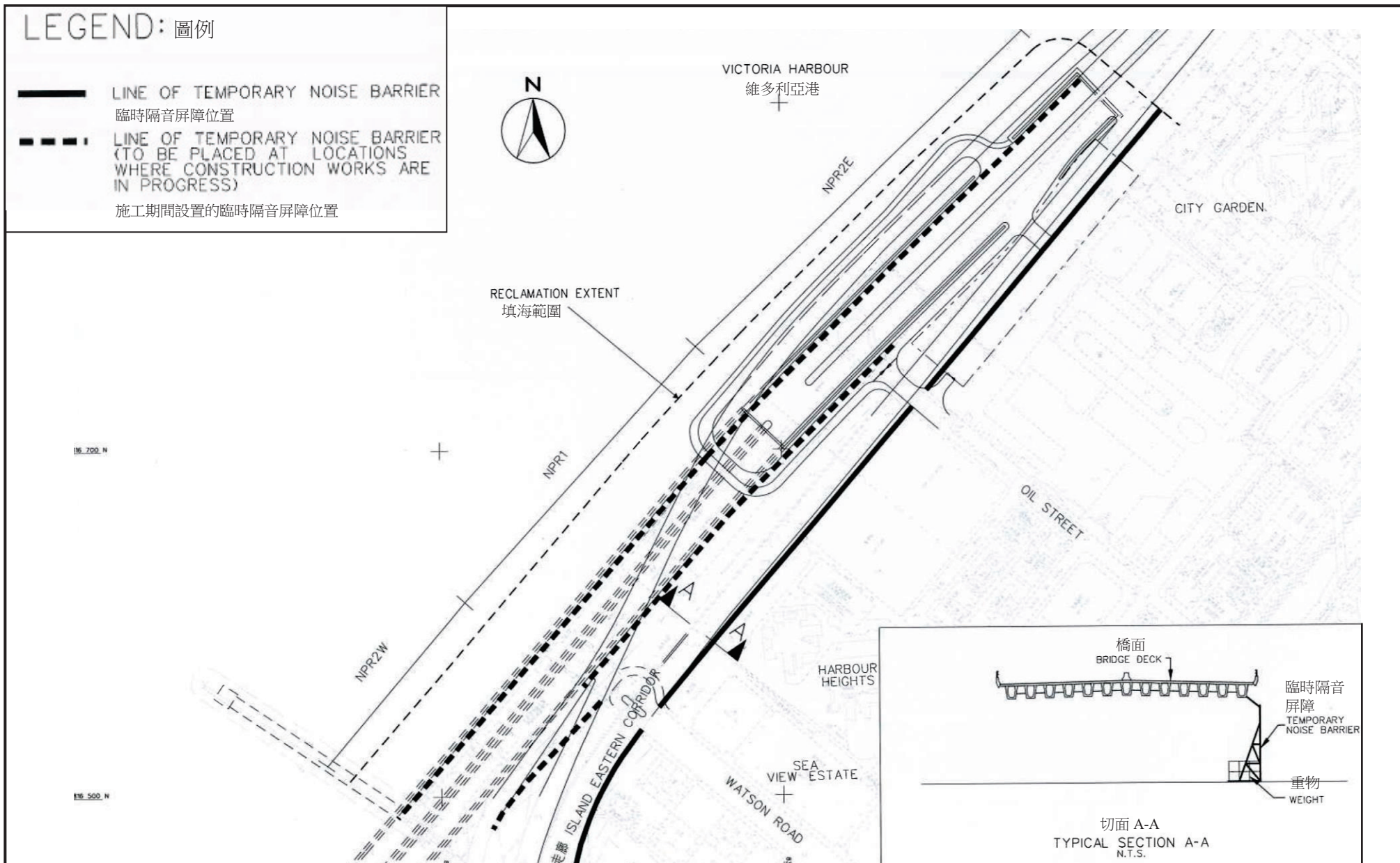
Figure 1f - Location and Typical Details of Temporary Noise Barrier during Demolition of Existing Piers and Crossheads in Marine Section of IEC

Appendix 2

- 1. Figure 2 of EP-364/2009C (for comparison)**
- 2. Revised Figure 2 for Variation of EP**
- 3. Figure 3 of EP-364/2009C (for comparison)**
- 4. Revised Figure 3 for Variation of EP**

LEGEND: 圖例

- LINE OF TEMPORARY NOISE BARRIER
 臨時隔音屏障位置
- LINE OF TEMPORARY NOISE BARRIER
 (TO BE PLACED AT LOCATIONS
 WHERE CONSTRUCTION WORKS ARE
 IN PROGRESS)
 施工期間設置的臨時隔音屏障位置





Project Title: Central-Wanchai Bypass (CWB) Including Its Road Tunnel and Slip Roads
 工程項目名稱：中環灣仔繞道包括其行車隧道及連接路

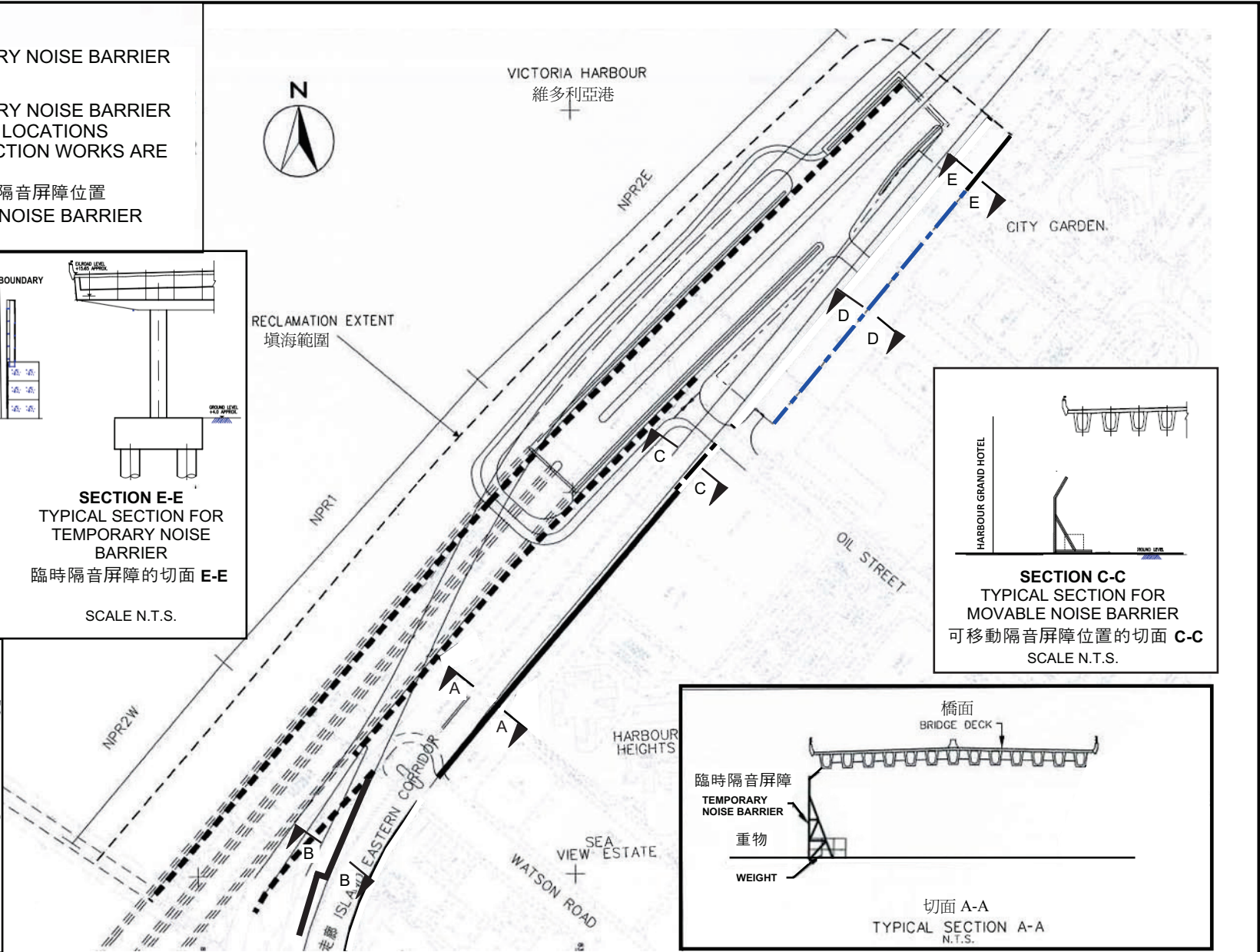
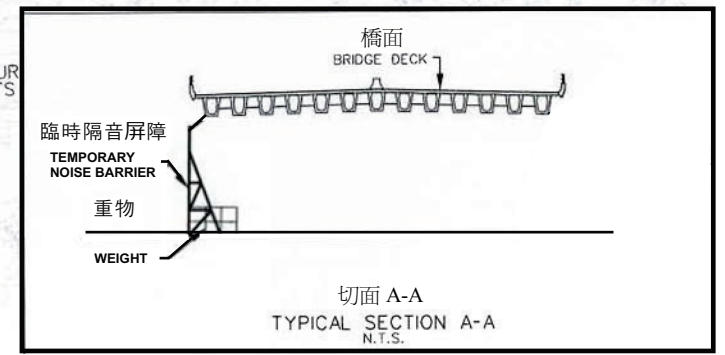
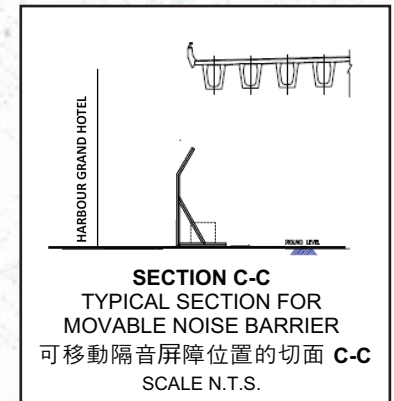
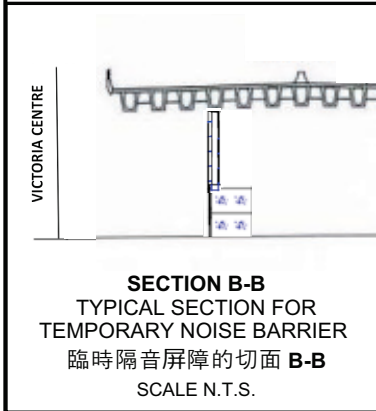
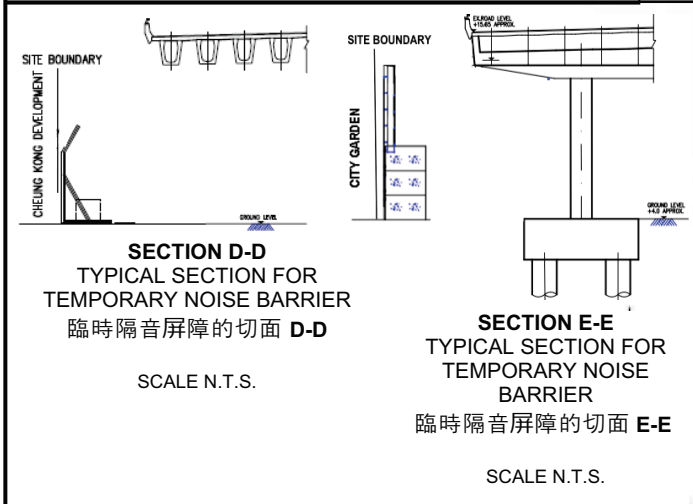
Environmental Permit No. : EP-364/2009/C
 環境許可證編號 : EP-364/2009/C

Figure 2: Location of Temporary Noise Barriers during Construction Phase in North Point Waterfront
 圖 2: 在北角海旁施工期間的臨時隔音屏障位置圖

(This figure was prepared based on Figure 4.9 of the WDII&CWB EIA report (Register No.: AEIAR-125/2008))
 (本圖是根據 WDII&CWB 環評報告 (登記冊編號 AEIAR-125/2008) 圖 4.9 編製)

LEGEND: 圖例

-  LINE OF TEMPORARY NOISE BARRIER
臨時隔音屏障位置
-  LINE OF TEMPORARY NOISE BARRIER
(TO BE PLACED AT LOCATIONS
WHERE CONSTRUCTION WORKS ARE
IN PROGRESS)
施工期間設置的臨時隔音屏障位置
-  LINE OF MOVABLE NOISE BARRIER
可移動隔音屏障位置




CHUN WO - CRGL - MBEC
JOINT VENTURE

Central - Wan Chai Bypass - Tunnel (North Point Section) and
Island Eastern Corridor Link

Figure 2: Location of Temporary Noise Barriers during Construction Phase in North Point Waterfront
圖 2: 在北角海旁施工期間的臨時隔音屏障位置圖

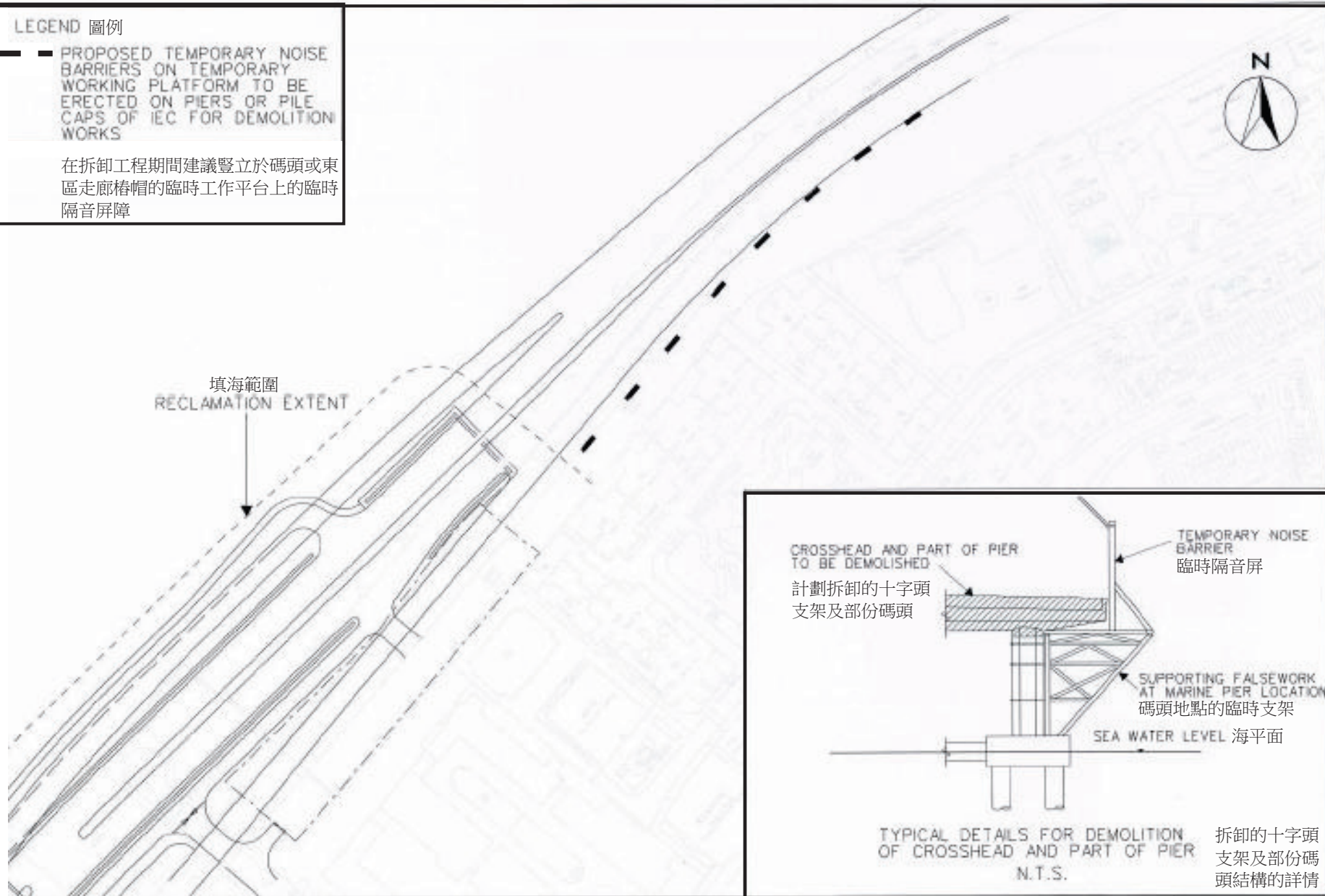
LEGEND 圖例

— PROPOSED TEMPORARY NOISE BARRIERS ON TEMPORARY WORKING PLATFORM TO BE ERECTED ON PIERS OR PILE CAPS OF IEC FOR DEMOLITION WORKS

在拆卸工程期間建議豎立於碼頭或東區走廊樁帽的臨時工作平台上的臨時隔音屏障



填海範圍
RECLAMATION EXTENT



Project Title: Central-Wanchai Bypass (CWB) Including Its Road Tunnel and Slip Roads
工程項目名稱：中環灣仔繞道包括其行車隧道及連接路

Environmental Permit No. : EP-364/2009/C
環境許可證編號 : EP-364/2009/C

Figure 3: Location of Temporary Noise Barriers during Demolition of Existing Piers and Crossheads in Marine Section of IEC

圖 3: 拆卸現有碼頭及東區走廊海面十字頭支架期間的臨時隔音屏障位置圖

(This figure was prepared based on Figure 4.9a of the WDII&CWB EIA report (Register No.: AEIAR-125/2008))
(本圖是根據 WDII&CWB 環評報告 (登記冊編號 AEIAR-125/2008) 圖 4.9a 編製)

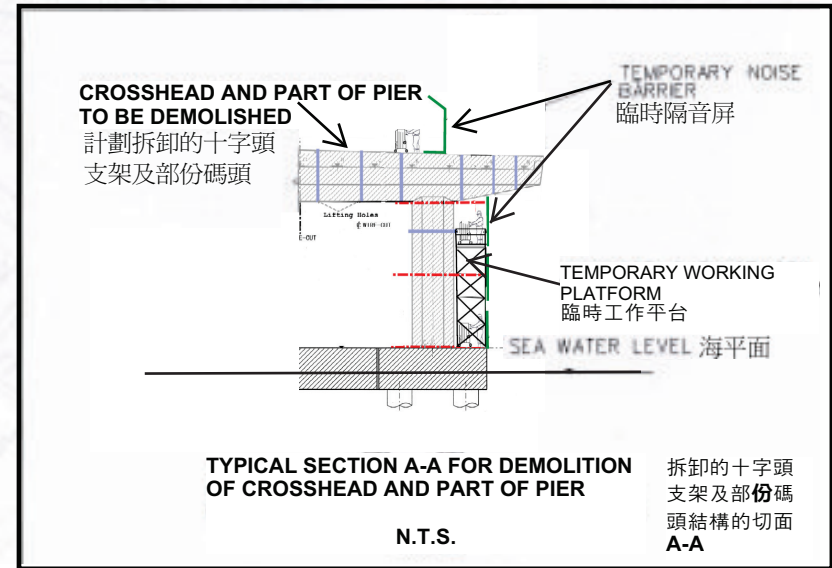
LEGEND 圖例

— PROPOSED TEMPORARY NOISE BARRIERS ON TEMPORARY WORKING PLATFORM TO BE ERECTED ON PIERS OR PILE CAPS OF IEC FOR DEMOLITION WORKS

在拆卸工程期間建議豎立於碼頭或東區走廊樁帽的臨時工作平台上的臨時隔音屏障



填海範圍
RECLAMATION EXTENT



Central - Wan Chai Bypass - Tunnel (North Point Section) and Island Eastern Corridor Link

Figure 3: Location of Temporary Noise Barriers during Demolition of Existing Piers and Crossheads in Marine Section of IEC

圖 3: 拆卸現有碼頭及東區走廊海面十字頭支架期間的臨時隔音屏障位置圖

拆卸的十字頭
支架及部份碼頭
結構的切面
A-A

Appendix 3

Photos of Works Area with Surrounding Environment and nearest Sensitive Receiver

Central-Wan Chai Bypass –Tunnel (North Point Section) and Island Eastern Corridor Link



Photo 1 - Victoria Centre (Facing FEHD)



Photo 2 - FEHD (Facing Victoria Centre)



Photo 3 - FEHD (Between Victoria Centre and the project site)



Photo 4 - Private Project Site to Harbour Grand HK Hotel (Wan Wah Mansion behind the Hotel)



Photo 5 - City Garden to HKE and Private Project Site



Photo 6 - Marine portion facing City Garden

Appendix 4

Minutes of Meeting with HGHK

Interface Meeting with Harbour Grand Hong Kong

Venue : 12/F., Cheung Kong Center

Date : 30 January 2013

Time : 10:00am

Attendance:	<u>Name</u>	<u>Company</u>	<u>Contract</u>
	Ms. Vanessa POON	Cheung Kong	Harbour Grand Hotel
	Mr. H H WU	Cheung Kong	Harbour Grand Hotel
	Mr. Ivan LI	Cheung Kong	Harbour Grand Hotel
	Mr. Ringo LAM	Cheung Kong	Harbour Grand Hotel
	Mr. Johan WONG	AECOM	HY/2009/19
	Mr. Paul YIM	AECOM	HY/2009/19
	Mr. K. C. CHEUNG	Chun Wo	HY/2009/19
	Mr. Eric FONG	Chun Wo	HY/2009/19

ITEM	CONTENT	ACTION BY
1.0	Carpark Requirements	
1.1	Chun Wo tabled a layout plan to show the proposed land area for temporary relocation of Harbour Grand Hotel's (HGH) carpark to facilitate the bored piles construction (see Appendix A).	Note
1.2	In order to relocate the existing HGH carpark, Chun Wo agreed to provide the following Portion IVA, IVB and part of IIA/IIB: <ul style="list-style-type: none"> i) Carpark space – 1800m² and formation of run in-out ii) Fencing for temporary carpark iii) Sufficient lighting inside carpark iv) Security booth v) 24 hrs. security guard for monitoring vi) Temporary CCTV (record with stand along computer) for carpark area vii) Car park marking 	Note
1.3	AECOM advised that FEHD would start to move out from their existing carpark area at Oil Street by April 2013 and the area would be handed over to Chun Wo immediately. Chun Wo confirmed that the said area as hatched in the layout plan would be ready for HGH's use as temporary carpark by early June 2013.	Note

ITEM	CONTENT	ACTION BY
1.4	HGH requested AECOM to confirm whether they could use the proposed land area as temporary carpark legally and free of charge.	AECOM
1.5	<p>Refer to the discussion in previous meeting, Chun Wo requested to early possess the existing HGH carpark area for piling works in 3 stages. In order to start the piling works, Chun Wo asked whether the Stage 1 area could be possessed now (see Appendix B).</p> <p>HGH advised that the area could only be available for construction if the insurance arrangement of both HGH and Chun Wo in regards with the use of concerned land area had been cleared.</p>	HGH / Chun Wo
1.6	HGH complaint that there were lots of construction works being carried out at Oil Street which caused negative impacts to HGH. AECOM / HyD were requested to review the associated works arrangement.	AECOM
1.7	Programme for temporary and permanent relocation of HGH's car park would be provided for reference.	Chun Wo
1.8	In regards with the site boundary line, HGH requested AECOM to provide the coordinates of the setting out points for their reference.	AECOM
1.9	HGH would like to know whether Chun Wo could relocate the hoarding line away from the hotel and not possess the area of café shop.	Note
1.10	<p>Chun Wo confirmed that in order to fulfill the condition of Environmental Permit (EP-364/2009/B), special hoarding (approx. 12m high) had to be erected. And in order to provide sufficient working space for the demolition and reconstruction of the bridge, the special hoarding had to be erected along the site boundary line which is within the HGH's café shop open area.</p> <p>To minimize the adverse impact to the café shop's operation, it was suggested that, instead of 12m high special hoarding, 5m high movable noise barrier would be erected outside the café shop's area along the boundary line as marked by Highways Department (HyD). And during the demolition of the existing bridge, Chun Wo suggested the café shop's</p>	Note

ITEM	CONTENT	ACTION BY
	<p>open area should be closed. The tentative closing date would be around Jun. 2015 to Sept. 2015. HGH preferred to have the works carried out at (<u>winter time</u>) and requested Chun Wo to confirm if the arrangement is feasible</p> <p>HGH had no objection to the arrangement of having the 5m high hoarding.</p>	
1.11	<p>HGH asked Chun Wo to send them a formal letter together with insurance information about the request for works area with a clear demarcation of responsibility held by each party.</p> <p>HGH requested the presence of representative from HyD in meetings</p>	Note

- End -

Appendix 5

Review on Construction Noise Impact (To be incorporated into the Noise Management Plan for submission)

Reference No. 1 - Comparing EIA Appendix 4.13:

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (With Mitigation Measures)

NSR: N18 City Garden, Block 10

Section 6.0 Construction of IECL

6.2 IEC Connection Work

6.2A Substructures (Group 1 and 2 PME)

Powered Mechanical Equipment (PME)	TM Ref. Identification Code	SWL (dB(A))	Quantity	On-time %	Reduction	Total SWL (dB(A))	
Concrete lorry mixer	Table C6/35	100	2	100%	0	103.0	1.995E+10
Poker, vibratory, hand-held	Table C6/32	100	2	70%	5	96.5	4.467E+09
Crane, mobile (diesel)	Table C7/114	101	2	70%	5	97.5	5.623E+09
Air Compressor	Table C7/16	96	1	100%	5	91.0	1.259E+09
Excavator, wheeled/tracked	Table C3/97	105	1	70%	5	98.5	7.079E+09
Water pump (electric)	CNP 281	88	2	100%	5	86.0	398107171
Concrete Pump	Table C6/35	100	0	100%	5	0.0	0
Piling, large diameter bored, oscillator	CNP 165	115	1	100%	5	110.0	1E+11
						111.4	

6.2A Substructures (Group 1 PME)

Powered Mechanical Equipment (PME)	TM Ref. Identification Code	SWL (dB(A))	Quantity	On-time %	Reduction	Total SWL (dB(A))	
Concrete lorry mixer	Table C6/35	100	1	70%	0	98.5	7.079E+09
Poker, vibratory, hand-held	Table C6/32	100	1	70%	5	93.5	2.239E+09
Crane, mobile (diesel)	Table C7/114	101	1	70%	5	94.5	2.818E+09
Air Compressor	Table C7/16	96	1	100%	5	91.0	1.259E+09
Concrete Pump	Table C6/35	100	0	100%	5	0.0	0
						101.3	

6.2A Substructures (Group 2 PME)

Powered Mechanical Equipment (PME)	TM Ref. Identification Code	SWL (dB(A))	Quantity	On-time %	Reduction	Total SWL (dB(A))	
Crane, mobile (diesel)	Table C7/114	101	1	70%	5	94.5	2.818E+09
Excavator, wheeled/tracked	Table C3/97	105	1	50%	5	97.0	5.012E+09
Water pump (electric)	CNP 281	88	1	100%	5	83.0	199526231
Piling, large diameter bored, oscillator	CNP 165	115	1	100%	5	110.0	1E+11
						110.3	

6.2B Superstructures

Powered Mechanical Equipment (PME)	TM Ref. Identification Code	SWL (dB(A))	Quantity	On-time %	Reduction	Total SWL (dB(A))	
Concrete lorry mixer	Table C6/35	100	2	100%	0	103.0	1.995E+10
Poker, vibratory, hand-held	Table C6/32	100	2	70%	5	96.5	4.467E+09
Crane, mobile (diesel)	Table C7/114	101	1	70%	5	94.5	2.818E+09
Air Compressor	Table C7/16	96	0	100%	5	0.0	0
Excavator, wheeled/tracked	Table C3/97	105	0	70%	5	0.0	0
Water pump (electric)	CNP 281	88	0	100%	5	0.0	0
Concrete Pump	Table C6/35	100	0	100%	5	0.0	0
Bar Bender	CNP 021	90	0	100%	5	0.0	0
						104.4	

Reference No. 1 - Comparing EIA Appendix 4.13:

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (With Mitigation Measures)

NSR: N18 City Garden, Block 10

6.2B Superstructures (For Marine Works)

Powered Mechanical Equipment (PME)	TM Ref. Identification Code	SWL (dB(A))	Quantity	On-time %	Reduction	Total SWL (dB(A))	
Concrete lorry mixer	Table C6/35	100	2	100%	0	103.0	1.995E+10
Poker, vibratory, hand-held	Table C6/32	100	2	70%	5	96.5	4.467E+09
Crane, mobile (diesel)	Table C7/114	101	1	70%	5	94.5	2.818E+09
Air Compressor	Table C7/16	96	0	100%	5	0.0	0
Excavator, wheeled/tracked	Table C3/97	105	0	70%	5	0.0	0
Water pump (electric)	CNP 281	88	0	100%	5	0.0	0
Concrete Pump	Table C6/35	100	0	100%	5	0.0	0
Bar Bender	CNP 021	90	0	100%	5	0.0	0
Tug boat	CNP 221	110	1	50%	0	107.0	5.012E+10
Barge	-	0	1	100%	0	0.0	0
						104.4	

6.2C Demolition of Structure (For IEC E/B)

Powered Mechanical Equipment (PME)	TM Ref. Identification Code	SWL (dB(A))	Quantity	On-time %	Reduction	Total SWL (dB(A))	
Generator, silenced, 75dB(A) at 7m	CNP 102	100	1	100%	10	90.0	1E+09
Electric Motor On Launching Girder	--	95	5	100%	5	97.0	5.012E+09
Concrete corer	CNP 042	117	1	100%	10	107.0	5.012E+10
Saw, wire	CNP 205	101	1	100%	5	96.0	3.981E+09
Cutter, circular, steel (electric)	CNP 056	112	1	100%	5	107.0	5.012E+10
Crane, mobile (diesel)	Table C7/114	101	2	100%	5	99.0	7.943E+09
						110.7	

6.2C Demolition of Structure (For IEC W/B)

Powered Mechanical Equipment (PME)	TM Ref. Identification Code	SWL (dB(A))	Quantity	On-time %	Reduction	Total SWL (dB(A))	
Generator, silenced, 75dB(A) at 7m	CNP 102	100	1	100%	10	90.0	1E+09
Electric Motor On Launching Girder	--	95	5	100%	5	97.0	5.012E+09
Concrete corer	CNP 042	117	1	100%	10	107.0	5.012E+10
Saw, wire	CNP 205	101	1	100%	5	96.0	3.981E+09
Cutter, circular, steel (electric)	CNP 056	112	1	100%	5	107.0	5.012E+10
Crane, mobile (diesel)	Table C7/114	101	2	100%	5	99.0	7.943E+09
						110.7	

6.2C Demolition of Structure (For IEC E/B) (For Marine Works)

Powered Mechanical Equipment (PME)	TM Ref. Identification Code	SWL (dB(A))	Quantity	On-time %	Reduction	Total SWL (dB(A))	
Generator, silenced, 75dB(A) at 7m	CNP 102	100	1	100%	10	90.0	1E+09
Electric Motor On Launching Girder	--	95	5	100%	5	97.0	5.012E+09
Concrete corer	CNP 042	117	1	100%	10	107.0	5.012E+10
Saw, wire	CNP 205	101	1	100%	5	96.0	3.981E+09
Cutter, circular, steel (electric)	CNP 056	112	1	100%	5	107.0	5.012E+10
Tug boat	CNP 221	110	1	50%	0	107.0	5.012E+10
Barge	-	0	1	100%	0	0.0	0
						112.1	

Reference No. 1 - Comparing EIA Appendix 4.13:

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (With Mitigation Measures)

NSR: N18 City Garden, Block 10

6.2C Demolition of Structure (For IEC W/B) (For Marine Works)

Powered Mechanical Equipment (PME)	TM Ref. Identification Code	SWL (dB(A))	Quantity	On-time %	Reduction	Total SWL (dB(A))	
Generator, silenced, 75dB(A) at 7m	CNP 102	100	1	100%	10	90.0	1E+09
Electric Motor On Launching Girder	--	95	5	100%	5	97.0	5.012E+09
Concrete corer	CNP 042	117	1	100%	10	107.0	5.012E+10
Saw, wire	CNP 205	101	1	100%	5	96.0	3.981E+09
Cutter, circular, steel (electric)	CNP 056	112	1	100%	5	107.0	5.012E+10
Tug boat	CNP 221	110	1	50%	0	107.0	5.012E+10
Barge	-	0	1	100%	0	0.0	0
						112.1	

6.3 East Portal and IEC Connection Work

6.3.1 Substructures

Powered Mechanical Equipment (PME)	TM Ref. Identification Code	SWL (dB(A))	Quantity	On-time %	Reduction	Total SWL (dB(A))	
Concrete lorry mixer	Table C6/35	100	2	100%	0	103.0	1.995E+10
Poker, vibratory, hand-held	Table C6/32	100	2	70%	5	96.5	4.467E+09
Crane, mobile (diesel)	Table C7/114	101	1	70%	5	94.5	2.818E+09
Air Compressor	Table C7/16	96	0	100%	5	0.0	0
Excavator, wheeled/tracked	Table C3/97	105	2	70%	5	101.5	1.413E+10
Water pump (electric)	CNP 281	88	6	100%	10	85.8	380189396
Concrete Pump	Table C6/35	100	2	100%	5	98.0	6.31E+09
Piling, large diameter bored, oscillator	CNP 165	115	0	100%	5	0.0	1
						106.8	

6.3.2 Retaining Structures

Powered Mechanical Equipment (PME)	TM Ref. Identification Code	SWL (dB(A))	Quantity	On-time %	Reduction	Total SWL (dB(A))	
Concrete lorry mixer	Table C6/35	100	2	100%	0	103.0	1.995E+10
Poker, vibratory, hand-held	Table C6/32	100	2	70%	5	96.5	4.467E+09
Crane, mobile (diesel)	Table C7/114	101	1	70%	5	94.5	2.818E+09
Air Compressor	Table C7/16	96	0	100%	5	0.0	0
Excavator, wheeled/tracked	Table C3/97	105	2	70%	5	101.5	1.413E+10
Water pump (electric)	CNP 281	88	6	100%	10	85.8	380189396
Concrete Pump	Table C6/35	100	2	100%	5	98.0	6.31E+09
Piling, large diameter bored, oscillator	CNP 165	115	1	100%	5	110.0	1E+11
						111.7	1.481E+11

6.3.3 Demolition of Structure

Powered Mechanical Equipment (PME)	TM Ref. Identification Code	SWL (dB(A))	Quantity	On-time %	Reduction	Total SWL (dB(A))	
Breaker, excavator mounted	Table C8/13	110	1	70%	5	103.5	2.239E+10
Excavator, wheeled/tracked	Table C3/97	105	0	80%	5	0.0	1
Breaker, hand-held, mass > 20kg and < 35kg	Table C2/10	110	0	100%	5	0.0	1
Dump truck, 5.5 tonne < gross vehicle weight < 38 tonne	Table C9/27	105	1	70%	0	103.5	2.239E+10
Crane, mobile (diesel)	Table C7/114	101	1	100%	5	96.0	3.981E+09
						106.9	4.876E+10

Reference No. 1 - Comparing EIA Appendix 4.13:

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (With Mitigation Measures)

NSR: N18 City Garden, Block 10

9.0 Tunnel Building and Installation

9.0 Tunnel Building and Installation at East Ventilation Building, Administration Building & Central Ventilation Building, West Ventilation

9.0A Substructures

Powered Mechanical Equipment (PME)	TM Ref. Identification Code	SWL (dB(A))	Quantity	On-time %	Reduction	Total SWL (dB(A))	
Concrete lorry mixer	Table C6/35	100	2	100%	0	103.0	1.995E+10
Poker, vibratory, hand-held	Table C6/32	100	2	70%	5	96.5	4.467E+09
Crane, mobile (diesel)	Table C7/114	101	1	70%	5	94.5	2.818E+09
Air Compressor	Table C7/16	96	1	100%	5	91.0	1.259E+09
Drill rig, rotary type (diesel)	CNP 072	110	2	100%	5	108.0	6.31E+10
Water pump (electric)	CNP 281	88	2	100%	10	81.0	125892541
Grout mixer	CNP 105	90	1	100%	5	85.0	316227766
Concrete Pump	Table C6/35	100	0	100%	5	0.0	0
Piling, large diameter bored, oscillator	CNP 165	115	0	100%	5	0.0	0
						109.6	9.203E+10

9.0B Superstructures

Powered Mechanical Equipment (PME)	TM Ref. Identification Code	SWL (dB(A))	Quantity	On-time %	Reduction	Total SWL (dB(A))	
Concrete lorry mixer	Table C6/35	100	2	100%	0	103.0	1.995E+10
Poker, vibratory, hand-held	Table C6/32	100	2	70%	5	96.5	4.467E+09
Crane, mobile (diesel)	Table C7/114	101	1	70%	5	94.5	2.818E+09
Air Compressor	Table C7/16	96	1	100%	5	91.0	1.259E+09
Drill rig, rotary type (diesel)	CNP 072	110	2	100%	5	108.0	6.31E+10
Water pump (electric)	CNP 281	88	2	100%	10	81.0	125892541
Grout mixer	CNP 105	90	1	100%	5	85.0	316227766
Concrete Pump	Table C6/35	100	0	100%	5	0.0	0
Piling, large diameter bored, oscillator	CNP 165	115	0	100%	5	0.0	0
						109.6	9.203E+10

Reference No. 2 - Comparison of Predicted Construction Noise Level with EIA Appendix 4.14 at N18 City Garden, Block 10 with Group 1 PME

Predicted Construction Noise Levels, dB(A)		SWL	Distance	2014												2015												2016												2017											
N18 City Garden, Block 10 with Group 1 PME		dB(A)	(m)	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12									
6.0 Construction of IECL																																																			
6.2 IEC Connection Work																																																			
6.2A Substructures	NPR1	111	255													Completed																																			
6.2B Superstructures	NPR1	104	255													Completed																																			
6.2A Substructures	NPR2E(EB)	111	68													Completed																																			
6.2B Superstructures	NPR2E(EB)	104	68													Completed																																			
Reconstruction IEC West Bound																																																			
6.2C Demolition of Structure	WB(section 2,(45m in length land section))	111	16				82																																												
6.2C Demolition of Structure	WB(other than section 2)	111	37	75	75	75																																													
6.2C Demolition of Structure	WB(section 2,(70m in length marine section))	112	16				83																																												
6.2C Demolition of Structure	WB(other than section 2)	112	70				70																																												
6.2A Substructures	WB(Group 1 PME) land section	110	34				74																																												
6.2A Substructures	WB(Group 1 PME) marine section	112	50													Completed																																			
6.2B Superstructures	WB(other than section B land section)	104	23														72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72																			
6.2B Superstructures	WB(section B,(20m in length land section))	104	20														73																																		
6.2B Superstructures	WB(other than section B marine section)	110	30				75	75	75	75	75																																								
6.2B Superstructures	WB(section B,(20m in length marine section))	110	20														79																																		
6.2C Demolition of Structure	EB(section 5,(150m in length land section))	111	30																																																
6.2C Demolition of Structure	EB(other than section 5 land section)	111	150																																																
6.2C Demolition of Structure	EB(section 5,(150m in length marine section))	112	30																																																
6.2C Demolition of Structure	EB(other than section 5 marine section)	112	160																																																
6.2A Substructures	EB(Group 1 PME) marine section	112	50													Completed																																			
6.2B Superstructures	EB marine section	110	50													Completed																																			
6.3 East Portal and IEC Connection Work																																																			
6.3.1 Substructures		107	34																																																
6.3.2 Retaining Structures	48m away from NSR18	112	48																																																
6.3.2 Retaining Structures	34m closest distance	112	34																																																
6.3.3 Demolition of Structure	34m closest distance	107	34																																																
9.0 Tunnel Building & Installation																																																			
9.0 Tunnel Building & Installation at East Ventilation Building, Administration Building, & Central Ventilation Building, West Ventilation Building																																																			
9.0A Substructures	Admin B.	110	40																																																
9.0B Superstructures	Admin B.	110	40																																																
Predicted Construction Noise Level, dB(A)(with Façade Effect)				75	75	75	82	84	70	75	75	75	75	75	79	73	72	72	72	72	72	72	72	72	72	72	72	72	73	78	79	72	72	73	73	73	73	76													
Predicted Construction Noise Level in EIA report for same construction work, dB(A)(with Façade Effect)				75	75	75	82	84	74	75	75	75	75	75	79	76	75	75	75	75	75	75	75	75	75	75	75	75	75	80	82	74	74	75	75	75	75	77	71	71	71	71									



俊和-中國中鐵-中鐵大橋局聯營
CHUN WO - CRGL - MBEC JOINT VENTURE

CONSTRUCTION NOISE MANAGEMENT PLAN

FOR

Contract No.: HY/2009/19

**Central – Wan Chai Bypass
Tunnel (North Point Section)
and
Island Eastern Corridor Link**

Appendix H

**Explanatory Notes on Incomplete Single Noise Semi-Enclosure
Works of Westbound Bridges between Piers 17 and 22**

Contract No. HY/2009/19

Central – Wan Chai Bypass – Tunnel (North Point Section) and Island Eastern Corridor Link

Explanatory Notes on Incomplete Single Noise Semi-Enclosure Works of Westbound Bridges between Piers 17 and 22

Background

Contract HY/2009/19 (the Contract) is one of the contracts of the Central-Wan Chai Bypass (the CWB) Project that will provide a new trunk road running along the northern shore of Hong Kong Island. The Contract comprises 300m of cut and cover tunnel and reconstruction of part of the Island East Corridor (IEC) to form the new Island East Corridor Link (IECL) connecting the north point access of the tunnel and the existing IEC. In order to reduce the traffic noise nuisance to the neighbouring residents between Victoria Centre and Provident Centre, the Contract will provide some 1.3km long noise barrier works at the IECL. The scope of noise barrier works includes, among others, the construction of 500m Single Noise Semi-Enclosure (SNSE) on the new westbound elevated bridge of the IECL between Victoria Centre and City Garden.

The construction of SNSE works comprises of structural main frame, panel sub-frame and noise panel in Poly-Methyl-Meta-Acrylate (PMMA) material. The extent of noise semi-enclosure work at IECL westbound bridge is shown on Figure 1.



Figure 1 – Extent of Green Wall Panel of Cantilever Noise Barrier at New Eastbound Bridge

In accordance with the Contract requirements, the noise semi-enclosure work is designed to be constructed in interim and permanent stages owing to the high capacity of traffic along the existing IEC. Interim stage noise semi-enclosure in the form of maintaining existing number of traffic lanes should be constructed before the CWB tunnel commissioning. The permanent stage of noise semi-enclosure could only be constructed after the implemented CWB tunnel

commissioning because portion of westbound traffic could be diverted to the tunnel allowing sufficient room in traffic capacity to replace the permanent column and noise panel as well as the construction of maintenance walkway and viaduct planter. In other words, the Contract is still in construction phase after the CWB tunnel commissioning. Sections of SNSE showing the transformation from interim stage to permanent stage is shown on Figure 2.

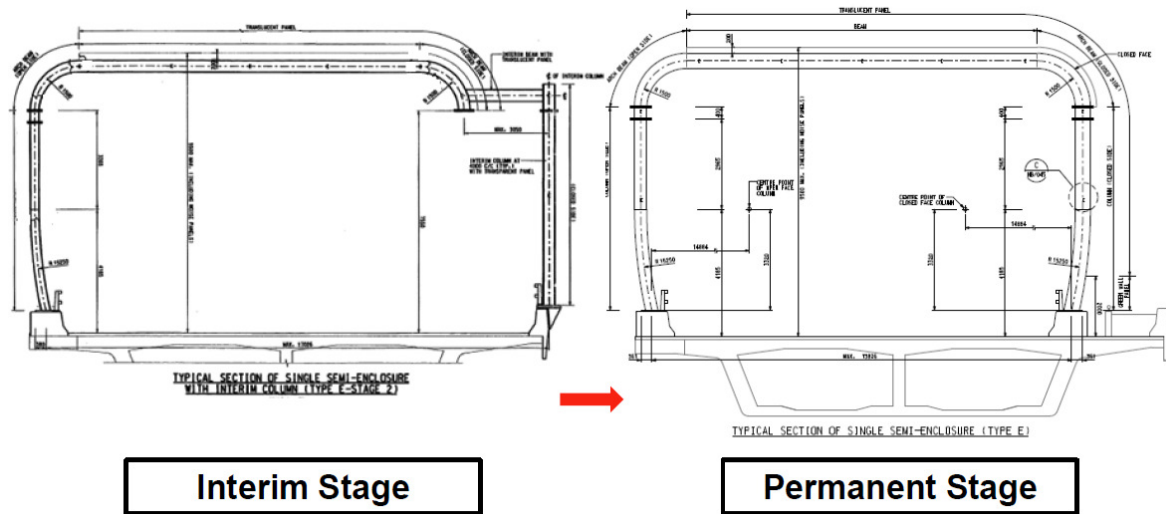


Figure 2 –Figure 2 - Sections of SNSE showing the transformation from interim stage to permanent stage

After the CWB tunnel commissioning on 20 January 2019, the construction of remaining noise semi-enclosure work along IEC westbound is being prepared in accordance with the works programme. In consideration of the concern of incomplete SNSE works between Piers 17 and 22 after the CWB tunnel commissioning, the temporary traffic arrangements (TTA) have been applied to facilitate the concerned works and they are seeking TMLG members’ approval for work commencement. Part print of Detailed Works Programme showing the time schedule of SNSE works as abovementioned is attached in Appendix A. The current condition of SNSE works between Piers 17 and 22 is shown in Figure 3 illustrating the following incomplete noise enclosure works.

1. Piers 17 to 21 – Only vertical posts with portion of vertical noise panels are erected. There is no arch beam and roof noise panel; and
2. Piers 21 to 22 – The structural frame (i.e. vertical posts and arch beams) with portion of vertical noise panels are erected. There is no roof noise panel.



Figure 3 - Current condition of SNSE works between Piers 17 and 22 at IEC westbound bridge

Requirement of Noise Barriers / Semi-Enclosures Installation in Environmental Permit (EP) and Further Environmental Permit (FEP)

As stipulated in Condition 2.10 of Environmental Permit EP-364/2009/F (EP) and Further Environmental Permit FEP-07/364/2009/F (FEP), to mitigate traffic noise from road operation, the following noise barriers and semi-enclosures shall be installed before the commencement of operation of the road project unless otherwise specified in the EP and FEP:

- (a) about 235m length of noise semi-enclosure covering the westbound slip road from the Island Eastern Corridor (IEC);
- (b) about 230m length of noise semi-enclosure covering the main carriageways (eastbound and westbound) of the Central-Wan Chai Bypass (CWB) and IEC;
- (c) about 135m length of 5.5m high cantilevered noise barrier with 4.5m long cantilever inclined at 45° on the eastbound slip road to the IEC;
- (d) about 95m length of 5.5m high cantilevered noise barrier with 1m long cantilever inclined at 45° on the eastbound slip road to the IEC;
- (e) about 350m length of 3.5m high vertical noise barrier on the eastbound slip road to the IEC; and
- (f) about 265m length of noise semi-enclosure covering the westbound slip road from the IEC shall be installed before the occupation of planned noise sensitive receivers (NSRs) in the Comprehensive Development Areas (CDA) near Oil Street, North Point, as shown in Figures 4a and 4b of the EP and FEP.

Due to existing site constraint, the noise semi-enclosure between IEC westbound Pier 17 and Pier 22 (i.e. portion of noise semi-enclosure in item (a) above) cannot be installed until some of the traffic lanes are diverted to CWB tunnel after tunnel commissioning so as to allow working space for installation. Alternative arrangement consists of re-sequencing of the noise enclosure installation is therefore required to suit actual site condition. Alternative work arrangement is attached in Appendix B. The detail of the site constraint is further elaborated in the following section.

Construction Constraint of SNSE Work between Piers 17 to 22

The construction of SNSE works at IEC westbound between Piers 17 and 22 was practically not possible be implemented before the opening of new IECL westbound bridge in October 2016. During the construction of the new IECL westbound bridge, Traffic Management Liaison Group (TMLG) members required the existing 3-lane westbound traffic at old eastbound bridge should be maintained at all time and such westbound traffic should safely be diverted for onward travelling to Hing Fat Street and Victoria Park Road accordingly. To comply with this requirement with sufficient sight distance to facilitate such westbound traffic diversion, a diversion breakthrough had to be formed at IEC westbound bridge between Piers 17 and 22, which obstructed the construction of SNSE works at such location. Part print of the approved TTA drawing illustrating such westbound traffic diversion breakthrough between Piers 17 and 21 is shown in Figure 4. The minutes of TMLG meeting no. 28 enclosing with full set of approved TTA drawings showing the abovementioned diversion breakthrough location is attached in Appendix C.

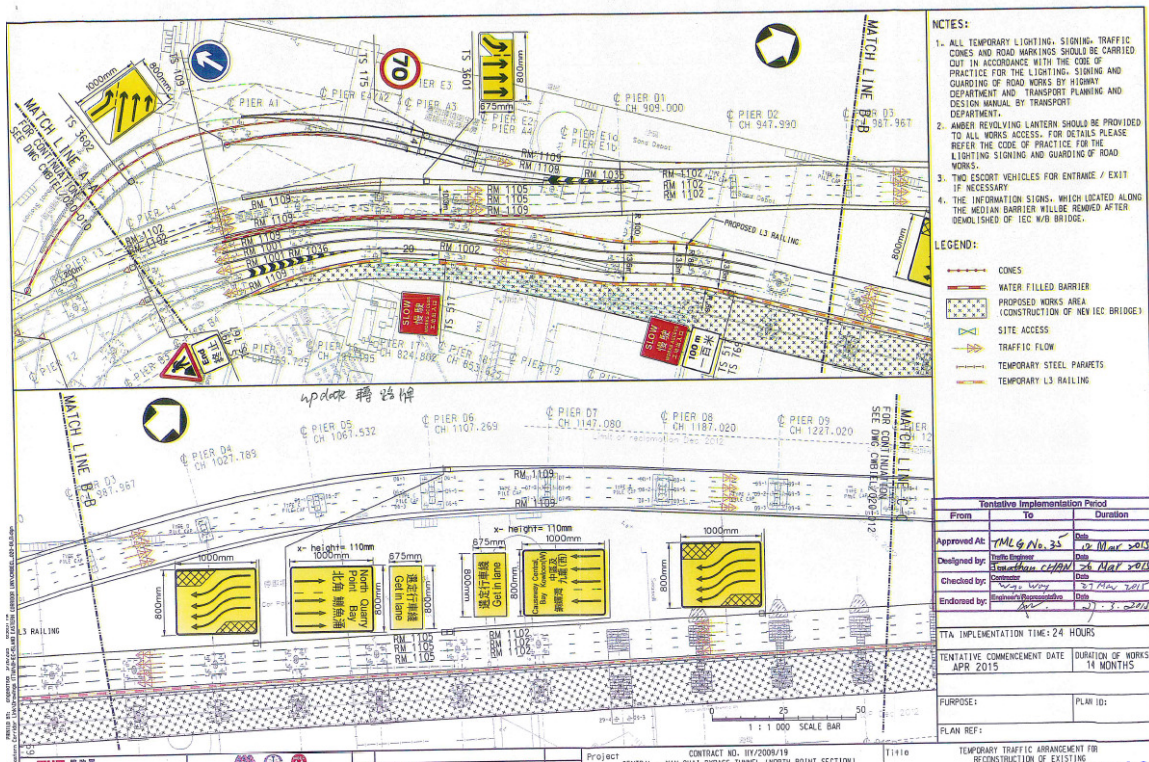


Figure 4 - westbound traffic diversion breakthrough between Piers 17 and 22 at IEC westbound bridge

The construction of SNSE works at IEC westbound between Piers 17 and 22 after the opening of new westbound bridge requires closure of 2 traffic lanes which will seriously affect the IEC

westbound traffic towards Hing Fat Street and Victoria Park Road. Such noise panel installation and structural frame construction works of SNSE could only be carried out upon portion of IEC westbound traffic is diverted to CWB tunnel. That means, the SNSE structural frames and noise panel construction could only be implemented after the CWB commissioning.

TTA drawings for construction of SNSE works as abovementioned were presented in the TMLG meeting on 4 May 2016. TMLG members commented that the TTA schemes should be combined into one to cover the overall IEC westbound bridge works and such scheme should be consulted with District Council (DC) members. Upon such DC consultation was implemented, the combined TTA scheme was presented in the TMLG meeting on 11 May 2016. However, the TMLG member further commented that the Traffic Impact Assessment (TIA) should be conducted. Please be advised that such TIA could only be carried out after the CWB tunnel commissioning for verifying the actual traffic count at IEC to facilitate the post-commissioning works. Such traffic count and subsequent TIA were completed on 18 April 2019 and these documents will be presented in the coming TMLG meeting to facilitate the commencement of SNSE works as abovementioned. The extracted TMLG minutes no. 47 on 21 April 2016 (Item 2.4) and TMLG minutes no. 48 on 11 May 2016 (Item 2.2) illustrating the above requirements are attached in Appendix D.

Furthermore, there were many complaints and enquires during June and October 2016 concerning the traffic congestion and shape diversion S-bents of IEC westbound traffic owing to the westbound traffic diversion from old IEC eastbound bridge to Hing Fat Street. The public and road user had great expectation on early opening of the new IECL westbound bridge to alleviate such adverse situation at IEC westbound. There were urgency and needs for early opening the new IECL westbound bridge, though the SNSE works between Piers 17 and 22 had not yet been completed. The complaint log in 2016 is attached in Appendix E.

Conclusion

In summary, it is concluded that the full construction of SNSE works at IECL westbound bridge between Piers 17 and 22 could only be implemented after the CWB tunnel commissioning owing to the following facts.

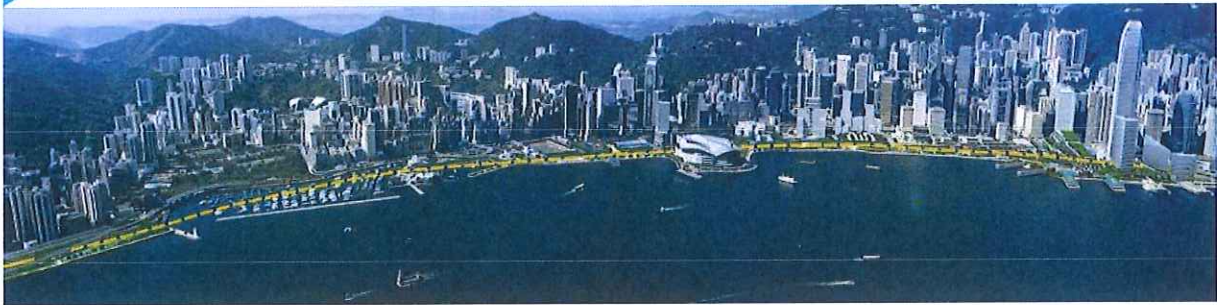
1. Permanent stage of noise semi-enclosure works is to be implemented after the CWB tunnel commissioning as specified in the Contract.
2. Westbound traffic diversion constraint on site and the approved TTA dictated the noise semi-enclosure works between Piers 17 and 22 could not be completed before the CWB tunnel commissioning. To avoid traffic impact to the road users, such SNSE works should only be constructed after the CWB tunnel commissioning.
3. In response to the complaints on traffic congestion and shape diversion S-bents of IEC westbound traffic during the diversion of westbound traffic from old eastbound bridge to Hing Fat Street, there were urgency and needs for early opening the new IECL westbound bridge, though the SNSE works between Piers 17 and 22 had not yet been completed.

Appendix A

*Part-print of Detailed Works Programme (DWP) (Rev. F)
showing the time schedule of Single Noise Semi-enclosure (SNSE)
works between IEC Westbound Piers 17 and 22*

Appendix B

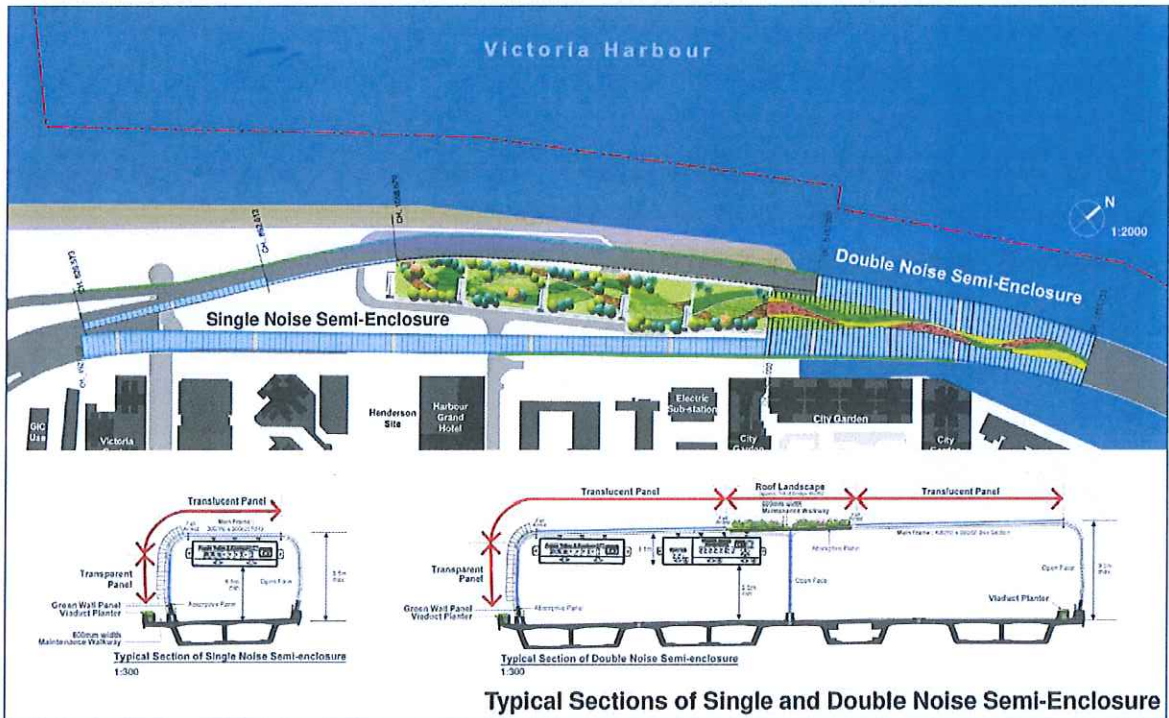
*Single Noise Semi-enclosure (SNSE) Works between IEC Westbound
Pier 17 and 22*



Contract No. HY/2009/19
Central - Wan Chai Bypass – Tunnel (North Point Section) and Island Eastern
Corridor Link
Presentation on Construction of Noise Enclosure at Piers 17-21



Layout Plan of Noise Enclosure



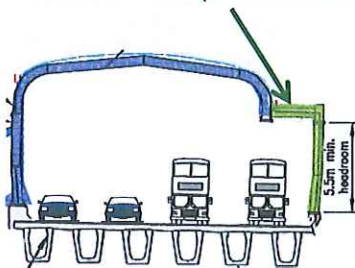
Environmental Permit Condition

- According to EP 2.10 - The noise enclosure shall be complete at operation of the road project

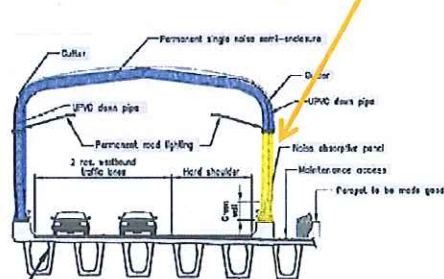
Environmental Permit Condition

- Noise Enclosures are constructed in 2 stages
- First stage with interim posts (Before CWB tunnel opening)
- Second stage with permanent posts (After CWB tunnel opening)

(Before CWB Tunnel opening)
Interim Post (4 lane traffic)

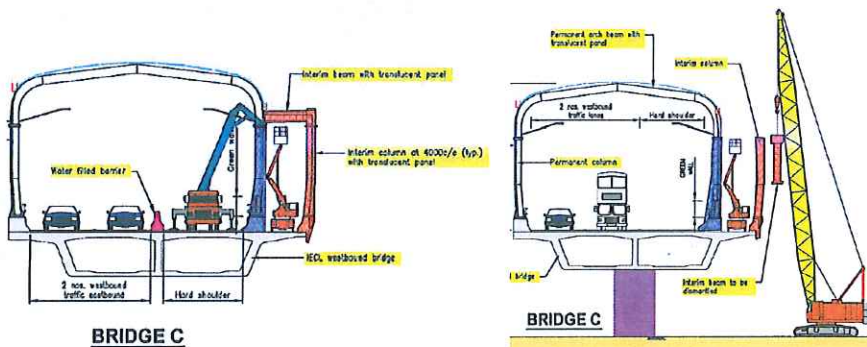


(After CWB Tunnel Opening)
Permanent Post (2 lane traffic)

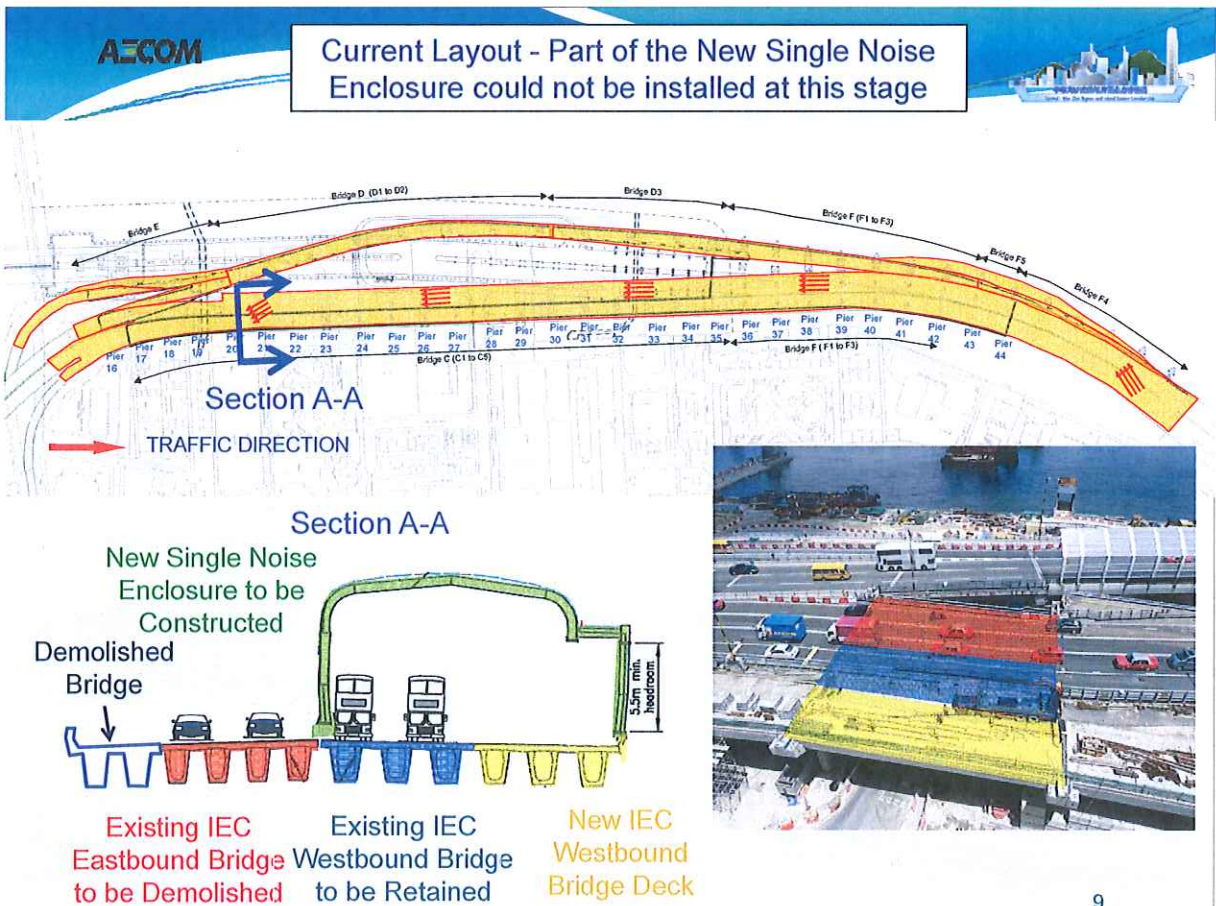


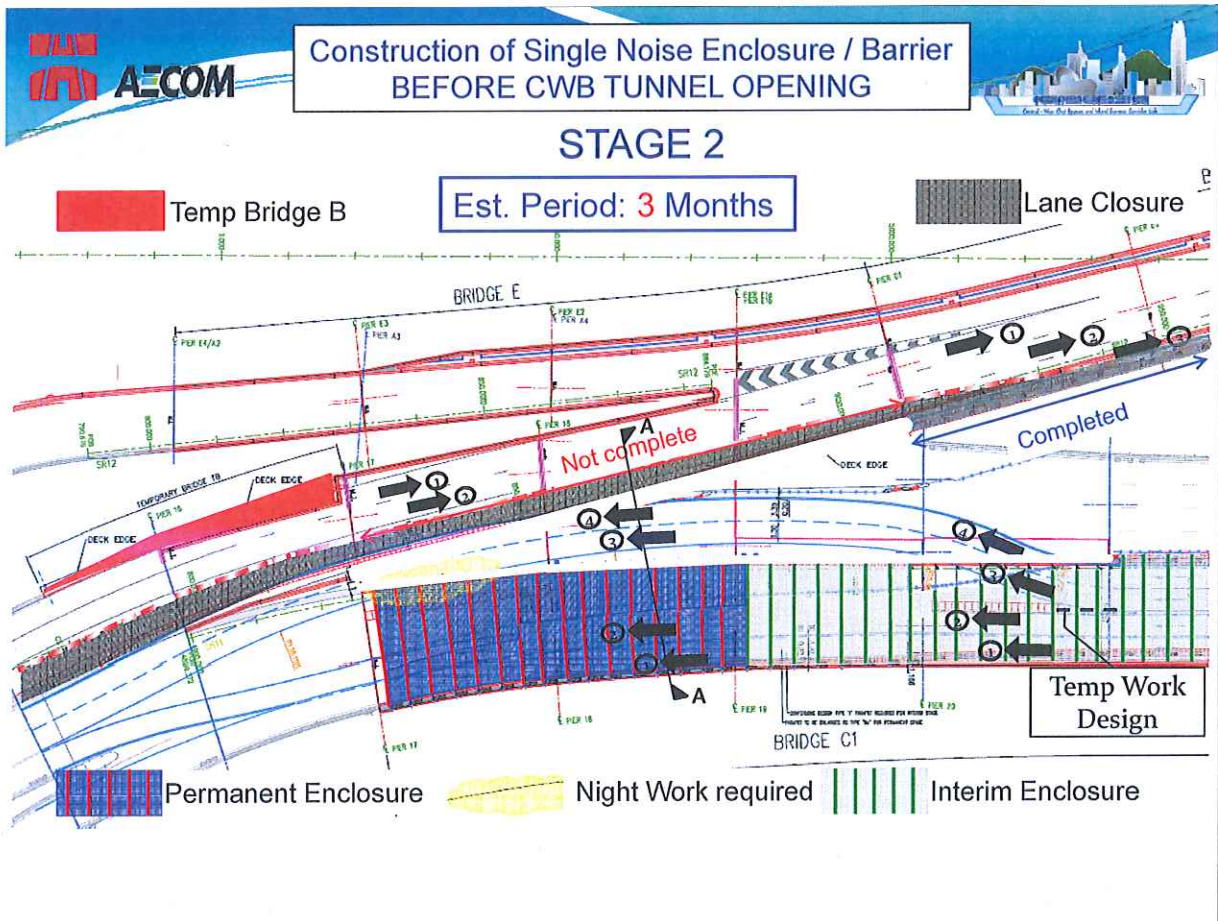
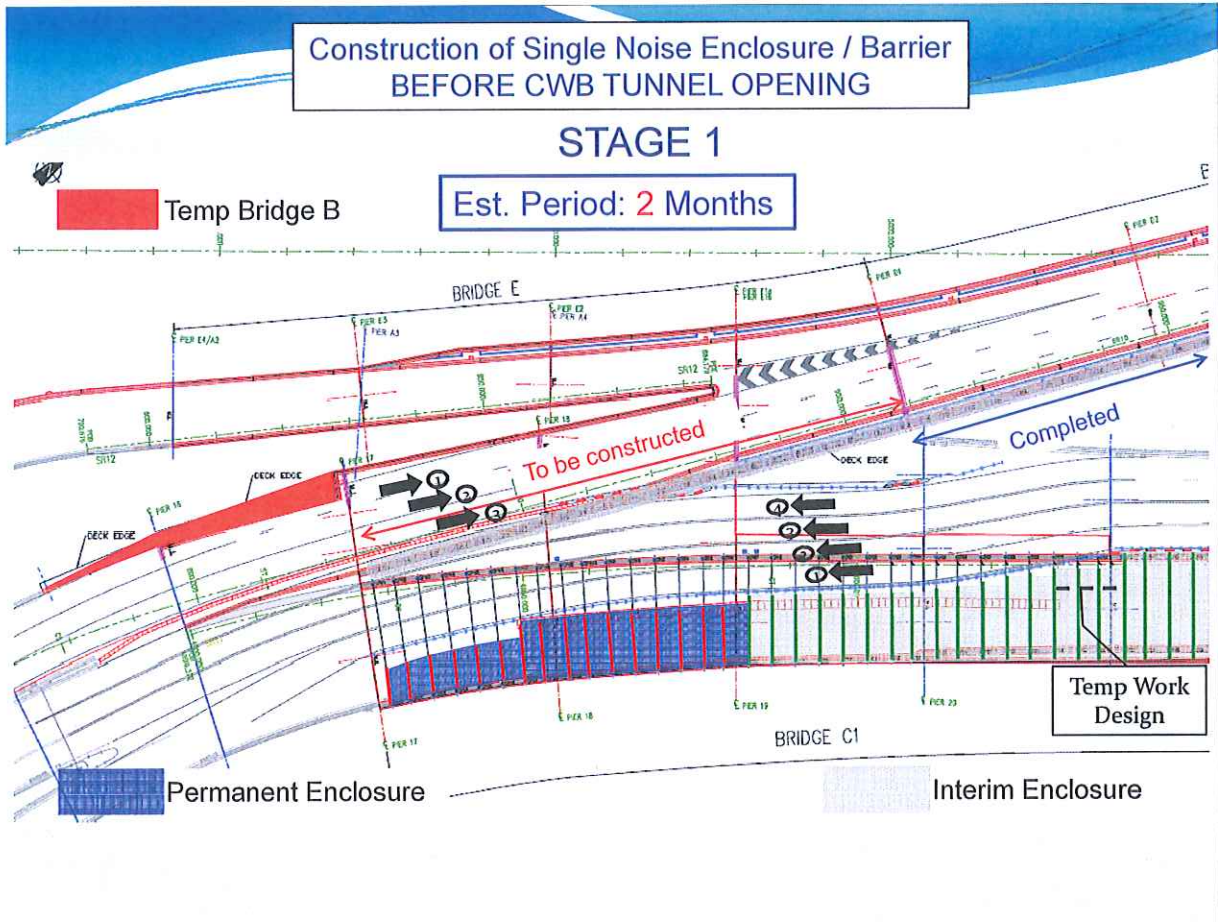
Environmental Permit Condition

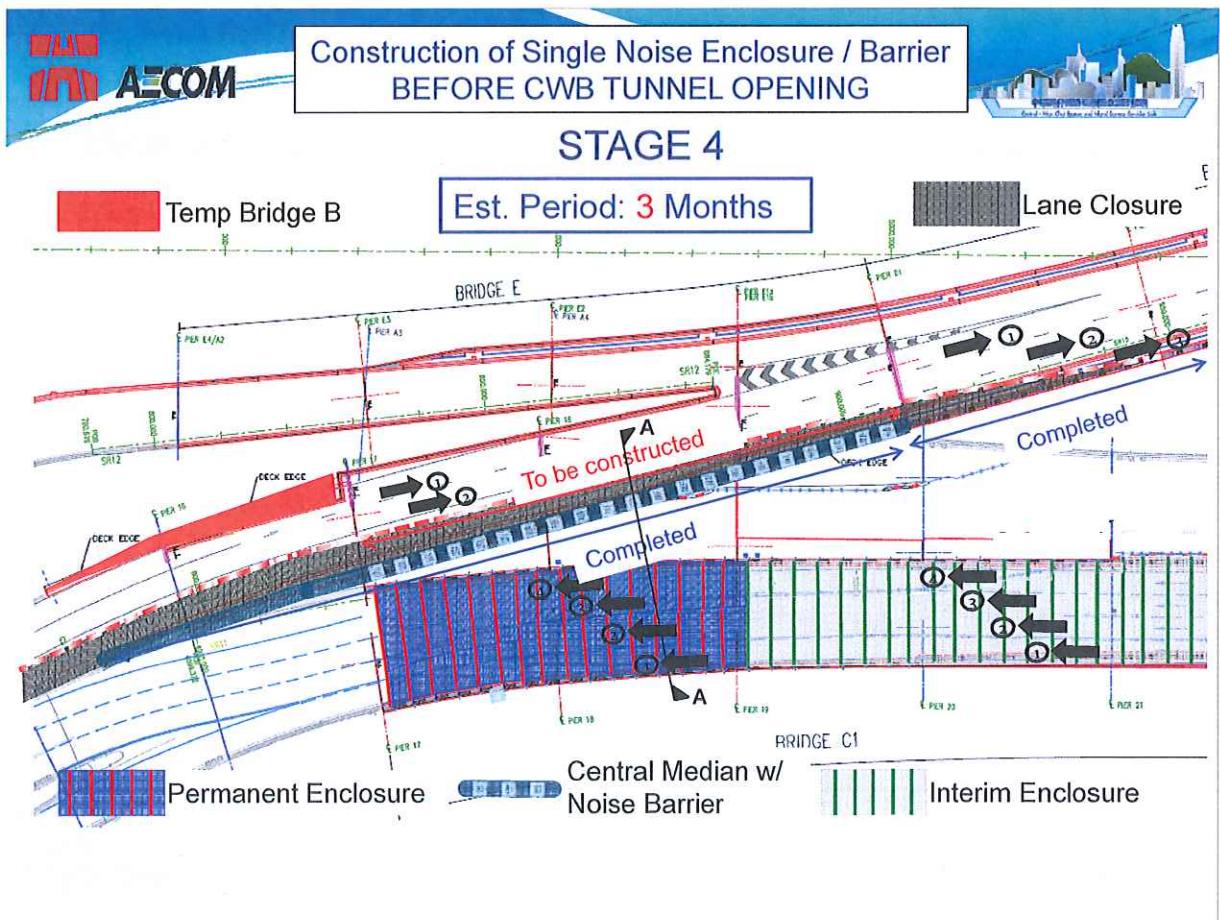
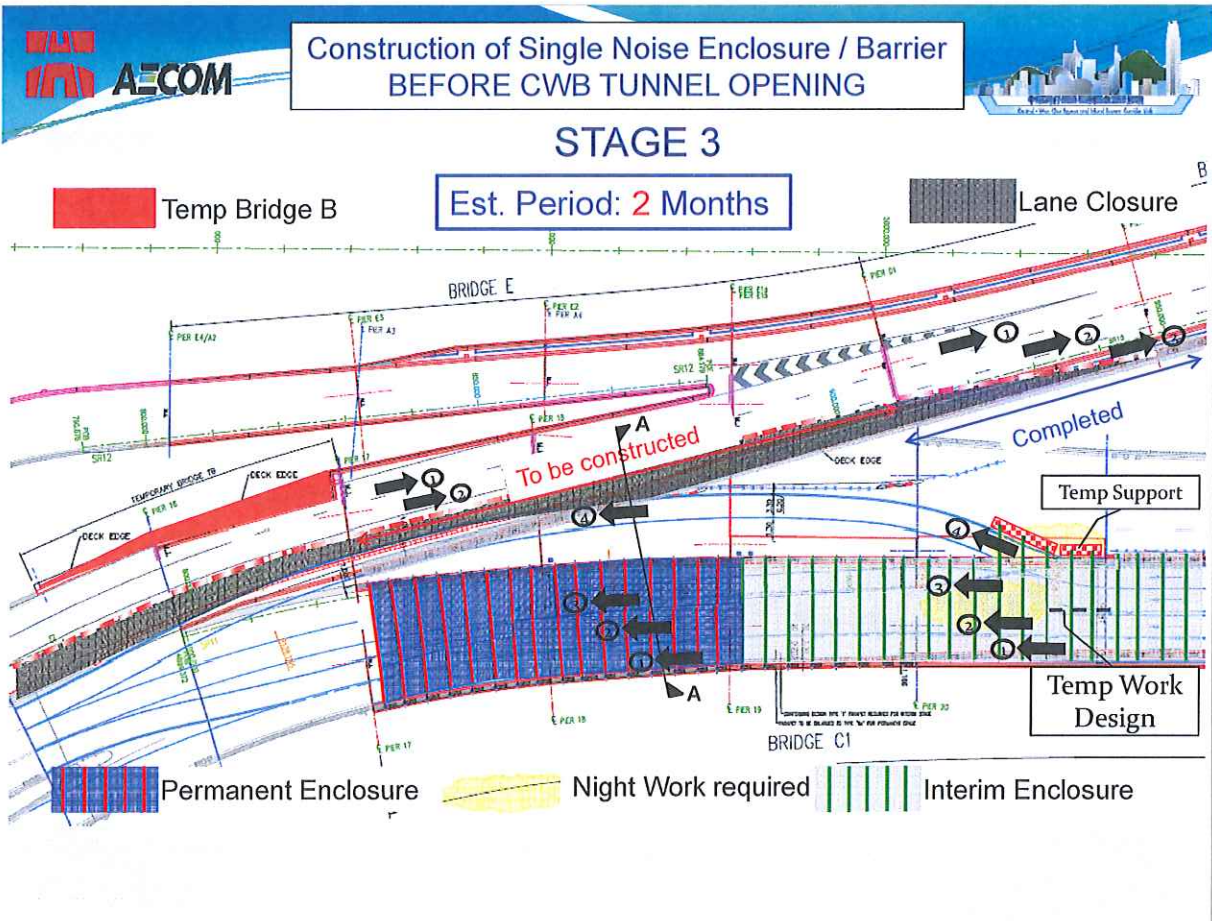
- Permanent noise enclosure shall be complete at operation of road project
- Permanent noise enclosure can only be completed by 277 days after CWB tunnel opening (Key Dates 10-14 under C19)



Permanent single noise enclosure to be carried out
AFTER CWB tunnel opening

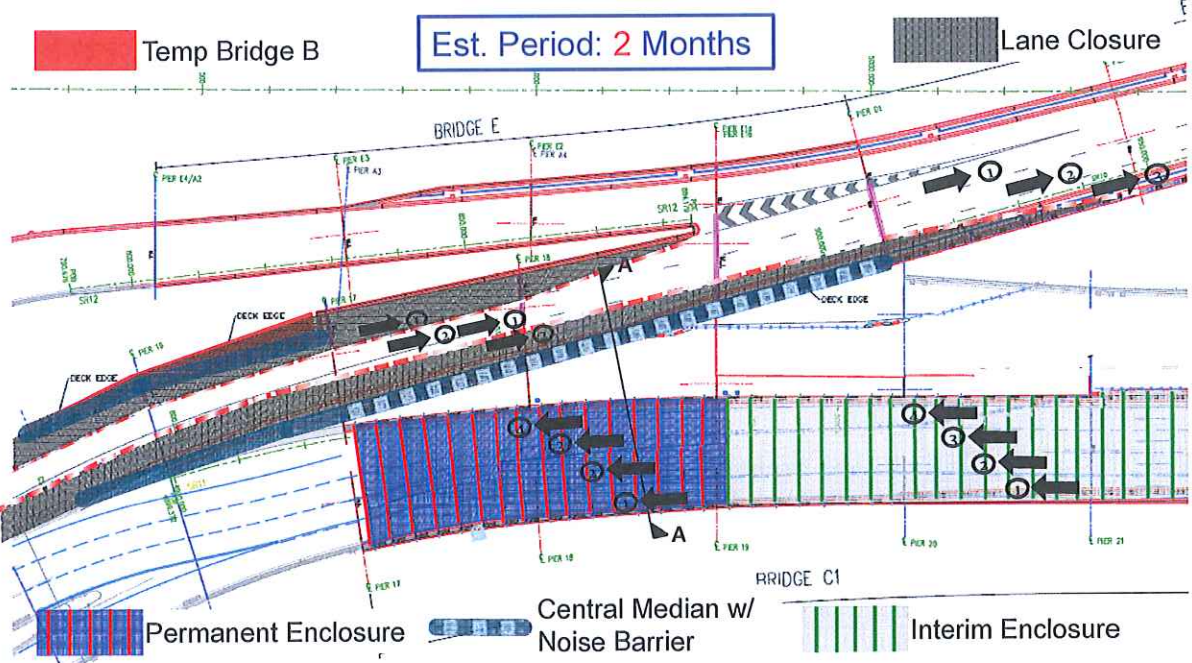








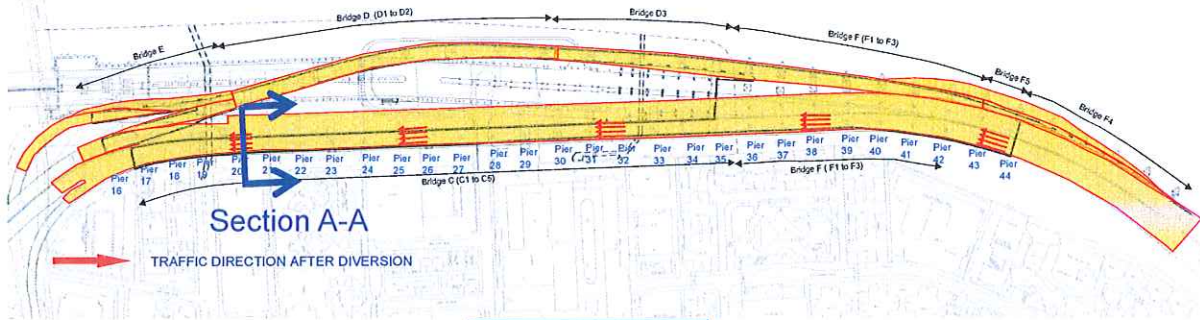
STAGE 5



Sequence of Works for Construction of Noise Barrier / Enclosure BEFORE CWB TUNNEL OPENING

Stage 1	<ul style="list-style-type: none"> • 2 Months • Before IEC W/B Diversion • Construct Noise Enclosure outside Live Traffic Area
Stage 2	<ul style="list-style-type: none"> • After IEC W/B Diversion, 3 Months • 2 + 2 Lanes • Nightwork required
Stage 3	<ul style="list-style-type: none"> • 2 Months • 3 + 1 Lanes • Nightwork required
Stage 4	<ul style="list-style-type: none"> • 3 Months • IEC W/B 4 Lanes diverted to New W/B Bridge, install north post at run-in • Construct Central Median & Noise Barrier at E/B Bridge
Stage 5	<ul style="list-style-type: none"> • 2 Months • Demolish Temp Bridge B & Construct Parapet • Erect Metal Roof at FEHD Depot & FEHD Depot Relocation

Before CWB Tunnel Opening – Divert all 4 lanes of Westbound Traffic to New Westbound Bridge

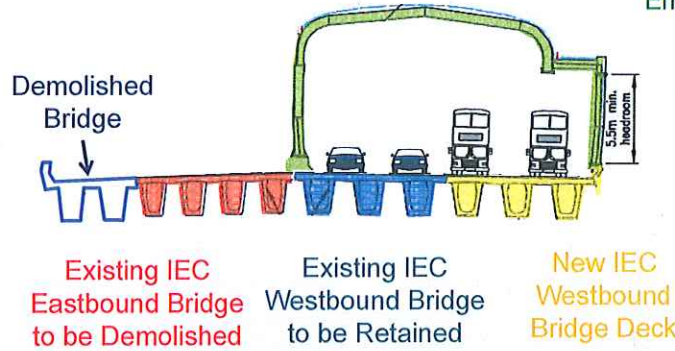


Section A-A

TRAFFIC DIRECTION AFTER DIVERSION

Section A-A

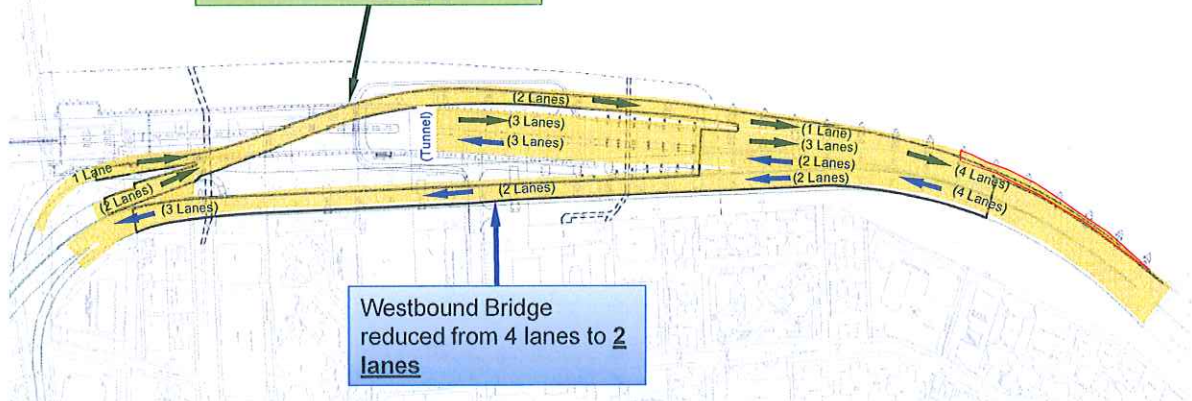
New Single Noise Enclosure



CWB Tunnel Opening

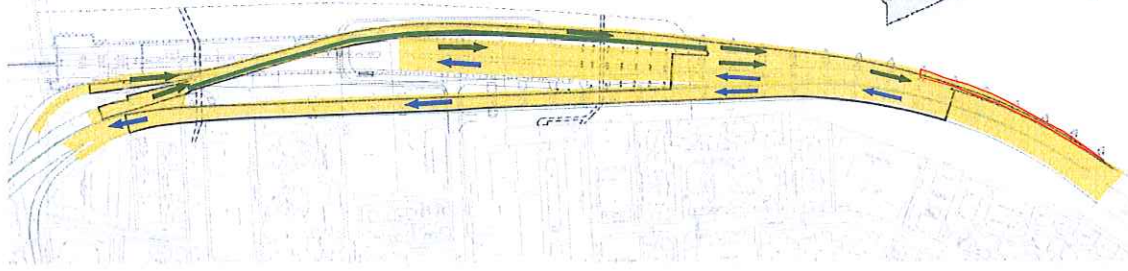
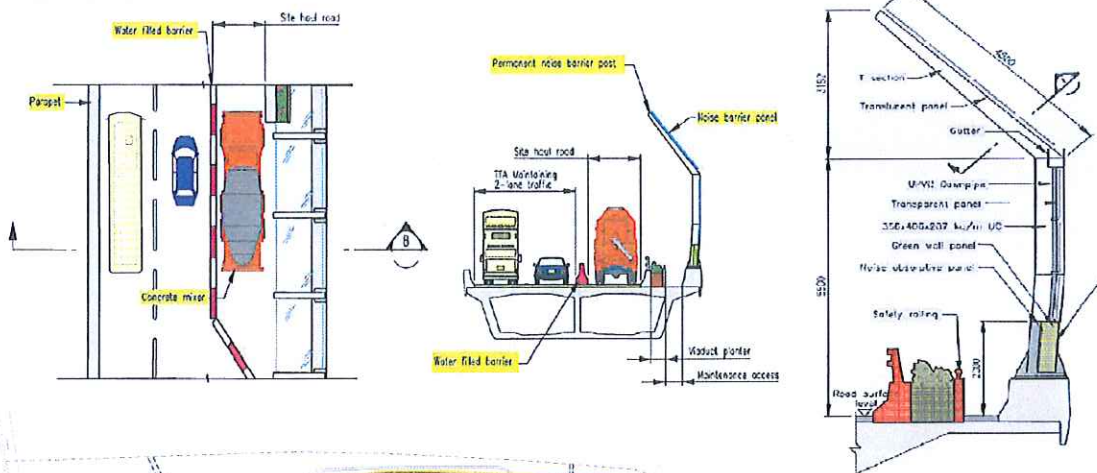
Road Realignment and Modification of Noise Enclosure are required after CWB Tunnel Opening regardless of Piers 17-21 noise enclosure being completed or not

Eastbound Bridge reduced from 4 lanes to 2 lanes

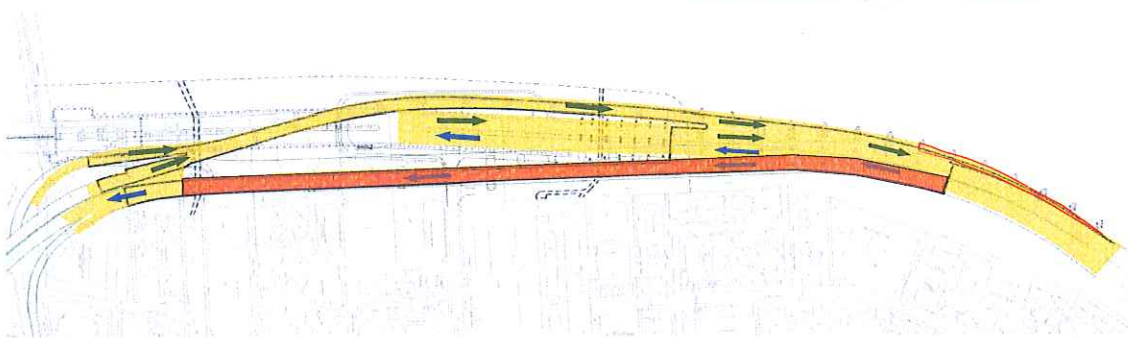
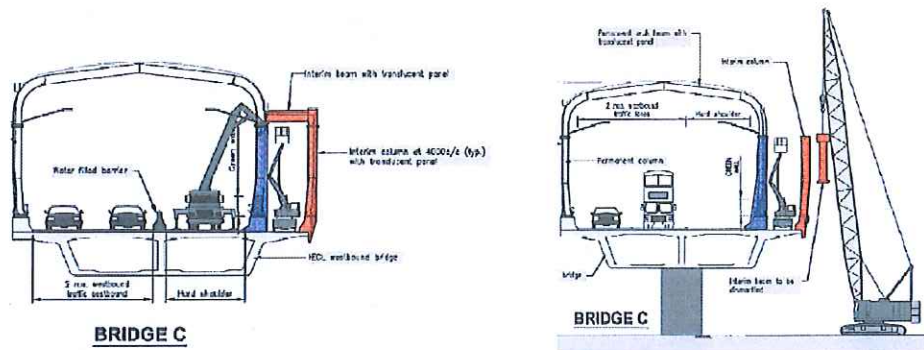


Westbound Bridge reduced from 4 lanes to 2 lanes

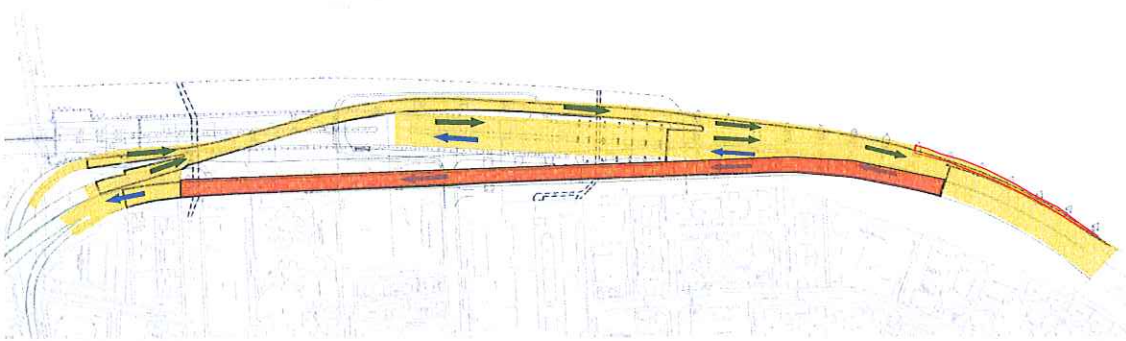
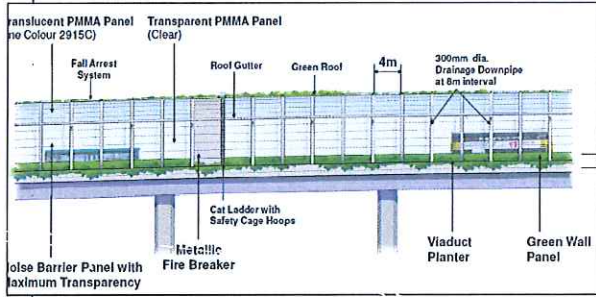
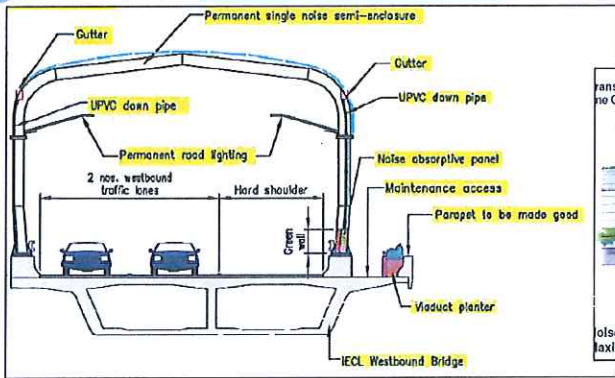
AFTER TUNNEL OPENING - Construction of Roadside Barrier and Viaduct Planter (Eastbound Bridge)



AFTER TUNNEL OPENING - Modify Single Noise Enclosure at Westbound Bridge



AFTER TUNNEL OPENING Construction Viaduct Planter & Green Panel (Westbound Bridge)

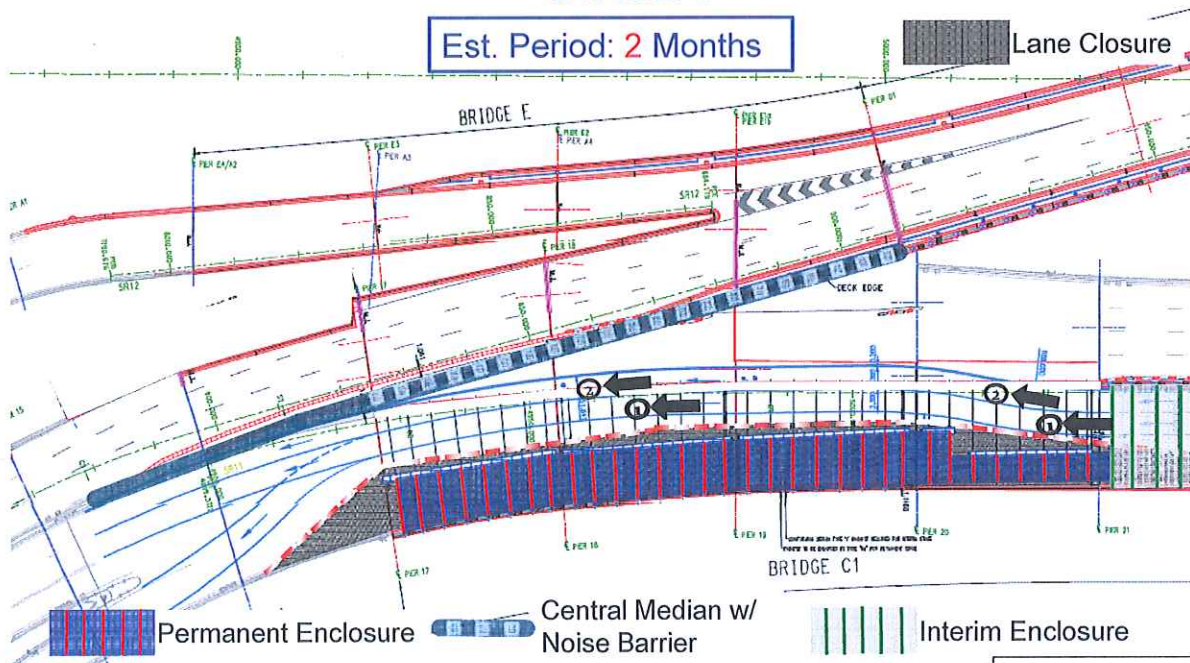


Construction of Single Noise Enclosure / Barrier AFTER CWB TUNNEL OPENING



STAGE 1

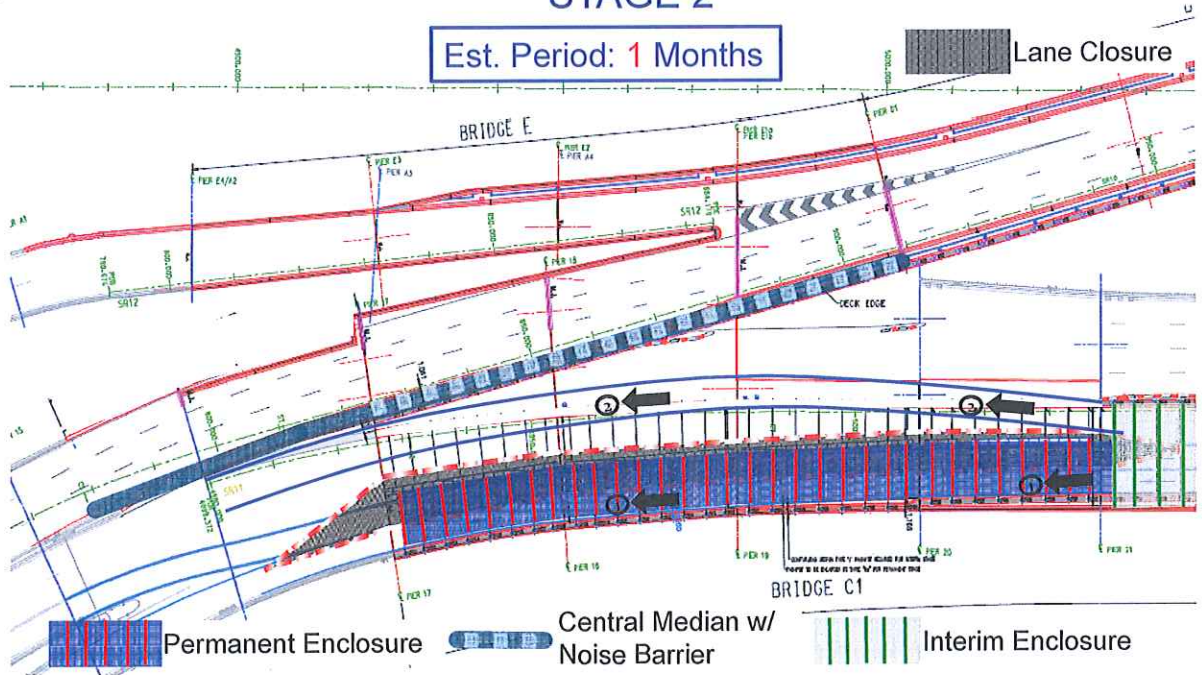
Est. Period: 2 Months





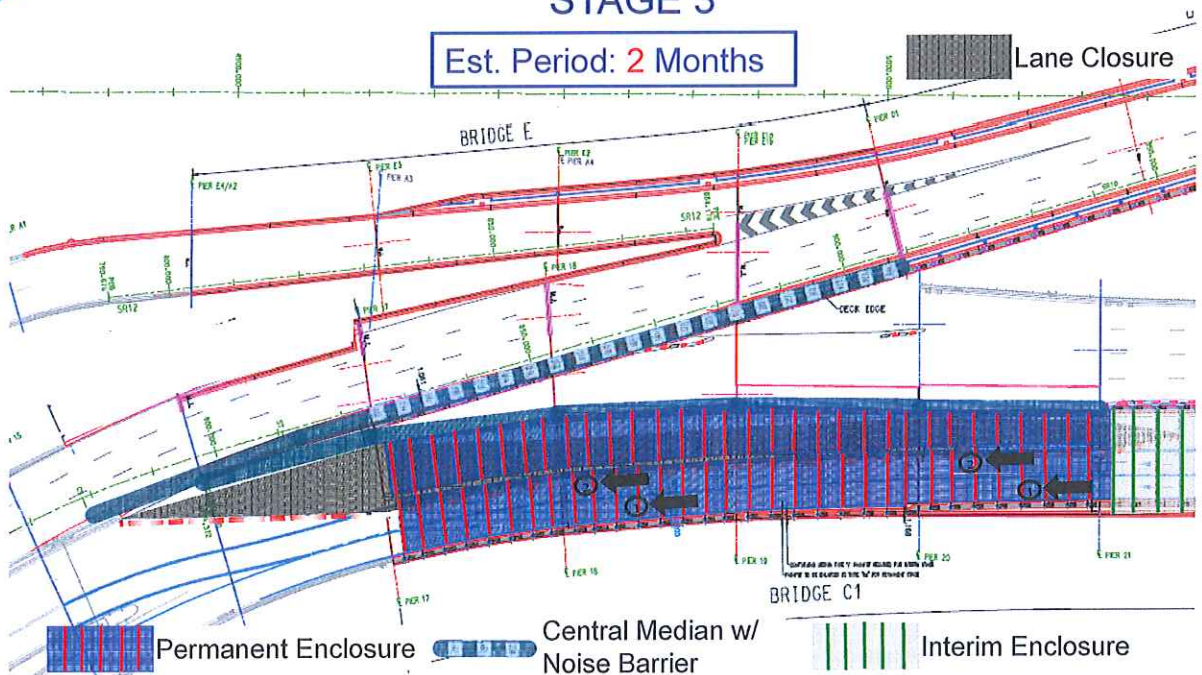
STAGE 2

Est. Period: 1 Months



STAGE 3

Est. Period: 2 Months



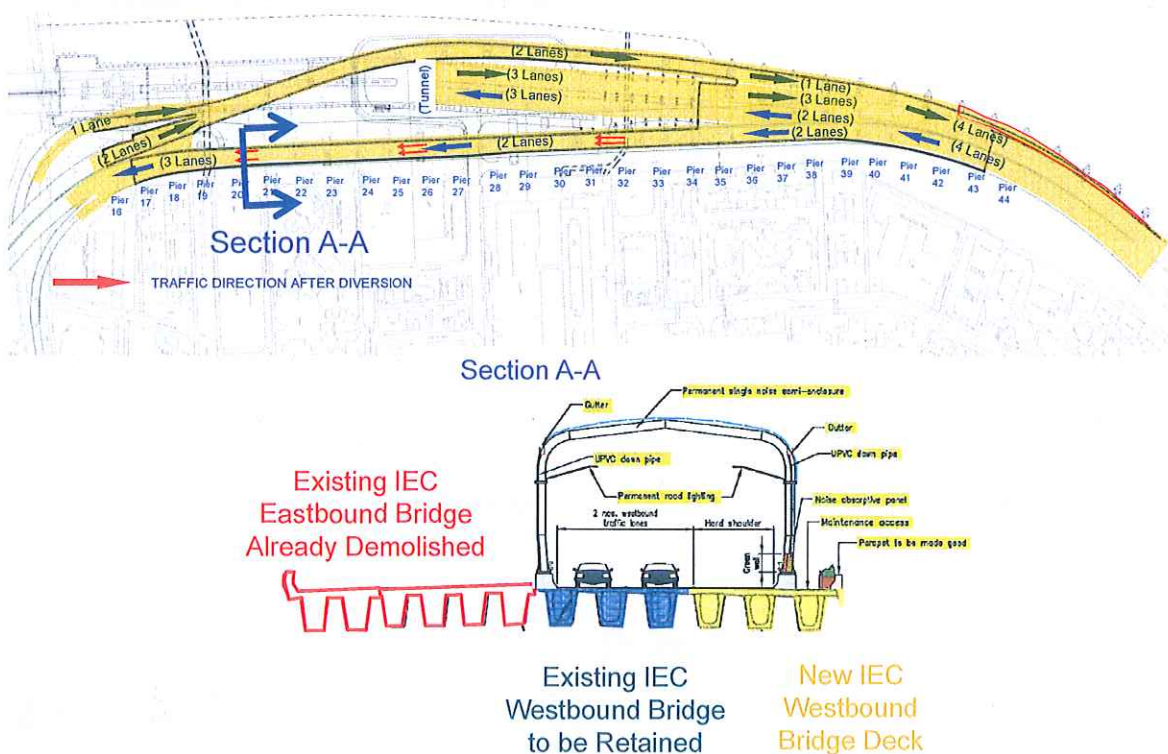
Traffic Flow AFTER CWB TUNNEL OPENING

Comparison of Traffic Flow

Peak hour	Current Traffic on Existing 4 Lane Road				Future Traffic on 3-Lane/2-Lane Road after Tunnel Opening *			
	Number of vehicles, Passenger Car Units		Overall V/C Ratio		Number of vehicles, Passenger Car Units		Overall V/C Ratio	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Monday	8331	8069	1.32	1.28	4759	4585	1.01	0.98
Tuesday	7839	7380	1.24	1.17	4533	4162	0.96	0.89
Wednesday	7019	7413	1.11	1.18	4008	4136	0.85	0.88
Thursday	7118	7150	1.13	1.13	3929	4169	0.84	0.89
Friday	8167	8528	1.30	1.35	4684	4927	1.00	1.05
Saturday	5346	5150	0.85	0.82	3103	2758	0.66	0.59
Sunday	4231	4010	0.67	0.64	2283	2519	0.49	0.54

*Note: Tunnel Opening assumed to be in 2018. Assuming 1.2% traffic growth per year based on the AADT traffic census. It has been assumed that 90% of traffic going to Central, Wan Chai and Western District direction will use the new tunnel

After CWB Tunnel Opening – Completion of Noise Enclosure at Piers 17-21



Programme of Works for Construction of Noise Barrier / Enclosure AFTER CWB TUNNEL OPENING

- Stage 1**
 - After CWB Commissioning, **2 Months**
 - Maintain 2 Lanes, Traffic shift to North Side
- Stage 2**
 - 1 + 1 Lane, **1 Month**
- Stage 3**
 - **2 Months**
 - Traffic shift to South Side

Comparison Table for Construction of Noise Enclosure along Piers 17-21 Before and After CWB Tunnel Opening

Construction Before CWB Tunnel Opening	Construction After CWB Tunnel Opening
- 5 stages of TTA required	- Only 3 Stages of TTA required
- 7 months of construction period	- Only 5 months of construction period
- Involve 4 lanes of traffic	- Only involve 2 lanes of traffic
- 2+2 TTA & 3+1 TTA	- 1+1 TTA
- More Night time work Required	- Less night time work required

Construction of Noise Enclosure at Piers 17-21 after Tunnel Opening

- Contract Provision
- Interim Noise Enclosures should be completed as far as possible and effective at the time of tunnel opening

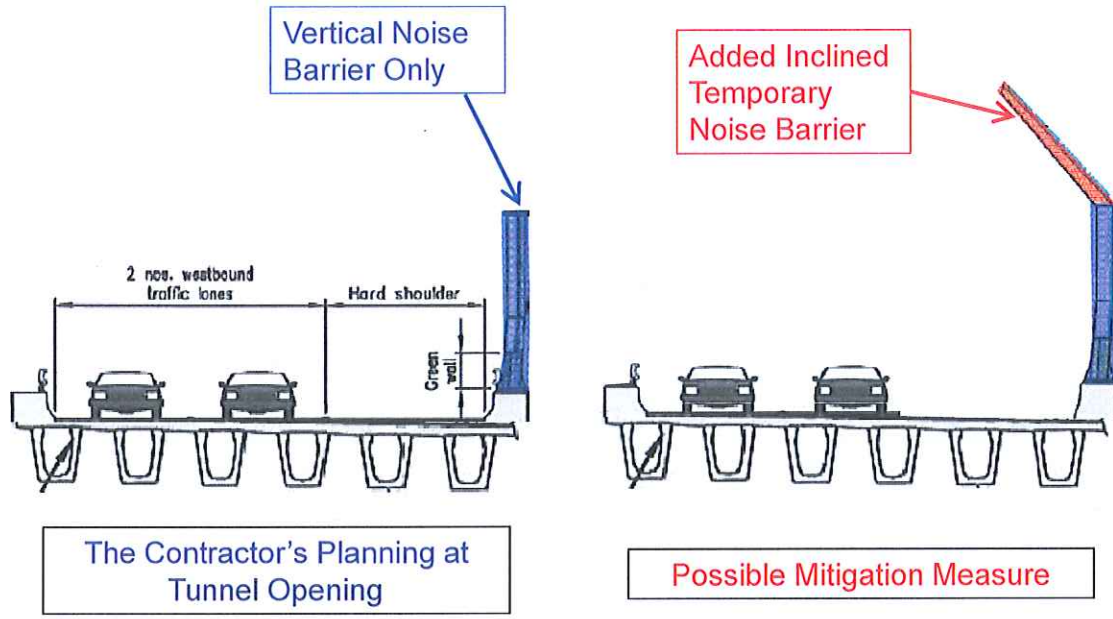


Construction of Noise Enclosure at Piers 17-21 after Tunnel Opening

- Advantages
 - Shorter Construction Period
 - Less Night Work
 - Only Two Lanes of Traffic Involved
 - ➔ Less Nuisance to Public
 - ➔ Less Risks to Road Users
- Disadvantages
 - Noise Enclosure Incomplete

Construction of Noise Enclosure at Piers 17-21
after Tunnel Opening

• Mitigation Measures



The Contractor's Planning at Tunnel Opening

Possible Mitigation Measure

Appendix C

Minutes of TMLG Meeting No. 28 with Approved TTA Drawings



俊和-中國中鐵-中鐵大橋局聯營
CHUN WO - CRGL - MBEC JOINT VENTURE

Your ref. : N/A
Our ref. : CWCRMBJV/610/15173-2014

7 October 2014

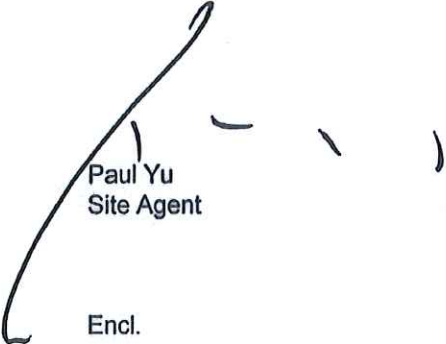
To: Distribution

Dear Sir/Madam,

Contract No. HY/2009/19
Central – Wan Chai Bypass – Tunnel (North Point Section) and Island Eastern Corridor Link
Minutes of TMLG Meeting No. 28 on 17 Sep 2014

Further to the TMLG meeting no. 28 on 17 Sep 2014, please find the attached copy of meeting minutes for your information and record.

Yours faithfully,
For and on behalf of
Chun Wo – CRGL – MBEC Joint Venture


Paul Yu
Site Agent

Encl.

c.c. AECOM (H.O.) - Mr. Alex Li] w/e
Head Office] w/e


PY/EF/BD/CY/cl

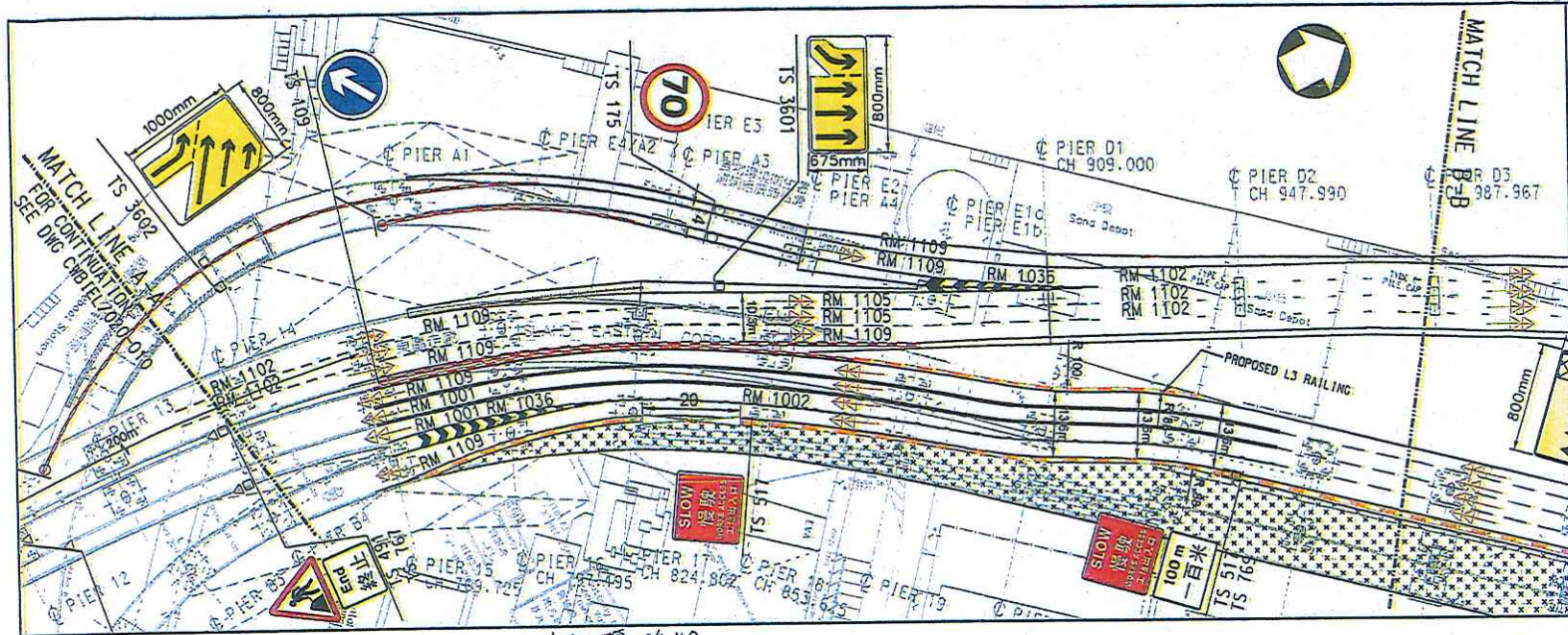
Contract No. HY/2009/19
Central – Wai Chai Bypass (North Point Section)
and Island Eastern Corridor Link

Minutes of Meeting

Subject : TMLG Meeting No. 28 (rev.0)	Date of Meeting : 17 Sep 2014	
	Time : 3:30 p.m.	
	Place : Meeting Room 1, CRE's Office 11/F, Sea view Estate, Watson Road, North Point	
Recorded by : Charles Yeung	Preparation Date : 19 Sep 2014	
<u>Attendees:</u>		
Name	Position	Company / Department
Bear Ding	Section Agent	Chun Wo-CREC-MBEC Joint Venture (CCMJV)
Chan Sui Fung	Ass. Section Agent	
George Lee	Ass. Section Agent	
Charles Yeung	Engineer	
Samuel Lee	Executive Engineer	Meinhardt (MIEL) , Traffic Consultant
Eva Yang	Graduate Engineer	
Stephen S.K. Chiu	E/SR6 SRD	SRD,TD
Jackei Yin	E11/CWB	HyD/MWPMO
H.W. Wong	RMO (SGT)	HKPF
K H Cheng	SRE	AECOM
George Lau	RE	
Paul Yim	RE	
Terence Ho	SIOW	
S.F Ng	IOW	
Edmund Wong	RIOW	
S.L Kong	AIOW	

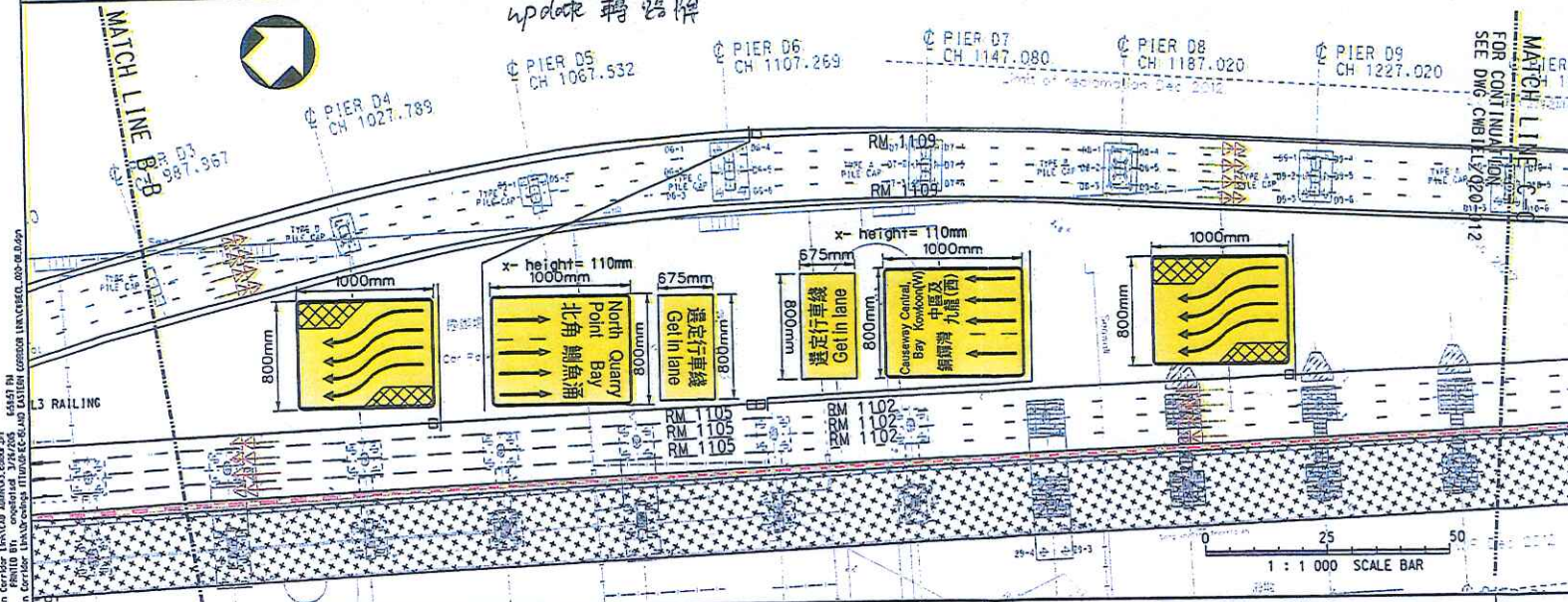
<u>Item</u>	<u>Description</u>	<u>Action</u>
2.3	Initial Condition Survey at Hing Fat Street (Drawing No. CWBIECL/061-001~015)	
2.3.1	CCMJV presented the TTA drawings for initial condition survey at carriageway of Hing Fat Street.	Noted
2.3.2	TMLG members had no objection on the proposed TTA (Drawing No. CWBIEL/061-001, 004, 007, 009, 010 and 012.	Noted
2.3.3	TMLG members had below comments for Drawing No. 061-002, 003, 005, 006, 008, 011 and 015 a) The letter height for the proposed map type directional signs should be 100mm and the signs should be shifted towards west in Drawing No. 061-002. b) Temporary traffic sign TS492 and TS494 should be replaced by temporary map type directional sign in Drawing No. 061-003, 005 and 008. c) CCMJV should seek comments from LCSD of Victoria Park for works in Drawing No. 061-005. d) The existing road marking "turn left arrow" at the southbound of Hing Fat Street adjacent to Gordon House should be revised to "straight ahead & turn left arrow" in Drawing No. 061-011 e) The drawing title should be revised in Drawing No. 061-015 f) CCMJV should seek comments from Tung Lo Wan Fire Station for temporarily closure of northbound at Hing Fat Street outside Fire Station in Drawing No. 061-006 The drawings above except Drawing No. 061-006 would be revised and circulated via email for confirmation.	CCMJV
2.3.4	TMLG members had below comments for Drawing No. 061-013 and 014 a) CCMJV should seek comments from Tung Lo Wan Fire Station for temporarily closure of left lane at Victoria Road outside Fire Station in Drawing No. 061-013. b) Traffic cones should be used instead of barriers fence outside Tung Lo Wan Fire Station at Victoria Park Road in Drawing No. 061-013. c) Temporary traffic sign TS494 should be replaced by map type directional sign at Hing Fat Street in Drawing No. 061-013 & 014. d) The drawing title should be revised in Drawing No. 061-014 e) The closure hours should be revised to 00:00~06:00 in Drawing No. 061-013 & 014 f) CCMJV would further review whether the left lane at Hing Fat Street for left turn to Gordon Road would be temporarily closed for surveying works in Drawing No. 061-013 & 014. The drawings above would be revised and discussed in next TMLG meeting	CCMJV CCMJV CCMJV
3.	TTAs for Extension of Road Works Advice/ Renew Endorsement ● NIL	

<u>Item</u>	<u>Description</u>	<u>Action</u>
4.	AOB	
4.1	<p>Supplementary documents for TTA of Hing Fat Street slip road diversion to new eastbound bridge</p> <p>a) CCMJV was requested to provide 2 no. 12m long lay-by at the new IEC E/B bridge</p> <p>b) Site Inspection with TMLG members will be held on 23 September 2014</p> <p>c) Bus trial-run would be arranged on 25 September 2014</p> <p>d) The Hing Fat Street slip road diversion to the new eastbound bridge would be implemented at 6:00am on 28 September 2014.</p> <p>e) CCMJV will provide numbering system for temporary lamp posts along new E/B Bridge. Plan of numbering system will be sent to TMLG members.</p>	<p>Noted</p> <p>Noted</p> <p>Noted</p> <p>Noted</p> <p>Noted</p>
4.2	<p>Combine Drawing of TTA Scheme Stage 1A & Option 1 / Stage 1B & Option 1 (Drawing No. CWBIEL/035-001-001A, 035-002-001A, 035-001-001A, 036-001-001A and 036-002-001A)</p> <p>CCMJV presented the TTA drawings for combined scheme of Stage 1A/1B & Option 1</p> <p>a) TMLG members requested CCMJV to review the construction programme to minimize the duration of TTA for removal existing parapet for reduction of traffic impact.</p> <p>b) Road marking at slip road from Victoria Park Road will be revised by Contact No. HY/2010/08 which TTA will be implemented in End of September 2014.</p> <p>c) HyD reminded that as per previous TMLG request, announcement on the existing VMS and CWB website should be carried out to publicize the TTA prior to its implementation.</p> <p>TMLG Members had no comments on the above drawings.</p>	<p>Noted</p> <p>CCMJV</p> <p>Noted</p> <p>Noted</p> <p>Noted</p>
4.3	<p>TTA for Cutting Deck Slab Works at W/B Fast Lane (Stage 3D) (Drawing No. CWBIECL/043-001~003 -001)</p> <p>CCMJV presented the sequence of realignment of road markings and rearrangement of existing road studs along IEC westbound.</p> <p>TMLG Members had no comments on the above sequence.</p>	<p>Noted</p> <p>Noted</p>



- NOTES:**
1. ALL TEMPORARY LIGHTING, SIGNING, TRAFFIC CONES AND ROAD MARKINGS SHOULD BE CARRIED OUT IN ACCORDANCE WITH THE CODE OF PRACTICE FOR THE LIGHTING, SIGNING AND GUARDING OF ROAD WORKS BY HIGHWAY DEPARTMENT AND TRANSPORT PLANNING AND DESIGN MANUAL BY TRANSPORT DEPARTMENT.
 2. AMBER REVOLVING LANTERN SHOULD BE PROVIDED TO ALL WORKS ACCESS. FOR DETAILS PLEASE REFER THE CODE OF PRACTICE FOR THE LIGHTING SIGNING AND GUARDING OF ROAD WORKS.
 3. TWO ESCORT VEHICLES FOR ENTRANCE / EXIT IF NECESSARY
 4. THE INFORMATION SIGNS, WHICH LOCATED ALONG THE MEDIAN BARRIER WILLBE REMOVED AFTER DEMOLISHED OF IEC W/B BRIDGE.

- LEGEND:**
- CONES
 - WATER FILLED BARRIER
 - PROPOSED WORKS AREA (CONSTRUCTION OF NEW IEC BRIDGE)
 - SITE ACCESS
 - TRAFFIC FLOW
 - TEMPORARY STEEL PARAPETS
 - TEMPORARY L3 RAILING



Tentative Implementation Period		
From	To	Duration
Approved At:	TMLG No. 35	Date: 12 MAR 2015
Designed by:	Traffic Engineer	Date: 26 MAY 2015
Checked by:	Contractor	Date: 27 MAY 2015
Endorsed by:	Engineer's Representative	Date: 27.3.2015
TTA IMPLEMENTATION TIME: 24 HOURS		
TENTATIVE COMMENCEMENT DATE	DURATION OF WORKS	
APR 2015	14 MONTHS	
PURPOSE:	PLAN ID:	
PURPOSE:	PLAN ID:	

路政署 HIGHWAYS DEPARTMENT

 主要工程管理部 MAJOR WORKS PROJECT MANAGEMENT OFFICE

 AECOM

和-中國-中國-中國大橋局

 CHINA WO - CECIL - IMEC JOINT VENTURE

 MEIN+JARDT

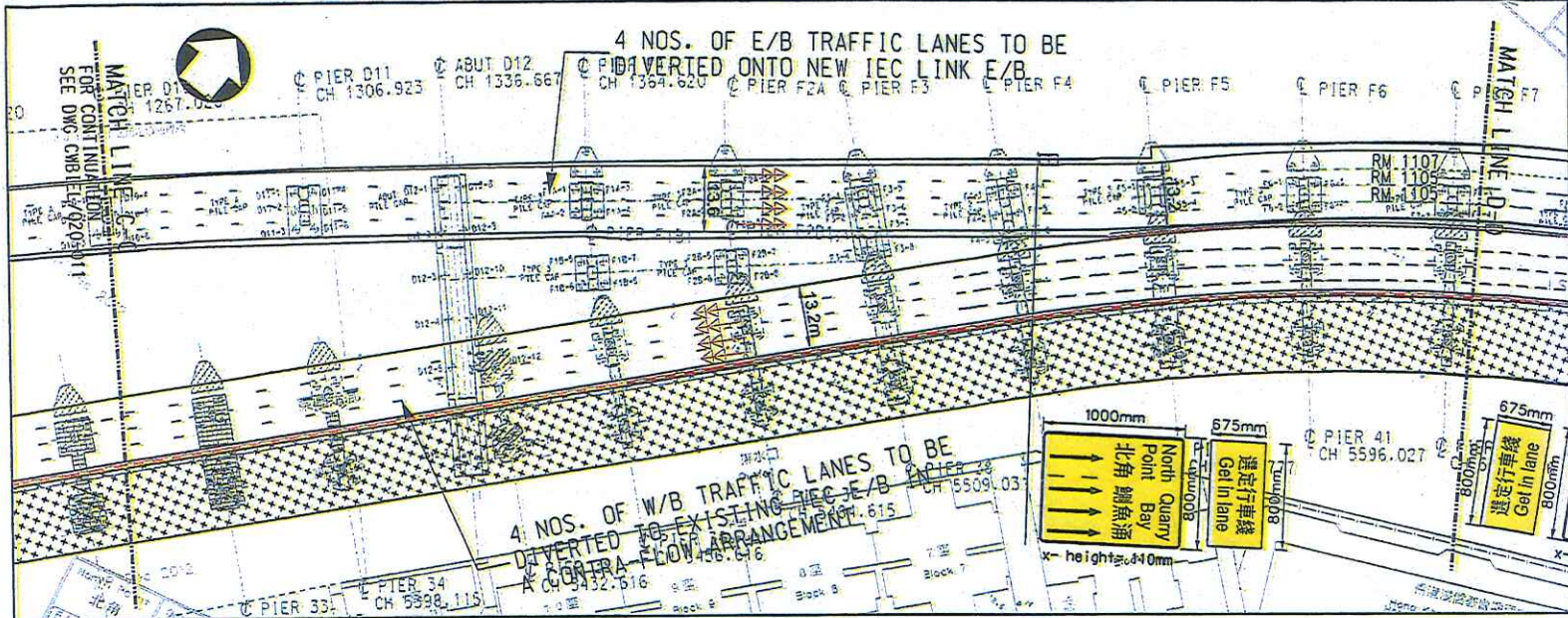
 Infrastructure and Environment Limited

 基礎設施環境工程顧問有限公司

Project	CONTRACT NO. HY/2009/19 CENTRAL - WAN CHAI BYPASS TUNNEL (NORTH POINT SECTION) AND ISLAND EASTERN CORRIDOR LINK		
Drawn	Checked	Approved	SL
AT	JC	SL	

Title			
TEMPORARY TRAFFIC ARRANGEMENT FOR RECONSTRUCTION OF EXISTING W/B IEC BRIDGE			
Scale	Date	Drawing No.	Rev.
1 : 1000	JUL 2014	CWBIECL/020-011	D

EASTERN CORRIDOR LINK (ECL) CONTRACT NO. HY/2009/19
 CONTRACTOR: CHINA WO - CECIL - IMEC JOINT VENTURE
 CONTRACT VALUE: HK\$1,100,000,000.00
 PROJECT NO: ECL/020-011
 DRAWING NO: CWBIECL/020-011
 DATE: 27 MAR 2015
 SCALE: 1:1000



- NOTES:**
- ALL TEMPORARY LIGHTING, SIGNING, TRAFFIC CONES AND ROAD MARKINGS SHOULD BE CARRIED OUT IN ACCORDANCE WITH THE CODE OF PRACTICE FOR THE LIGHTING, SIGNING AND GUARDING OF ROAD WORKS BY HIGHWAY DEPARTMENT AND TRANSPORT PLANNING AND DESIGN MANUAL BY TRANSPORT DEPARTMENT.
 - AMBER REVOLVING LANTERN SHOULD BE PROVIDED TO ALL WORKS ACCESS. FOR DETAILS PLEASE REFER THE CODE OF PRACTICE FOR THE LIGHTING SIGNING AND GUARDING OF ROAD WORKS.
 - TWO ESCORT VEHICLES FOR ENTRANCE / EXIT IF NECESSARY.
 - THE INFORMATION SIGNS, WHICH LOCATED ALONG THE MEDIAN BARRIER WILL BE REMOVED AFTER DEMOLISHED OF IEC W/B BRIDGE.

- LEGEND:**
- CONES
 - WATER FILLED BARRIER
 - PROPOSED WORKS AREA (CONSTRUCTION OF NEW IEC BRIDGE)
 - SITE ACCESS
 - TRAFFIC FLOW
 - TEMPORARY STEEL PARAPETS
 - TEMPORARY L3 RAILING

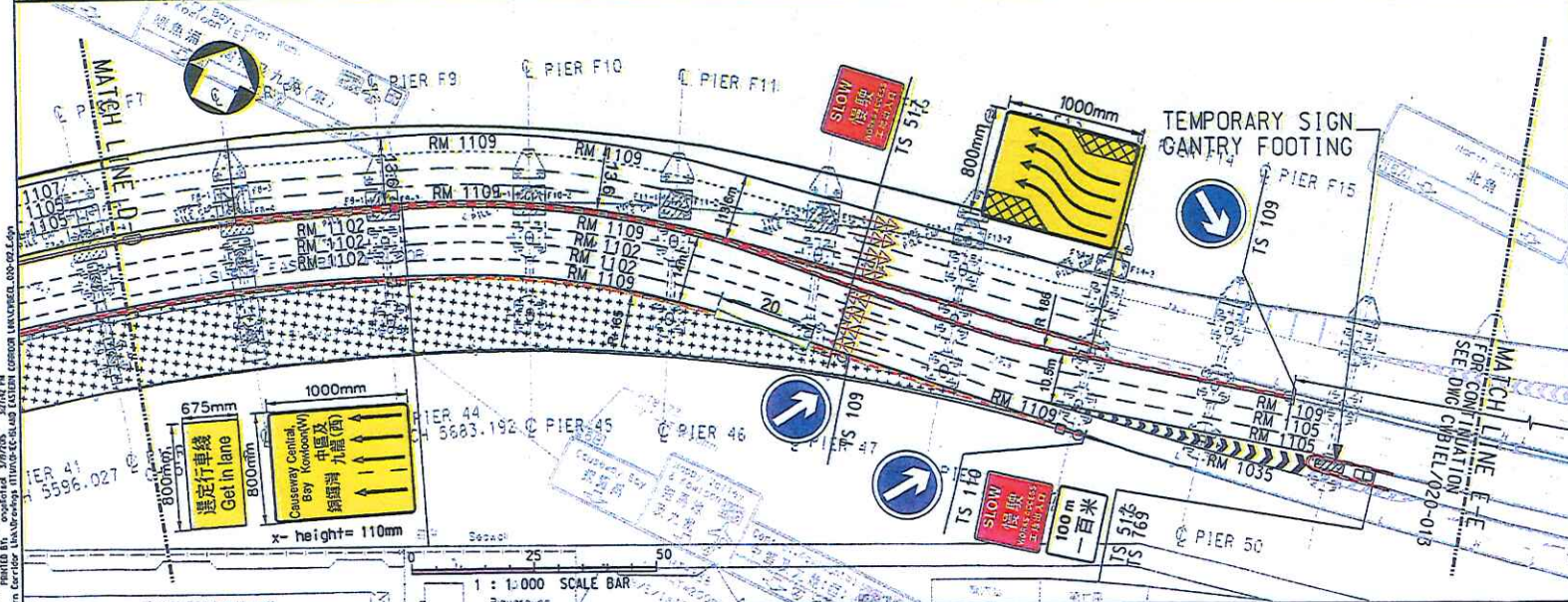
Tentative Implementation Period		
From	To	Duration
Approved At:	MLG No. 35	Date 17 MAR 2015
Designed by:	Traffic Engineer	Date
Checked by:	Contractor	Date
Endorsed by:	Ernst & Young	Date 19.3.2015

TTA IMPLEMENTATION TIME: 24 HOURS

TENTATIVE COMMENCEMENT DATE	DURATION OF WORKS
APR 2015	14 MONTHS

PURPOSE: PLAN ID:

PLAN REF:



路政署
 HIGHWAYS DEPARTMENT
 交通工程處
 MAJOR WORKS PROJECT MANAGEMENT OFFICE
 AECOM

E	REMOVED FAS AND TRAFFIC SIGNS	12MAR15
D	ADDED SIGN GANTRY FOOTING	23JAN15
C	REVISED TRAFFIC SIGNS SIZE	23DEC14
B	INCORPORATED TMLG'S COMMENTS	17SEP14
A	INCORPORATED TMLG'S COMMENTS	27AUG14
REV.	Amendment	Date

Project	CONTRACT NO. HY/2009/19 CENTRAL - WAN CHAI BYPASS TUNNEL (NORTH POINT SECTION) AND ISLAND EASTERN CORRIDOR LINK		
Drawn	AT	Checked	JC
Approved	SL		

Title	TEMPORARY TRAFFIC ARRANGEMENT FOR RECONSTRUCTION OF EXISTING W/B IEC BRIDGE		
Scale	Date	Drawing No.	Rev.
1 : 1000	JUL 2014	CWBIECL/020-012	E

AECOM Eastern Corridor (SANGKAP BARRAGE) 3074R RM
 3/10/15 BY: [Signature] 3/10/15
 AECOM Eastern Corridor (SANGKAP BARRAGE) 3074R RM
 3/10/15 BY: [Signature] 3/10/15

Appendix D

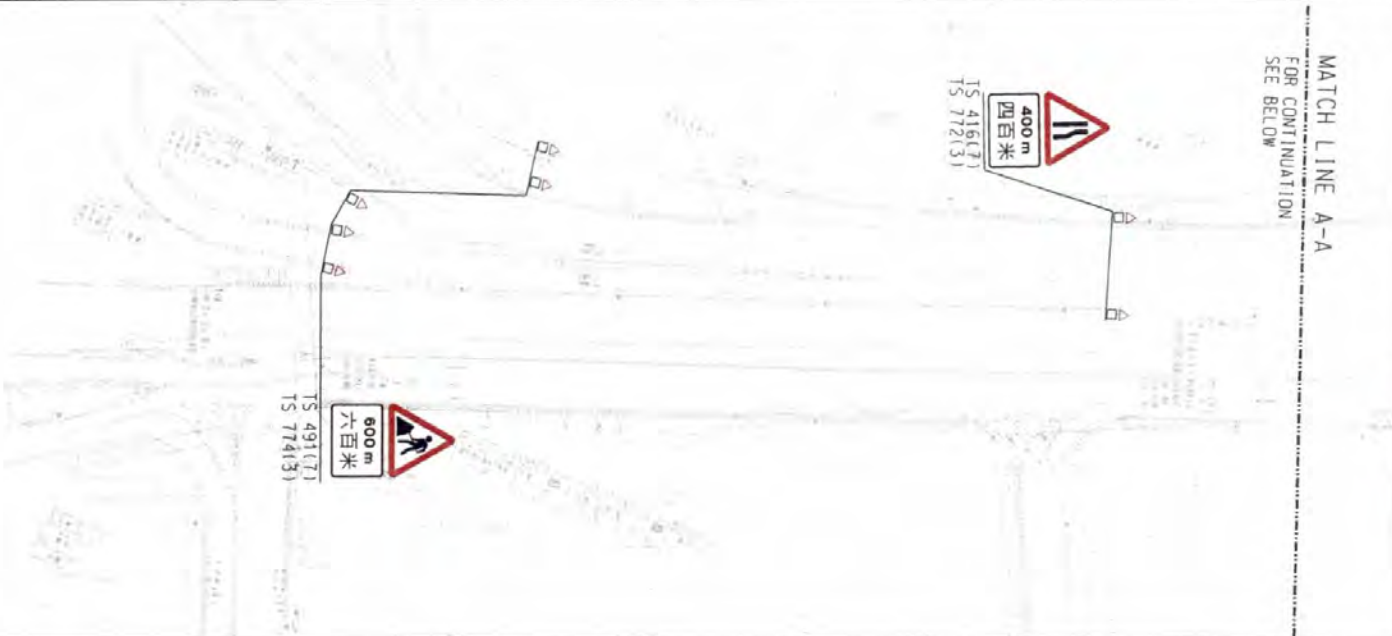
Minutes of TMLG Meeting Nos. 47 and 48

<u>Item</u>	<u>Description</u>	<u>Action</u>
1.	Confirmation of Minutes of Last TMLG meeting	
1.1	TMLG No.46 meeting minutes will be confirmed on next TMLG Meeting No.48	Noted
2.	TTA for proposed TTA drawings	
2.1	TTA for Laying Cross Road duct at Hing Fat Street (Drawing No.: CWBIEL/058-062-066)	
2.1.1	CCMJV presented the TTA scheme for Laying Cross Road duct at Hing Fat Street	Noted
2.1.2	TMLG Members had below comments: <ul style="list-style-type: none"> a) At drawing no. 058-062, TS 513 should be added and 1.5m minimum width for footpath should be maintained. b) At drawing no.058-063 to 065, the traffic signs placed in bus stop (TS 494, TS 417 & TS 491) should be moved toward southern; The map-type should be provide in each drawings. c) At drawing no. 058-063 & 066, 1.5m minimum width for footpath should be provided. d) CCMJV should liaise with the management of Victoria Park and bus company regarding the schedule of coming event to be held in the park to ensure proper arrangement could be made to suit the event. 	CCMJV
2.1.3	TMLG Members had no objection to the proposed TTA. The above comments would be addressed in the revised drawing.	Noted
2.2	TTA for Trial Pit Excavation at Hing Fat Street (Drawing No. CWBIEL/058-067)	
2.2.1	CCMJV presented the TTA schemes Trial Pit Excavation at Hing Fat Street.	Noted
2.2.2	TMLG Members had below comments: <ul style="list-style-type: none"> a) Minimum 1.5m width for footpath should be maintained. b) The period of decking to be provided should be from 17:00 to 07:00. 	CCMJV
2.2.3	TMLG Members had no objection to the proposed TTA. The above comments would be addressed in the revised drawing.	Noted

2.3	TTA for Road Marking Modification for Closed IEC E/B Bridge (3 Lanes Extension) Drawing No.: CWBIECL/020-134 to 139	
2.3.1	CCMJV presented the TTA schemes Road Marking Modification for Closed IEC E/B Bridge	Noted
2.3.2	TMLG Members had below comments: a) In drawing no. 020-135, the traffic cone between main flow from North Point and Slip Road from Tong Shui Road will be extended 10m length. b) TD & Police commented & requested for traffic data to support the proposal.	CCMJV
2.3.3	This TTA will be implemented in the 3 rd quarter of 2016, it will discuss in the future TMLG meeting.	Noted
2.4	TTA for Construction of Noise Enclosure at New W/B Bridge (Drawing No. CWBIEL/029-005-018)	
2.4.1	CCMJV presented the TTA schemes for construction of noise enclosure at new W/B Bridge.	Noted
2.4.2	TMLG Members had below comments: a) There is a lane closure at IEC EB, TD suggest to discuss with District Council b) AECOM and CCMJV replied that the above section have closed with 24hrs TTA from End of 2014 to April of 2015 for the construction works of Bridge E. c) TD commented that if there are two schemes of TTA will be implemented at the same time at IEC WB; TD requested these two schemes should be combined in to one set of TTA. d) TD commented that it is necessity to brief EDC the proposed concurrent implementation of TTA schemes in 2016Q3 for NB erection and the 3-lane TTA scheme	CCMJV
2.4.3	TMLG Members suggest CCMJV to review the scheme, provide more information and discuss in the next TMLG.	Noted
3.	TTAs for Extension of Road Works Advice/ Renew Endorsement (Drawing No. CWBIEL/020-096E)	
3.1	TTA for Parapet Works, Planters and Lighting at Bridge E	
3.1.1	CCMJV requested to renew the endorsement for proposed TTA drawings.	Noted
3.1.2	TMLG Members had below comments: a) The duration of the TTA should be revised as 6 months instead of 24 months.	CCMJV
3.1.3	TMLG Members had no objection to the proposed TTA. The above comments would be addressed in the revised drawing.	Noted
3.2	TTA for Trial Pit Excavation at Hing Fat Street (Drawing No. CWBIEL/058-032)	
3.2.1	CCMJV requested to renew the endorsement for proposed TTA drawings.	Noted

3.2.2	TMLG Members had below comments: a) Traffic Sign TS 513 should be added for the TTA scheme.	Noted
3.2.3	TMLG Members had no objection to the proposed TTA. The above comments would be addressed in the revised drawing.	Noted
3.3	TTA for Water main and sewer construction at Oil Street (Drawing No. CWBIECL_OS/027-015 & 021)	
3.3.1	CCMJV requested to renew the endorsement for proposed TTA drawings.	Noted
3.3.2	TMLG Members had below comments: a) At Drawing CWBIECL_OS/027-015 & 021, Map-type should be also provided the turning at King Wah Street / Oil Street junction toward Electric Road. b) Swept path analysis for turning at King Wah Street / Oil Street junction toward Oil Street should be for 7m length vehicle at these TTA schemes.	CCMJV
3.3.3	TMLG Members had no objection to the proposed TTA. The above comments would be addressed in the revised drawing.	Noted
4.	Any Other Business	
4.1	TTA for Repair of Movement Joint on IEC EB (Drawing No.: CWBIECL/020-132 & 133)	
4.1.1	CCMJV presented the TTA scheme for repair of movement joint on IEC EB	Noted
4.1.2	TMLG Members had below comments: a) In drawing no. 020-132, tentative commencement date will add "May 2016", duration of works will add "1weeks"	CCMJV
4.1.3	TMLG Members had no objection to the proposed TTA. The above comments would be addressed in the revised drawing.	Noted
4.2	TTA for Repair Works of Exposure White Road Marking at IEC WB (Drawing No.: CWBIECL/020-052 & 054)	
4.2.1	CCMJV presented the TTA scheme for repair Works of Exposure White Road Marking at IEC WB	Noted
4.2.2	TMLG Members had below comments: a) TMLG members commented that there is a merging with Tong Shui Road and IEC WB. To avoid this case, CCMJV will revised the layout and maintains	CCMJV
4.2.3	CCMJV will revise the TTA Drawings and sent to TMLG Members by email for approval.	CCMJV

5	<p>Next Meeting</p> <p>TMLG meeting No. 48 as scheduled to be held in the Conference Room of CRE's office at 02:30 p.m. on 11 May 2016.</p>	
	<p>The meeting adjourned at 16:30p.m.</p>	



MATCH LINE A-A
FOR CONTINUATION
SEE BELOW

- NOTES:
1. ALL TEMPORARY LIGHTING, SIGNING, TRAFFIC CONES AND ROAD MARKINGS SHOULD BE CARRIED OUT IN ACCORDANCE WITH THE CODE OF PRACTICE FOR THE LIGHTING, SIGNING AND GUARDING OF ROAD WORKS BY HIGHWAY DEPARTMENT AND TRANSPORT PLANNING AND DESIGN MANUAL BY TRANSPORT DEPARTMENT.
 2. AMBER REVOLVING LANTERN SHOULD BE PROVIDED TO ALL WORKS ACCESS. FOR DETAILS PLEASE REFER THE CODE OF PRACTICE FOR THE LIGHTING SIGNING AND GUARDING OF ROAD WORKS.
 3. TWO ESCORT VEHICLES FOR ENTRANCE / EXIT IF NECESSARY

- LEGEND:
- WATER-FILL BARRIER
 - WORKS AREA
 - SITE ENTRANCE/EXIT
 - CONES WITH GUARDING
 - TEMPORARY RAILING

MATCH LINE A-A
FOR CONTINUATION
SEE ABOVE



MATCH LINE B-B
FOR CONTINUATION
SEE DOWN
CWBIECL/029-009

TTA IMPLEMENTATION TIME: 24 HOURS	
TENTATIVE COMMENCEMENT DATE OCT 2016	DURATION OF WORKS 1 MONTH
PURPOSE:	PLAN ID:
PLAN REF:	

路政署
HIGHWAYS DEPARTMENT
主要工程管理處
MAJOR WORKS PROJECT MANAGEMENT OFFICE

和合-中國-中國大橋局聯營
CHIN WAI - CHINA - IMBEC JOINT VENTURE

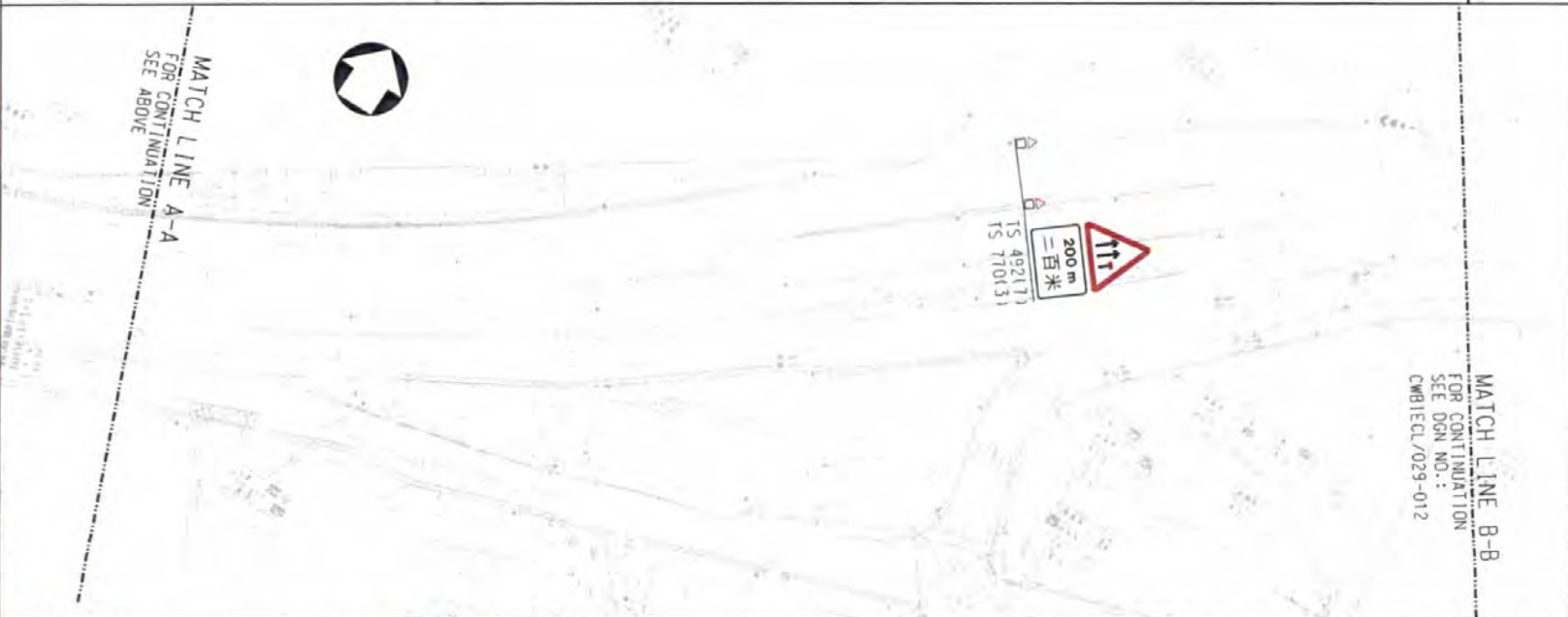
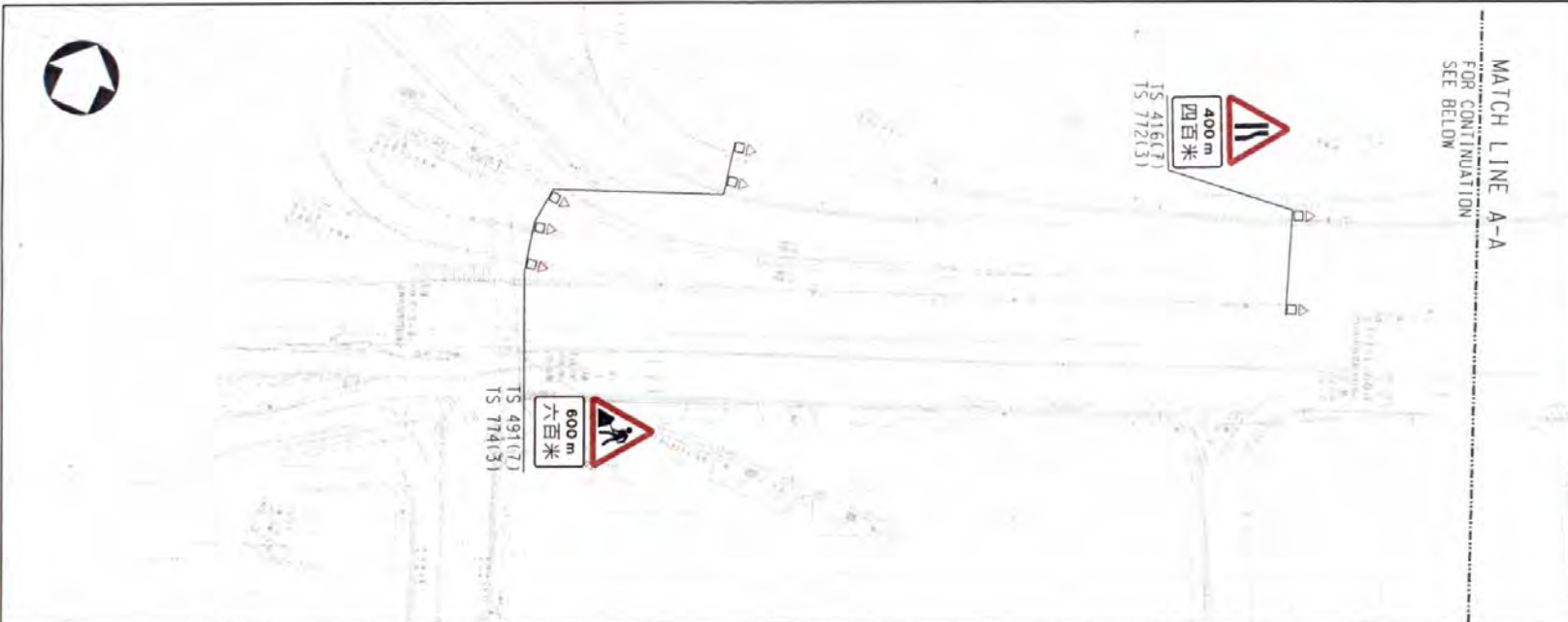
Meinhardt Infrastructure and Environment Limited
邁遜基建設工程顧問有限公司

Project	CONTRACT NO. HY/2009/19	
Drawn	Checked	Approved
AT	JC	SL
REV.	THE FIRST SUBMISSION Amendment	DATE Date

Project	CENTRAL - WAN CHAI BYPASS TUNNEL (NORTH POINT SECTION) AND ISLAND EASTERN CORRIDOR LINK	
Drawn	Checked	Approved
AT	JC	SL

Title	TEMPORARY TRAFFIC ARRANGEMENT FOR CONSTRUCTION OF NOISE ENCLOSURE AT IEC W/B BRIDGE (STAGE2)		
Scale	Date	Drawing No.	Rev.
1:1000	APR 2016	CWBIECL/029-008	-

此圖紙之設計、繪圖、校核、審核、批准、發給、日期、及圖紙編號均與圖紙內之日期及圖紙編號一致。此圖紙之設計、繪圖、校核、審核、批准、發給、日期、及圖紙編號均與圖紙內之日期及圖紙編號一致。



- NOTES:**
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 2. AMBER REVOLVING LANTERN SHOULD BE PROVIDED TO ALL WORKS ACCESS. FOR DETAILS PLEASE REFER THE CODE OF PRACTICE FOR THE LIGHTING SIGNING AND GUARDING OF ROAD WORKS.
 3. TWO ESCORT VEHICLES FOR ENTRANCE / EXIT IF NECESSARY

- LEGEND:**
- WATER-FILL BARRIER
 - WORKS AREA
 - SITE ENTRANCE/EXIT
 - CONES WITH GUARDING
 - TEMPORARY RAILING

TTA IMPLEMENTATION TIME: 24 HOURS	
TENTATIVE COMMENCEMENT DATE NOV 2016	DURATION OF WORKS 3 MONTHS
PURPOSE:	PLAN ID:
PLAN REF:	

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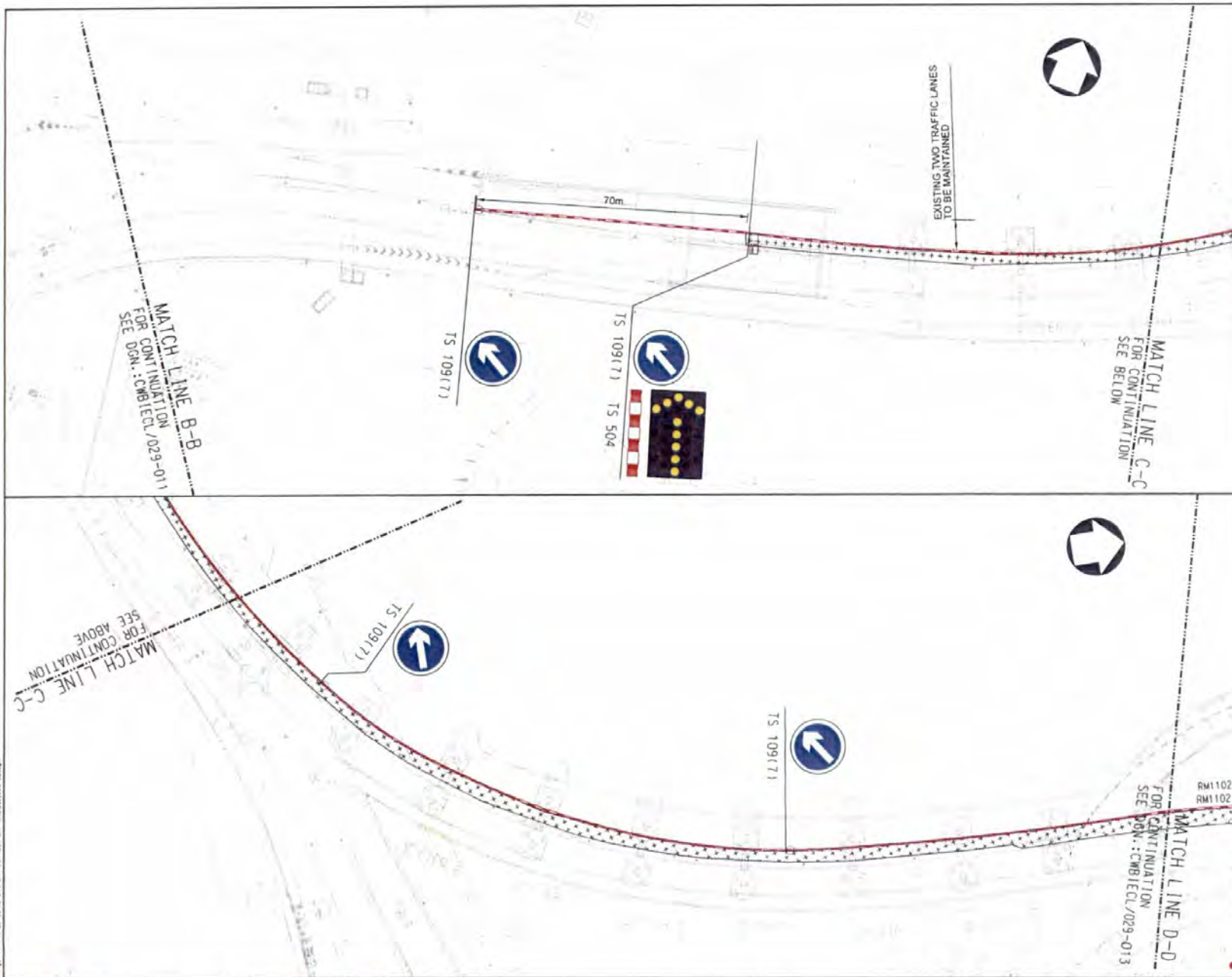
高政署
HIGHWAYS DEPARTMENT
 主要工程管理處
 MAJOR WORKS PROJECT MANAGEMENT OFFICE

和和-中國中國-中國大橋局聯合
 CHINA UNIC - CHINA - MTRCB JOINT VENTURE
MEINHARDT
 Meinhardt Infrastructure and Environment Limited
 遠東基礎設施工程顧問有限公司

REV.	-	THE FIRST SUBMISSION Amendment	01 APR 16 Date
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Project	CONTRACT NO. HY/2009/19 CENTRAL - WAN CHAI BYPASS TUNNEL (NDRTH POINT SECTION) AND ISLAND EASTERN CORRIDOR LINK		
Drawn	Checked	Approved	
AT	JC	SL	

Title	TEMPORARY TRAFFIC ARRANGEMENT FOR CONSTRUCTION OF NOISE ENCLOSURE AT IEC W/B BRIDGE (STAGE 3)			
Scale	Date	Drawing No.	Rev.	
1:1000	APR 2016	CWBIECL/029-011	-	



- NOTES:**
1. ALL TEMPORARY LIGHTING, SIGNING, TRAFFIC CONES AND ROAD MARKINGS SHOULD BE CARRIED OUT IN ACCORDANCE WITH THE CODE OF PRACTICE FOR THE LIGHTING, SIGNING AND GUARDING OF ROAD WORKS BY HIGHWAY DEPARTMENT AND TRANSPORT PLANNING AND DESIGN MANUAL BY TRANSPORT DEPARTMENT.
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 3. TWO ESCORT VEHICLES FOR ENTRANCE / EXIT IF NECESSARY

- LEGEND:**
- WATER-FILL BARRIER
 - WORKS AREA
 - SITE ENTRANCE/EXIT
 - CONES WITH GUARDING
 - TEMPORARY RAILING

TTA IMPLEMENTATION TIME: 24 HOURS	
TENTATIVE COMMENCEMENT DATE NOV 2016	DURATION OF WORKS 3 MONTHS
PURPOSE:	PLAN ID:
PLAN REF:	

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路政署 HIGHWAYS DEPARTMENT 主要工程管理處 MAJOR WORKS PROJECT MANAGEMENT OFFICE	德和-中國-中國-中國大橋局聯營 CHEUN YUO - CHINA - AMEC - HONGKONG VENTURE MEINHARDT Meinhardt Infrastructure and Environment Limited 德信基建環境工程顧問有限公司	Project	CONTRACT NO. HY/2009/19 CENTRAL - WAN CHAI BYPASS TUNNEL (NORTH POINT SECTION) AND ISLAND EASTERN CORRIDOR LINK		Title	TEMPORARY TRAFFIC ARRANGEMENT FOR CONSTRUCTION OF NOISE ENCLOSURE AT IEC W/B BRIDGE (STAGE3)			
		Drawn	Checked	Approved	Scale	Date	Drawing No.	Rev.	
REV.	THE FIRST SUBMISSION Amendment	01APR16 Date	AT	JC	SL	1:1000	APR 2016	CWBIECL/029-012	-

- NOTES:**
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 3. TWO ESCORT VEHICLES FOR ENTRANCE / EXIT IF NECESSARY

- LEGEND:**
- WATER-FILL BARRIER
 - WORKS AREA
 - SITE ENTRANCE/EXIT
 - CONES WITH GUARDING
 - TEMPORARY RAILING

TTA IMPLEMENTATION TIME: 24 HOURS	
TENTATIVE COMMENCEMENT DATE FEB 2017	DURATION OF WORKS 2 MONTHS
PURPOSE:	PLAN ID:
PLAN REF:	

MATCH LINE A-A
FOR CONTINUATION
SEE BELOW

MATCH LINE B-B
FOR CONTINUATION
SEE DON NO.:
CWBIECL/029-015



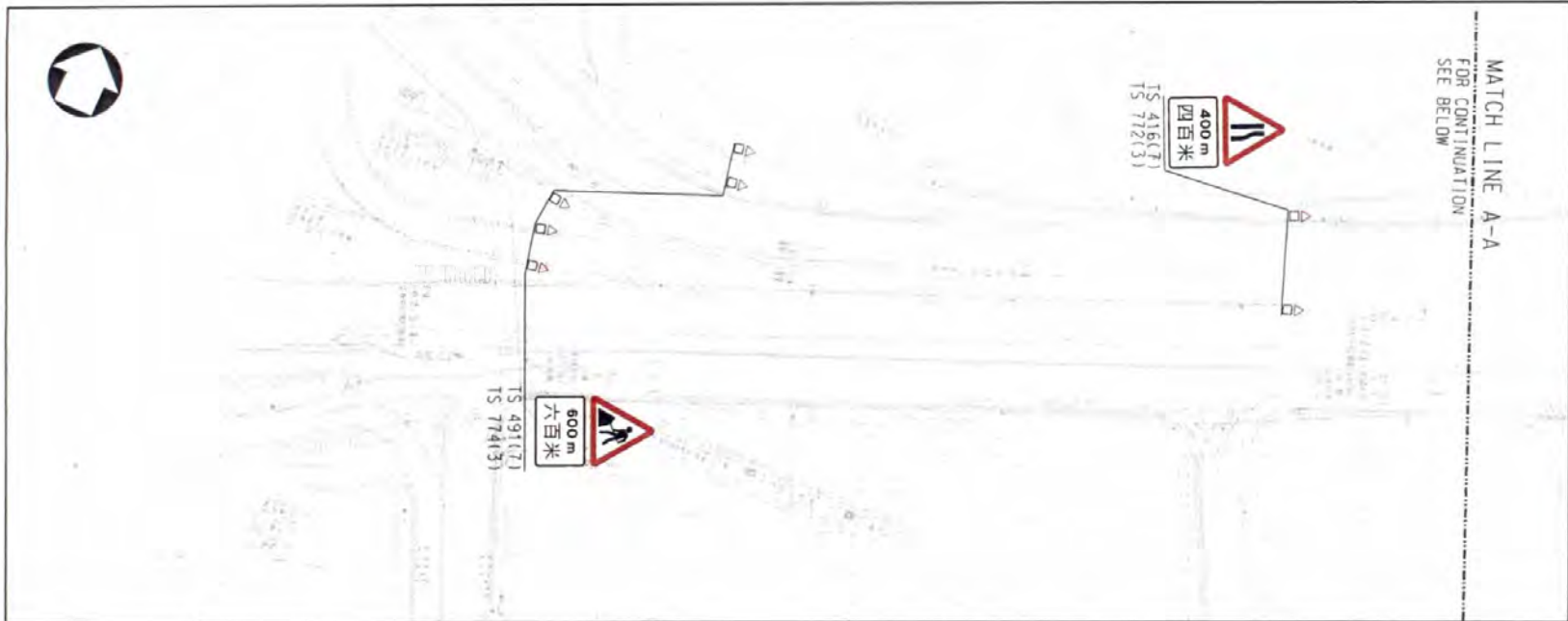
TS 416(7)
TS 712(3)



TS 491(7)
TS 774(3)



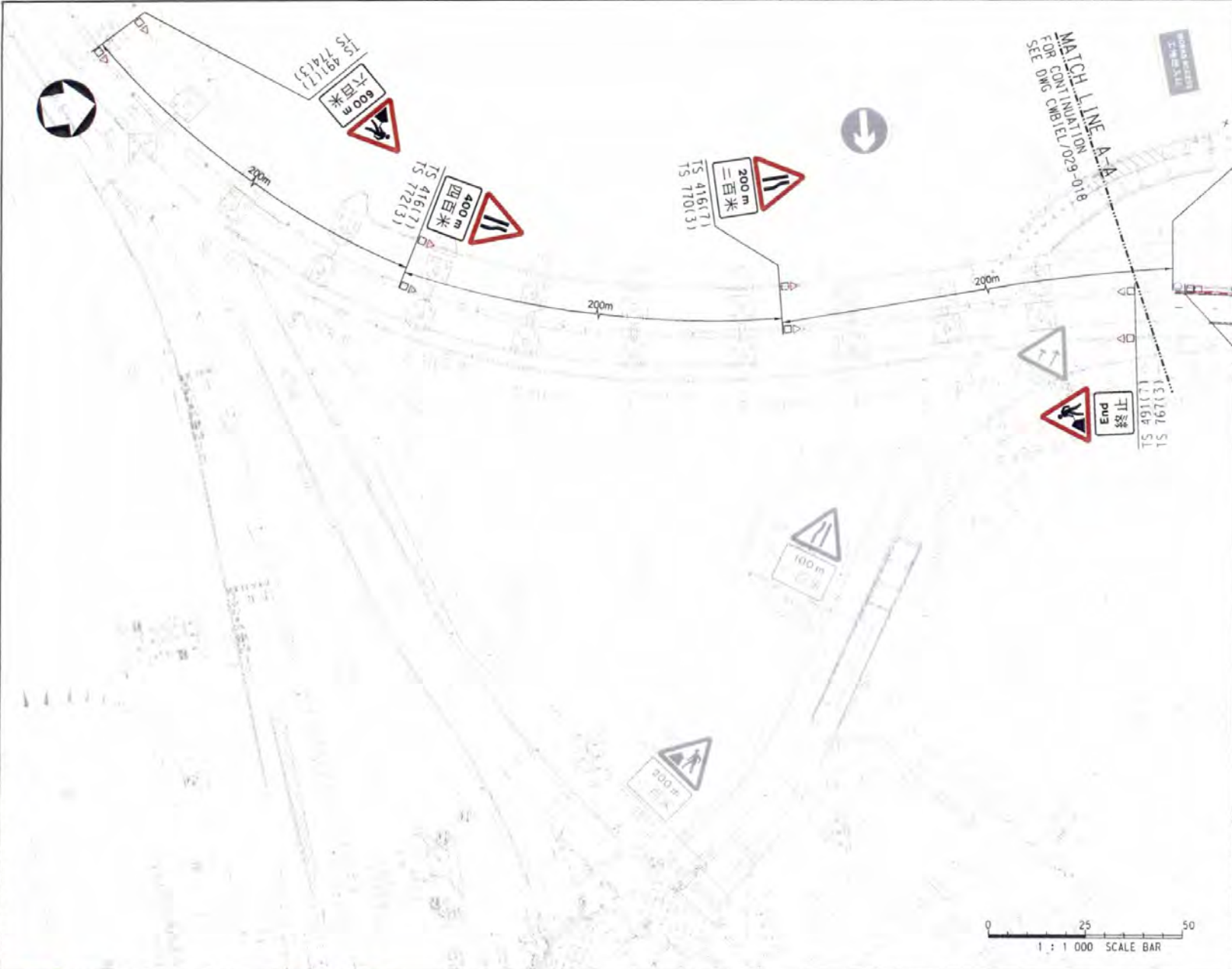
TS 482(7)
TS 710(3)



路政署 HIGHWAYS DEPARTMENT 主要工程督導處 MAJOR WORKS PROJECT MANAGEMENT OFFICE	德和·中國中國·中國大橋局聯營 CHUN W/O · CROU · MBEC JOINT VENTURE MEIN-HARDT Metronic Infrastructure and Environment Limited 德和橋樑環境工程顧問有限公司	REV. Amendment	Date	Project	CONTRACT NO. HY/2009/19 CENTRAL - WAN CHAI BYPASS TUNNEL (NORTH POINT SECTION) AND ISLAND EASTERN CORRIDOR LINK		Title TEMPORARY TRAFFIC ARRANGEMENT FOR CONSTRUCTION OF NOISE ENCLOSURE AT IEC W/B BRIDGE (STAGE 4)			
				Drawn	Checked	Approved	Scale	Date	Drawing No.	Rev.
				AT	JC	SL	1:1000	APR 2016	CWBIECL/029-014	-

NOTED BY: [Signature]
 DATE: 15/04/2016
 PROJECT: IEC W/B BRIDGE (STAGE 4) NOISE ENCLOSURE CONSTRUCTION
 DRAWING NO.: CWBIECL/029-015

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- NOTES:**
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- LEGEND:**
- CONES
 - WATER FILLED BARRIER
 - PROPOSED WORKS AREA (CONSTRUCTION OF NEW IEC BRIDGE)
 - SITE ACCESS
 - TRAFFIC FLOW

TTA IMPLEMENTATION TIME: 24 HOURS	
TENTATIVE COMMENCEMENT DATE APR 2017	DURATION OF WORKS 1.5 YEARS
PURPOSE:	PLAN ID:
PLAN REF:	

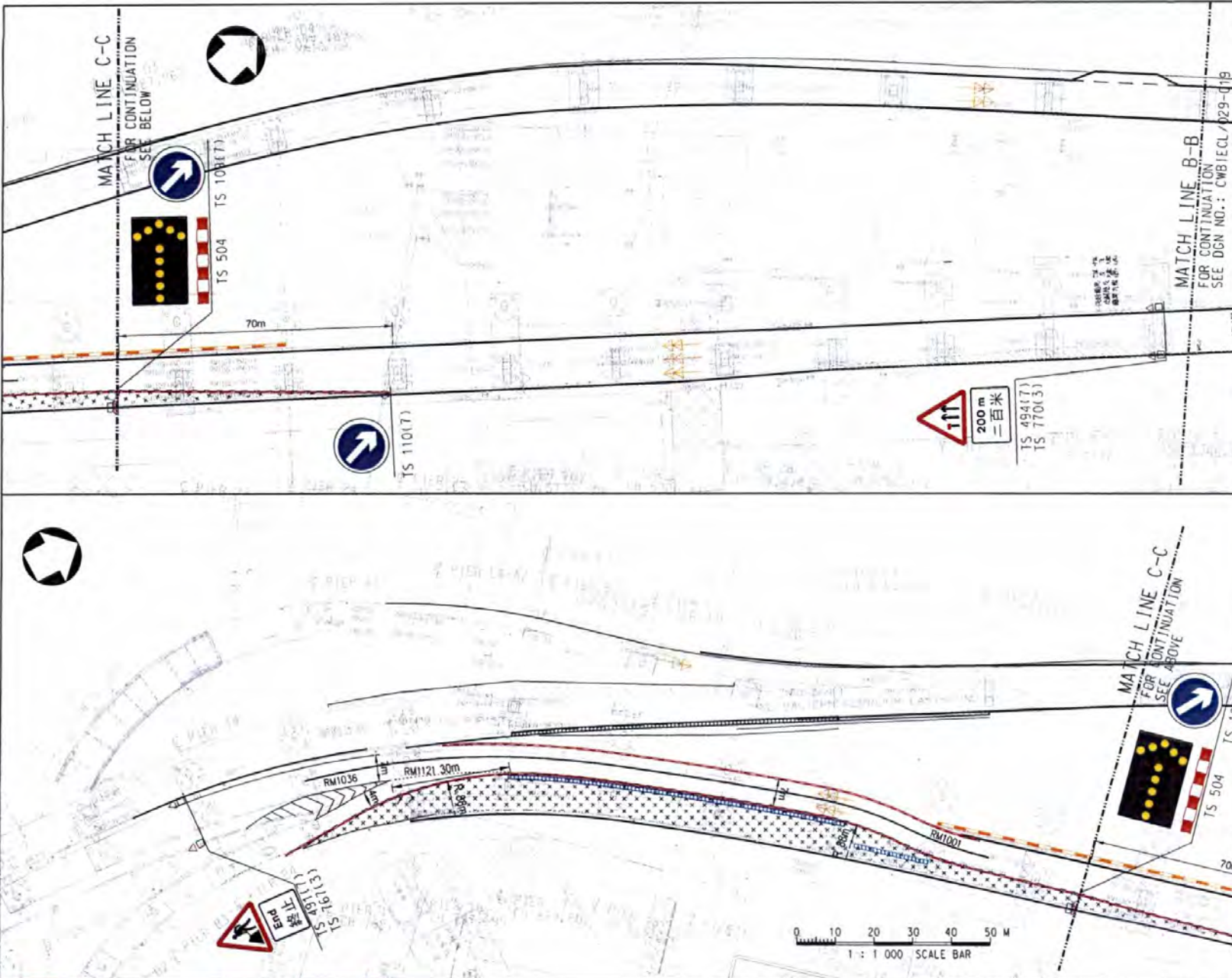
路政署 HIGHWAYS DEPARTMENT 主要工程管理部 MAJOR WORKS PROJECT MANAGEMENT OFFICE	德和·中國·中興·中國大橋局聯合 CHUN WU · CHONG · AMEC JOINT VENTURE MEINHARDT Mainland Infrastructure and Environment Limited 遠東基建環保工程顧問有限公司	Project	CONTRACT NO. HY/2009/19 CENTRAL - WAN CHAI BYPASS TUNNEL (NORTH POINT SECTION) AND ISLAND EASTERN CORRIDOR LINK			Title TEMPORARY TRAFFIC ARRANGEMENT FOR CONSTRUCTION OF NOISE ENCLOSURE AT IEC W/B BRIDGE (STAGE 5)			
		REV.	Amendment	Date	Drawn AT	Checked JC	Approved SL	Scale 1 : 1000	Date APR 2016

<u>Item</u>	<u>Description</u>	<u>Action</u>
1.	Confirmation of Minutes of Last TMLG meeting	
1.1	TMLG No.46 and 47 meeting minutes were confirmed by TMLG members except TD.	Noted
1.2	TD commented that they cannot receive the meeting minutes of TMLG No.47 thus they cannot review and confirm the meeting minutes. CCMJV have sent out the meeting minutes on 05 May 2016. AECOM and HyD were received. CCMJV will review the Distribution List. AECOM will send the advance copy to TD by email for advance information.	CCMJV / AECOM
2.	TTA for proposed TTA drawings	
2.1	TTA for Water Mains Construction on Eastern Footpath adjacent to Tung Lo Wan Fire Station (Drawing No.: CWBIECL_HFS/058-052)	
2.1.1	CCMJV presented the TTA scheme for water mains construction on eastern footpath adjacent to Tung Lo Wan Fire Station	Noted
2.1.2	TMLG Members had below comments: a) FSD's agreement on temporarily closure of access should be obtained prior to the meeting. Record of the agreement should be attached in the minutes and included in the notes of drawing.	CCMJV
2.1.3	TMLG Members had no objection to the proposed TTA subject to the above comment. The above comments would be addressed in the revised drawing.	Noted
2.2	TTA for Construction of Single Noise Semi-Enclosure at P17 to P22 (Drawing No.: CWBIECL/029-019 to 024)	
2.2.1	CCMJV presented the TTA scheme for the Construction of Single Noise Semi-Enclosure at P17 to P22	Noted
2.2.2	TMLG Members had below comments: a) Further review and more details to be provided b) TIA shall be prepared c) The signs inside noise enclosure should be shown inside the TTA drawings	CCMJV

3.	TTAs for Extension of Road Works Advice/ Renew Endorsement	
3.1	TTA for Water Mains Constructions on eastern footpath outside Block C of Seaview Estate at Watson Road (Drawing No.: CWBIECL_WR/033-024 to 027)	
3.1.1	CCMJV requested to renew the endorsement for proposed TTA drawings.	Noted
3.1.2	TMLG Members had below comments: a) In drawing no. 033-024 & 025, Seaview Estate Management Office's agreement should be obtained prior to the meeting and the record should be attached in the minutes and included in the notes of drawings. b) In drawing no. 033-026 & 027, Toyota Service Centre's agreement should be obtained prior to the meeting and the record should be attached in the minutes and included in the notes of drawings.	CCMJV
3.1.3	TMLG Members had no objection to the proposed TTA subject to the above comments. The above comments would be addressed in the revised drawing.	Noted
3.2	TTA for of Water Mains Construction on Eastern Footpath Adjacent to Tung Lo Wan Fire Station (Drawing No.: CWBIECL_HFS/058-028,029,041 & 042)	
3.2.1	CCMJV requested to renew the endorsement for proposed TTA drawings.	Noted
3.2.2	TMLG Members had below comments: a) In drawing no. 058-42, FSD's agreement on temporarily closure of access should be obtained prior to the meeting. Record of the agreement should be attached in the minutes and included in the notes of drawing.	CCMJV
3.2.3	TMLG Members had no objection to the proposed TTA subject to the above comment. The above comments would be addressed in the revised drawing.	Noted
3.3	TTA for Laying Cross Road Ducts across Hing Fat Street outside Gordon House (Drawing No.: CWBIEL/058-019,020,022,023)	
3.3.1	CCMJV requested to renew the endorsement for proposed TTA drawings. CCMJV added that as previously agreed with TMLG members, the TTAs scheme would not be implemented during special events held in Victoria Park.	Noted
3.3.2	TMLG Members had below comments: a) In drawing no.058-019, Map type signage should be provided in an advanced location to the TTA. b) In drawing no.058-019, road marking " Straight Ahead & Turn Left Arrow " should be provided on the southbound fast lane c) In drawing no. 058-019, TD reminded CCMJV to provide data of queue length due to the TTA for information.	CCMJV
3.3.3	TMLG Members had no objection to the proposed TTA subject to the above comments. The above comments would be addressed in the revised drawing.	Noted

4.	Any Other Business	
4.1	<p>Review of adding warning signs along the curved section of IECL E/B near Provident Centre.</p> <p>AECOM informed that there was traffic accident happened near curved section of IECL E/B near Provident Centre. AECOM commented that are there any works can be done for improvement, e.g. erect addition warning signs "SLOW".</p> <p>TMLG member commented that the "SLOW" signs were not effective. RMO suggest adding map type signs before curved section to provide advance notice.</p> <p>CCMJV will sketch the map type and send to all TMLG members for further comments</p>	<p>Noted</p> <p>Noted</p> <p>Noted</p>
4.2	TTA for Water Main Construction at Watson Road outside Victoria Centre (Drawing No.: CWBIECL_WR/033-028)	
4.2.1	CCMJV presented the TTA scheme for Water Main Construction at Watson Road	Noted
4.2.3	TMLG Members had no objection to the proposed TTA.	Noted
4.3	TTA for Repair Works of Exposure White Road Marking at IEC WB (Drawing No.: CWBIECL/020-052 to 054)	
4.3.1	CCMJV presented the TTA scheme for Repair Works of Exposure White Road Marking at IEC WB	Noted
4.3.2	TMLG Members had below comments:	CCMJV
	a) TD commented that the existing information signs should be removed or covered during implement this TTA	
4.3.3	TMLG Members had no objection to the proposed TTA subject to the above comment. The above comments would be addressed in the revised drawing.	Noted
4.4	Contingency Plan of 3 Lanes Extension	
4.4.1	CCMJV have passed the copy of Contingency Plan of 3 Lanes Extension to TMLG members for comment.	Noted
4.5	Co-ordination between Contract No. HY/2010/08 and HY/2009/19	
4.5.1	AECOM informed the TMLG members that the co-ordination between Contract No. HY/2010/08 and HY/2009/19 of the CWB was being done for the potential need of combined TTA schemes at IEC near Victoria Centre. It was anticipated that the combined TTA scheme would be ready in July 2016 for the review of the TMLG members.	AECOM
5	Next Meeting	
	TMLG meeting No. 49 as scheduled to be held in the Conference Room of CRE's office at 02:30 p.m. on 16 June 2016.	
	The meeting adjourned at 16:30p.m.	

PLT: BNY
 MODELING:
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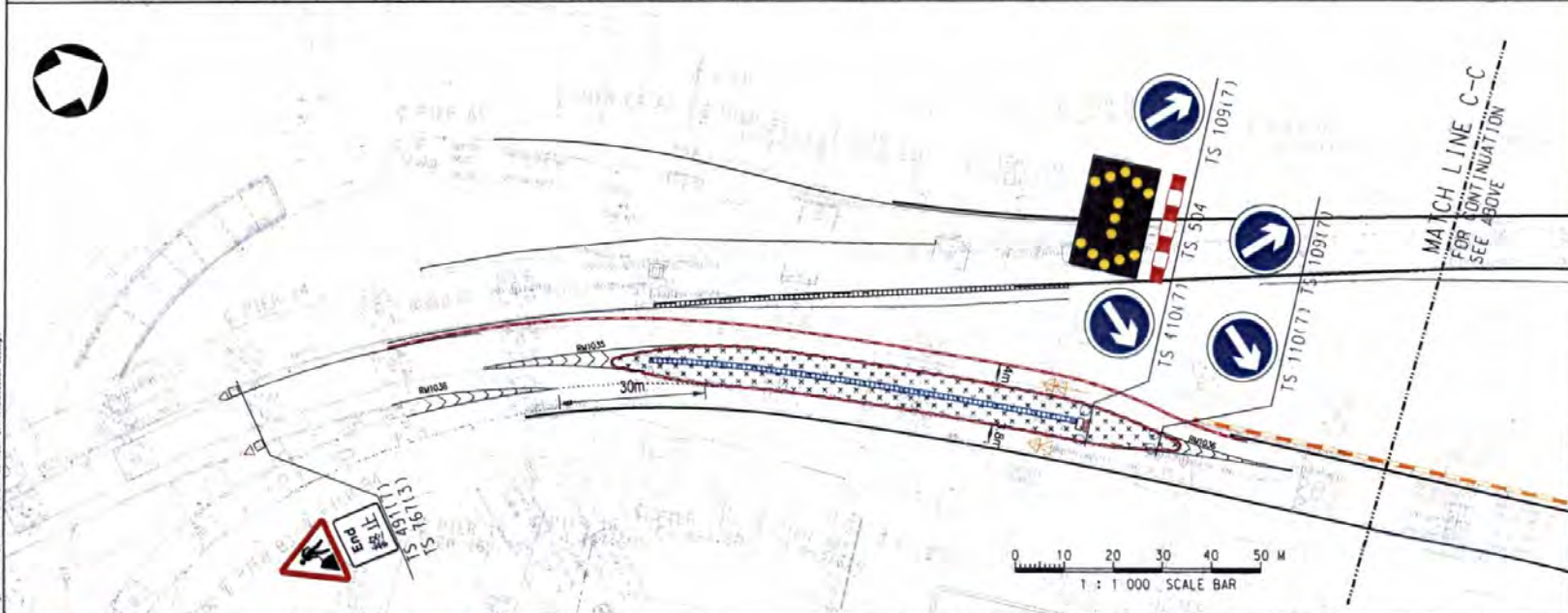
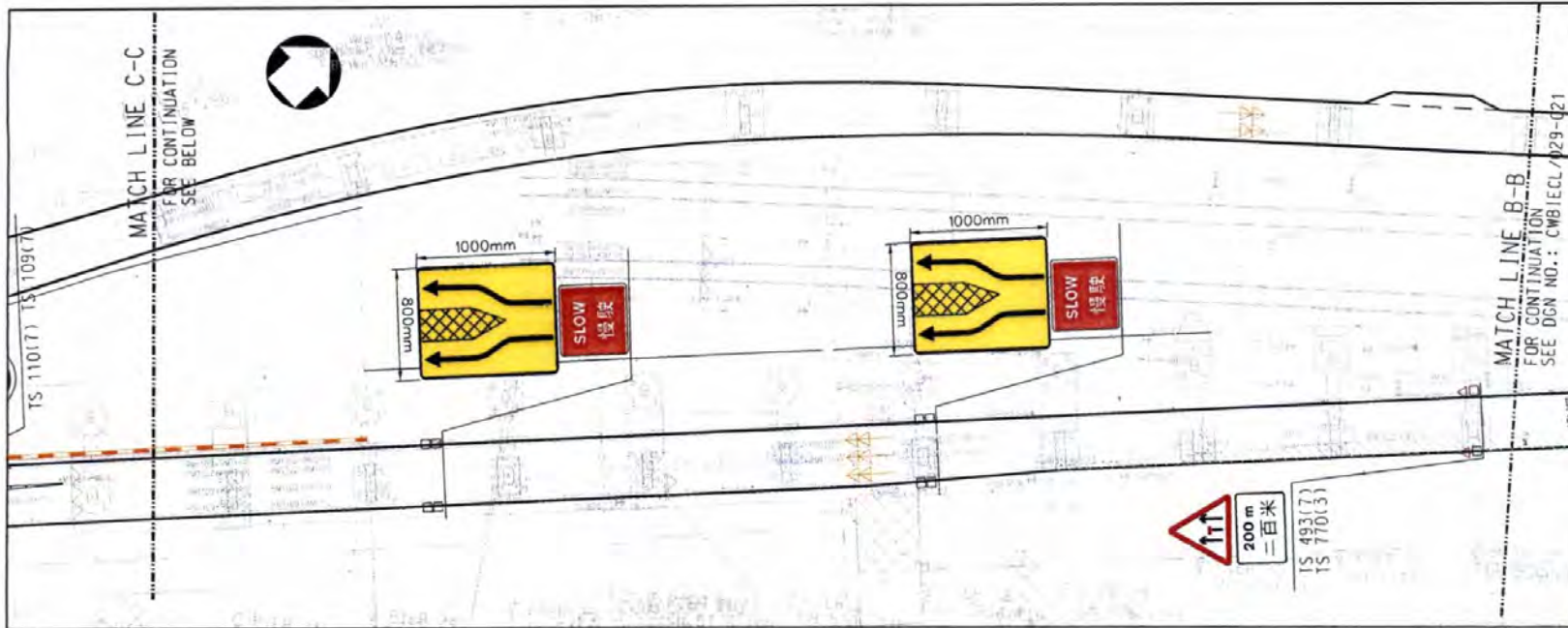


- NOTES:
1. ALL TEMPORARY LIGHTING, SIGNING, TRAFFIC CONES AND ROAD MARKINGS SHOULD BE CARRIED OUT IN ACCORDANCE WITH THE CODE OF PRACTICE FOR THE LIGHTING, SIGNING AND GUARDING OF ROAD WORKS BY HIGHWAY DEPARTMENT AND TRANSPORT PLANNING AND DESIGN MANUAL BY TRANSPORT DEPARTMENT.
 2. AMBER REVOLVING LANTERN SHOULD BE PROVIDED TO ALL WORKS ACCESS. FOR DETAILS PLEASE REFER THE CODE OF PRACTICE FOR THE LIGHTING SIGNING AND GUARDING OF ROAD WORKS.
 3. TWO ESCORT VEHICLES FOR ENTRANCE / EXIT IF NECESSARY

- LEGEND:
- WATER-FILL BARRIER
 - WORKS AREA
 - SITE ENTRANCE/EXIT
 - CONES WITH GUARDING
 - TEMPORARY RAILING
 - CENTRAL MEDIAN
 - CONCRETE BLOCKS

港政署 HIGHWAYS DEPARTMENT 主要工程管理處 MAJOR WORKS PROJECT MANAGEMENT OFFICE	德和-中國-中國-中國大橋局聯合 (CHINA-UK-CHINA-CHINA GREAT BRIDGE BUREAU JOINT VENTURE) MEINHARDT Meinhardt Infrastructure and Environment Limited 德和國際環境工程顧問有限公司	THE FIRST SUBMISSION Amendment	06MAY16 Date	Project CONTRACT NO. HY/2009/19 CENTRAL - WAN CHAI BYPASS TUNNEL (NORTH POINT SECTION) AND ISLAND EASTERN CORRIDOR LINK	Title TEMPORARY TRAFFIC ARRANGEMENT FOR CONSTRUCTION OF NOISE ENCLOSURE AFTER CWB COMMISSIONING AT IEC W/B BRIDGE (STAGE 2)	
		Drawn AT	Checked JC	Approved SL	Scale 1:1000	Date MAY 2016

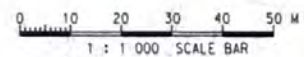
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 RELEASE



- NOTES:**
1. ALL TEMPORARY LIGHTING, SIGNING, TRAFFIC CONES AND ROAD MARKINGS SHOULD BE CARRIED OUT IN ACCORDANCE WITH THE CODE OF PRACTICE FOR THE LIGHTING, SIGNING AND GUARDING OF ROAD WORKS BY HIGHWAY DEPARTMENT AND TRANSPORT PLANNING AND DESIGN MANUAL BY TRANSPORT DEPARTMENT.
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 3. TWO ESCORT VEHICLES FOR ENTRANCE / EXIT IF NECESSARY

- LEGEND:**
- WATER-FILL BARRIER
 - ▨ WORKS AREA
 - ◇ SITE ENTRANCE/EXIT
 - CONES WITH GUARDING
 - X — TEMPORARY RAILING
 - ▬ CENTRAL MEDIAN
 - ▬ CONCRETE BLOCKS

TTA IMPLEMENTATION TIME: 24 HOURS	
TENTATIVE COMMENCEMENT DATE OCT 2016	DURATION OF WORKS 1 MONTH
PURPOSE:	PLAN ID:
PLAN REF:	



路政署
HIGHWAYS DEPARTMENT
 主要工程管理處
 MAJOR WORKS PROJECT MANAGEMENT OFFICE

AECOM

德和-中國-中鐵-中國大橋局聯營
 CHINA WEC - CEC - SINORAIL - CHINA BRIDGE GROUP

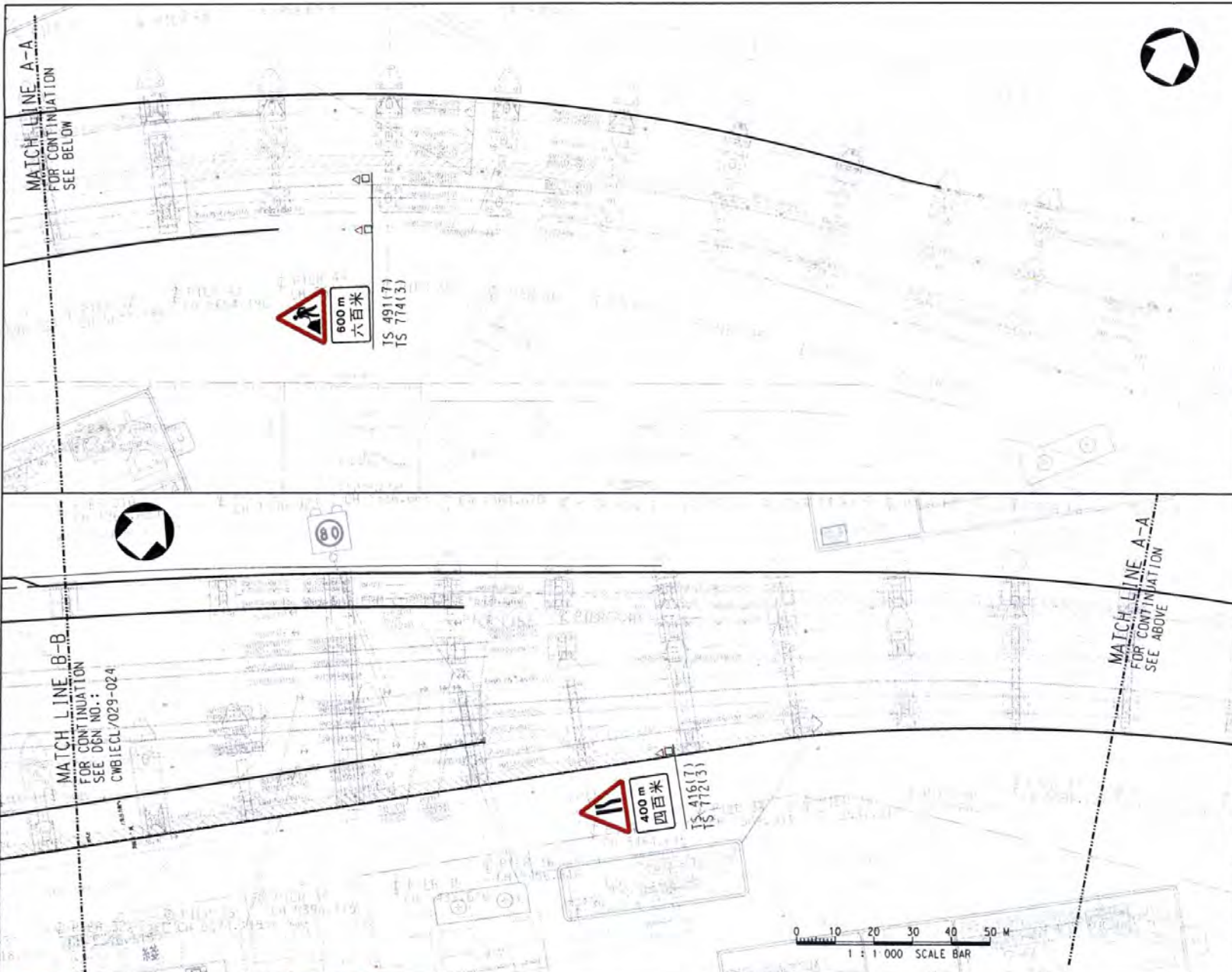
MEIN-HARDT
 Meinhardt Infrastructure and Transportation Limited
 德和-中國-中鐵-中國大橋局聯營

REV.	THE FIRST SUBMISSION	06MAY16
	Amendment	Date

Project			CONTRACT NO. HY/2009/19 CENTRAL - WAN CHAI BYPASS TUNNEL (NORTH POINT SECTION) AND ISLAND EASTERN CORRIDOR LINK		
Drawn	Checked	Approved	Scale	Date	Drawing No.
AT	JC	SL	1:1000	MAY 2016	CWBIECL/029-022

Title			TEMPORARY TRAFFIC ARRANGEMENT FOR CONSTRUCTION OF NOISE ENCLOSURE AFTER COMMISSIONING AT IEC W/B BRIDGE (STAGE 3)		
Scale	Date	Drawing No.	Rev.		
1:1000	MAY 2016	CWBIECL/029-022	-		

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NOTES:

1. ALL TEMPORARY LIGHTING, SIGNING, TRAFFIC CONES AND ROAD MARKINGS SHOULD BE CARRIED OUT IN ACCORDANCE WITH THE CODE OF PRACTICE FOR THE LIGHTING, SIGNING AND GUARDING OF ROAD WORKS BY HIGHWAY DEPARTMENT AND TRANSPORT PLANNING AND DESIGN MANUAL BY TRANSPORT DEPARTMENT.
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3. TWO ESCORT VEHICLES FOR ENTRANCE / EXIT IF NECESSARY

LEGEND:

- WATER-FILL BARRIER
- ▣ WORKS AREA
- ◇ SITE ENTRANCE/EXIT
- ⋯ CONES WITH GUARDING
- x—x—x— TEMPORARY RAILING

TTA IMPLEMENTATION TIME: 24 HOURS	
TENTATIVE COMMENCEMENT DATE OCT 2016	DURATION OF WORKS 2 MONTHS
PURPOSE:	PLAN ID:
PLAN REF:	

路政署 HIGHWAYS DEPARTMENT 主要工程管理處 MAJOR WORKS PROJECT MANAGEMENT OFFICE	德和·中國中策·中國大橋局聯營 CHUN WU · CHINA LINC · CCCC JOINT VENTURE MEINHARDT Meinhardt International and Environment Limited 邁達德國際環境工程顧問有限公司	Project	CONTRACT NO. HY/2009/19 CENTRAL - WAN CHAI BYPASS TUNNEL (NORTH POINT SECTION) AND ISLAND EASTERN CORRIDOR LINK			Title			TEMPORARY TRAFFIC ARRANGEMENT FOR CONSTRUCTION OF NOISE ENCLOSURE AFTER CWB COMMISSIONING AT IEC W/B BRIDGE (STAGE 4)		
		Drawn	Checked	Approved	Scale	Date	Drawing No.	Rev.			
REV.	THE FIRST SUBMISSION Amendment	06MAY16 Date	AT	JC	SL	1:1000	MAY 2016	CWBI ECL/029-023	-		

Appendix E

Complaint Log in 2016

Monthly Enquiry/ Complaint Summary

2016

E: 3 C: 3

Case No. ¹	Date received (DD/MM/YY YY)	Enquiry (E) / Complaint (C)	Date of Enquiry/ Complaint (DD/MM/YY YY)	Received Via ⁶	Name of Complainant/ Enquirer	Contact no. / Email	Location of Enquiry / Complaint	Description of Enquiry / Complaint (Date format - DD/MM)	Category (1 to 4) ⁴	OFFICE USE ONLY					Remarks ⁶
										Action Taken (Date format - DD/MM)	Handled by	Replied Date (DD/MM/YY YY)	Replied By	Status (Resolved / Pending)	
N/19/1606/01	01/06/2016	C	01/06/2016	ICC	Anonymous	N/A (Pls see remarks)	Island Eastern Corridor	The complainant blamed the design of Island Eastern Corridor (IEC) for causing several traffic accidents and serious traffic congestion. He / She complained about the structure of the road side barriers on IEC and asked for investigation.	4	01/06 - Jackei Yin (E11/CWB/HyD) asked RSS to follow up and draft a reply in Chinese. 02/06 - Remmy Chu (RE) sent a draft reply to Jackei Yin (E11/CWB/HyD) explaining that the concerned road side barriers were only temporarily used for the temporary traffic arrangement (TTA) on IEC and would be replaced by a permanent one after the completion of works. Jackei Yin (E11/CWB/HyD) preferred to wait for the follow-up action to be reported by K H Cheng (SRE) and an interim reply first. 03/06 - Remmy Chu (RE) sent an interim reply to Jackei Yin (E11/CWB/HyD). 06/06 - Jackei Yin (E11/CWB/HyD) asked K H Cheng (SRE) and Remmy Chu (RE) to mention more points in the draft final reply, including: 1) road section had been inspected and was up to standard; 2) in view of recent traffic accidents (which were due to speeding), some enhance works would be carried out; and 3) enhancement measures had been reviewed and agreed with relevant departments including Police, TD and HyD. Remmy Chu (RE) submitted a revised final reply according to Jackei Yin (E11/CWB/HyD)'s advices. 07/06 - ICC informed RSS that final reply had been made to ICC by Jackei Yin (E11/CWB/HyD). The reply explained that the road section had been inspected and was up to standard. Enhancement measures which were approved by Hong Kong Police Force, Transport Department and Highway Department would be implemented if necessary. The case was considered closed.	Jackei Yin (E11/CWB/HyD), Remmy Chu (RE)	07/06/2016	Jackei Yin (E11/CWB/HyD)	R	ICC#2-2297699514 Related information: Case creation date: 1 June 2016 The complainant refused to provide contact information to department. 01/06 - The case was assigned to PTO(Traffic)/General and NT/ME/HSR(E4) at first and then reassigned to Jackei Yin (E11/CWB/HyD).
N/19/1606/30	24/06/2016	C	20/06/2016	ICC	Anonymous	ds130c@gmail.com	Island Eastern Corridor	The complainant found that the double consecutive right bends on Island Eastern Corridor (IEC) endangered the safety of motorists and led to multiple accidents. The second right bend was significantly sharper than the first one. He/ she requested the responsible department to examine the design of the concerned road section.	4	24/06 - Pauline Wong (E10/CWB/HyD) passed the case to Remmy Chu (RE) for follow-up actions. Remmy Chu (RE) asked RSS to provide related information. Mercer Sum (RE) reported to Remmy Chu (RE) that a meeting was held on 30 May 2016 among Highways Department (HyD), Road Management Office (RMO) of Hong Kong Police Force (HKPF), Transport Department (TD), Resident Site Supervision Staff (RSS), Contractor and his traffic consultant to review the design of IEC. Temporary traffic arrangement (TTA) was being implemented since 5 June 2016 to prevent similar accident. In the meantime, road marking and the alignment of the traffic would be reviewed and revised to enhance road safety. 27/06 - Remmy Chu (RE) sent a draft reply to Pauline Wong (E10/CWB/HyD) for consideration. 28/06 - Jackei Yin (E11/CWB/HyD) sent a reply to HKPF for comment. Jackei Yin (E11/CWB/HyD) asked RSS to provide the drawings of the "permanent TTA" for discussion with TD and HKPF at the TMLG meeting on 29 June 2016. 05/07 - Jackei Yin (E11/CWB/HyD) informed Remmy Chu (RE) that reply was made to ICC on 5 July 2016. The reply explained that the road condition of the concerned section of IEC had been assessed by HKPF, TD, HyD and their Consultant and Contractor. The	Pauline Wong (E10/CWB/HyD), Jackei Yin (E11/CWB/HyD), Remmy Chu (RE), Mercer Sum (RE)	05/07/2016	Jackei Yin (E11/CWB/HyD)	R	ICC#2-2372963639 Related information: Case creation date: 20 June 2016 The case was mis-assigned to E/E1/TD on 20 June 2016 and then mis-assigned to E/SR5/TD on 23 June 2016. The case was then assigned to Pauline Wong (E10/CWB/HyD) on 24 June 2016 and re-assigned to Jackei Yin (E11/CWB/HyD) on 26 June 2016.

Case No. ¹	Date received (DD/MM/YY)	Enquiry (E) / Complaint (C)	Date of Enquiry/ Complaint (DD/MM/YY)	Received Via ⁶	Name of Complainant/ Enquirer	Contact no. / Email	Location of Enquiry / Complaint	Description of Enquiry / Complaint (Date format - DD/MM)	Category (1 to 4) ⁴	Action Taken (Date format - DD/MM)	Handled by	Replied Date (DD/MM/YY)	Replied By	Status (Resolved / Pending)	Remarks ⁵
										concerned road section complied with the relevant road safety standards. To enhance road safety, TTA had been implemented since early June 2016 and additional traffic measures would be implemented if necessary. In the meantime, the concerned area would be monitored. The case was considered closed.					
N/19/1608/10	18/08/2016	C	13/08/2016	ICC	Anonymous	N/A (Pls see remarks)	Island Eastern Corridor	The complainant considered the temporary traffic arrangement (TTA) implemented on the section of Island Eastern Corridor (IEC) between City Garden and Causeway Bay was not appropriate. He / she worried that the TTA would cause car accident at night as the drivers needed to pass through the concerned TTA with S-shaped driving route.	4	16/08 - ICC informed HyD and RSS that a reply was made by Jackei Yin (E11/CWB/HyD) by phone on 16 August 2016 at around 7:00pm. Jackei Yin (E11/CWB/HyD) replied that the S-curves on IEC were temporary arrangements and were necessary for the project works. Additional signs and road markings were added to improve safety. However, the new westbound bridge would be opened soon for better driving experience. The permanent new road would have smoother and straighter alignment. Besides, additional enquiry about the bypass project was also explained. 17/08 - Remmy Chu (RE) asked Jackei Yin (E11/CWB/HyD) for case details. 18/08 - Jackei Yin (E11/CWB/HyD) forwarded the case details with the substantive reply to Remmy Chu (RE) for record. The case was considered closed.	Jackei Yin (E11/CWB/HyD)	16/08/2016	Jackei Yin (E11/CWB/HyD)	R	ICC#2-2605797294 Contact information of the complainant was not disclosed by HyD. Related information: Case creation date: 13 August 2016
N/19/1610/15	15/10/2016	E	15/10/2016	Hotline	Anonymous	6530 1303	Island Eastern Corridor	The enquirer asked whether any road diversion or road closure would be implemented on the North Point section of the Island Eastern Corridor (IEC) on 16 October 2016.	2	15/10 - Charlie Hui (Tel. Op.) replied that no road diversion or road closure would be implemented on the aforesaid road section on 16 October 2016. A temporary traffic arrangement (TTA) would be implemented on a section of the IEC westbound starting from 23 October 2016. Motorists on the existing IEC westbound heading to Causeway Bay and Central would be diverted to the new IEC westbound bridge. 22/10 - Charlie Hui (Tel. Op.) called the enquirer again and informed that the implementation date of the aforesaid TTA would be re-scheduled to 30 October 2016. The enquirer was satisfied and raised no further questions.	Charlie Hui (Tel. Op.)	23/10/2016	Charlie Hui (Tel. Op.)	R	The enquirer did not disclose her name.
N/CWB/1610/25	24/10/2016	E	24/10/2016	NPCLC (walk-in)	Anonymous	N/A (Pls see remarks)	N/A	Two enquirers asked: 1) about the form of the bypass. 2) where the tunnel portals would be built. 3) about the completion date of the bypass. 4) about works being carried out at the Island Eastern Corridor (IEC) in North Point and the traffic arrangement. 5) about the development of waterfront promenade in North Point and its ancillary transport facilities. 6) whether the motorists could leave the bypass via the slip road located at Tsing Fung Street.	2	24/10 - Candace Hsu (PRO) replied: 1) Most sections of the bypass would be an underground tunnel. 2) The portals in Central and North Point would be near IFC II and Harbour Grand Hong Kong respectively. 3) Relevant departments were reviewing the commissioning date. 4) Currently the reconstruction of the IEC westbound bridge and the installation of noise semi-enclosure were being carried out. The new IEC westbound bridge would be open to the public in end October 2016. 5) The green area along the seafront shown in the display model would be a waterfront promenade. Its portals would be located in Oil Street and Watson Road respectively but it was not under the bypass project's purview and the enquirer was advised to approach PlanD for details. 6) No. The enquirers were satisfied and raised no further questions.	Candace Hsu (PRO)	24/10/2016	Candace Hsu (PRO)	R	The enquirers were walk-in visitors of NPCLC whose contact information was not given.



俊和-中國中鐵-中鐵大橋局聯營
CHUN WO - CRGL - MBEC JOINT VENTURE

CONSTRUCTION NOISE MANAGEMENT PLAN

FOR

Contract No.: HY/2009/19

Central – Wan Chai Bypass
Tunnel (North Point Section)
and
Island Eastern Corridor Link

Appendix I

**Updated Noise Assessment of Cumulative Impact due to
Construction Work with Temporary Noise Mitigation
Measures at Pier 17 to Pier 22**

Reference No. 1 - Comparing EIA Appendix 4.13:

Powered Mechanical Equipment (PME) for Different Construction Tasks during Normal Daytime Working Hours (With Mitigation Measures)

NSR: N17 Harbour Heights

Section 6.0 Construction of IECL

6.2 IEC Connection Work

6.2D Noise Enclosure / Noise Barrier Installation

Powered Mechanical Equipment (PME)	TM Ref. Identification Code	SWL (dB(A))	Quantity	On-time %	*Reduction	Total SWL (dB(A))
Lorry with crane, 5.5 tonne < gross vehicle weight <= 38 tonne	-	105	1	100%	5	100.0
Cherry picker (electric)	-	88	2	100%	5	86.0
Winch (electric)	CNP 262	95	1	100%	0	95.0
Drill, hand-held (battery operated)	CNP 071	89	4	100%	0	95.0
Grinder (electric)	CNP 066	98	2	100%	0	101.0
						104.7

1E+10
398107171
162277660
162277660
2589E+10

*Remark: Negative 5 dB(A) correction for the effect of vertical noise barrier with PMMA panels as temporary noise mitigation is applied to the Predicted Noise Level.

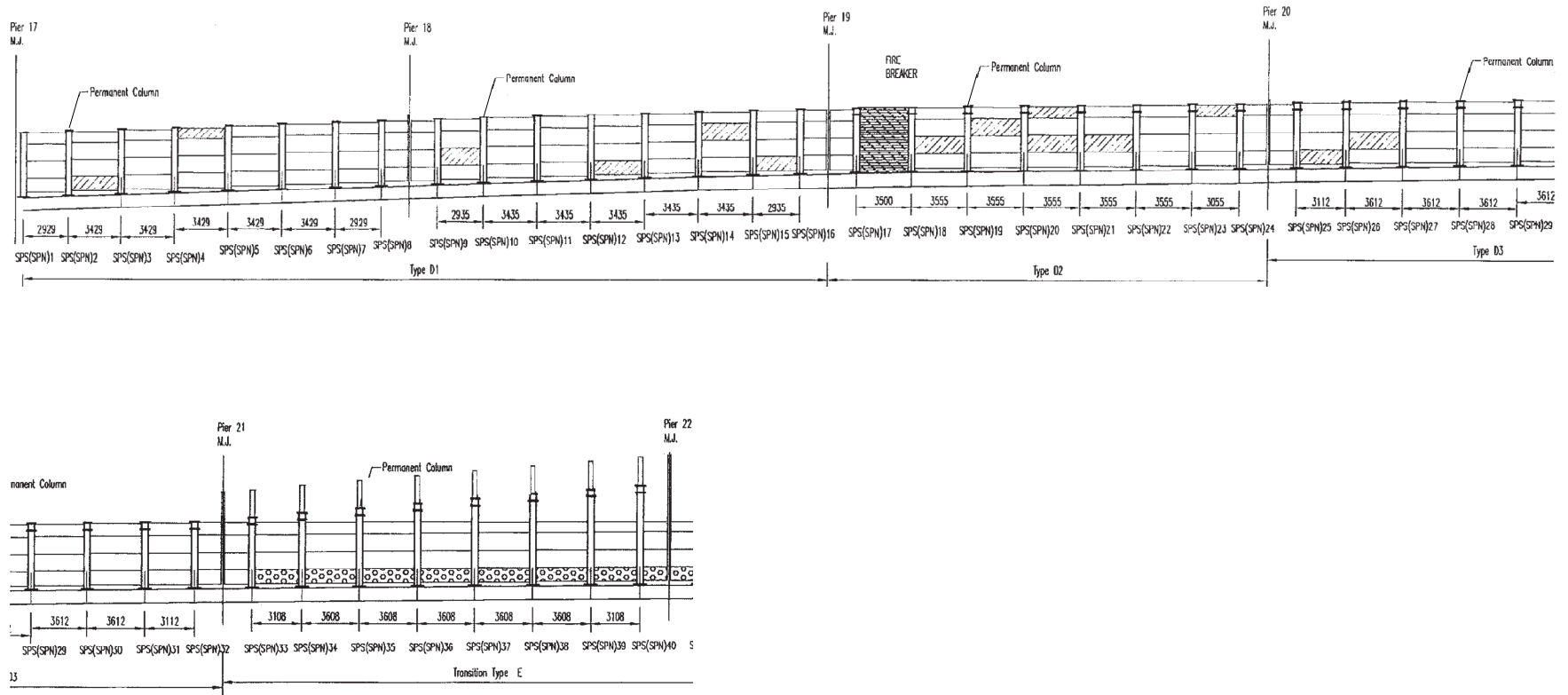


Figure a - Elevation for 3.5m High Noise Barrier Between Piers 17 and 22 as Temporary Noise Mitigation

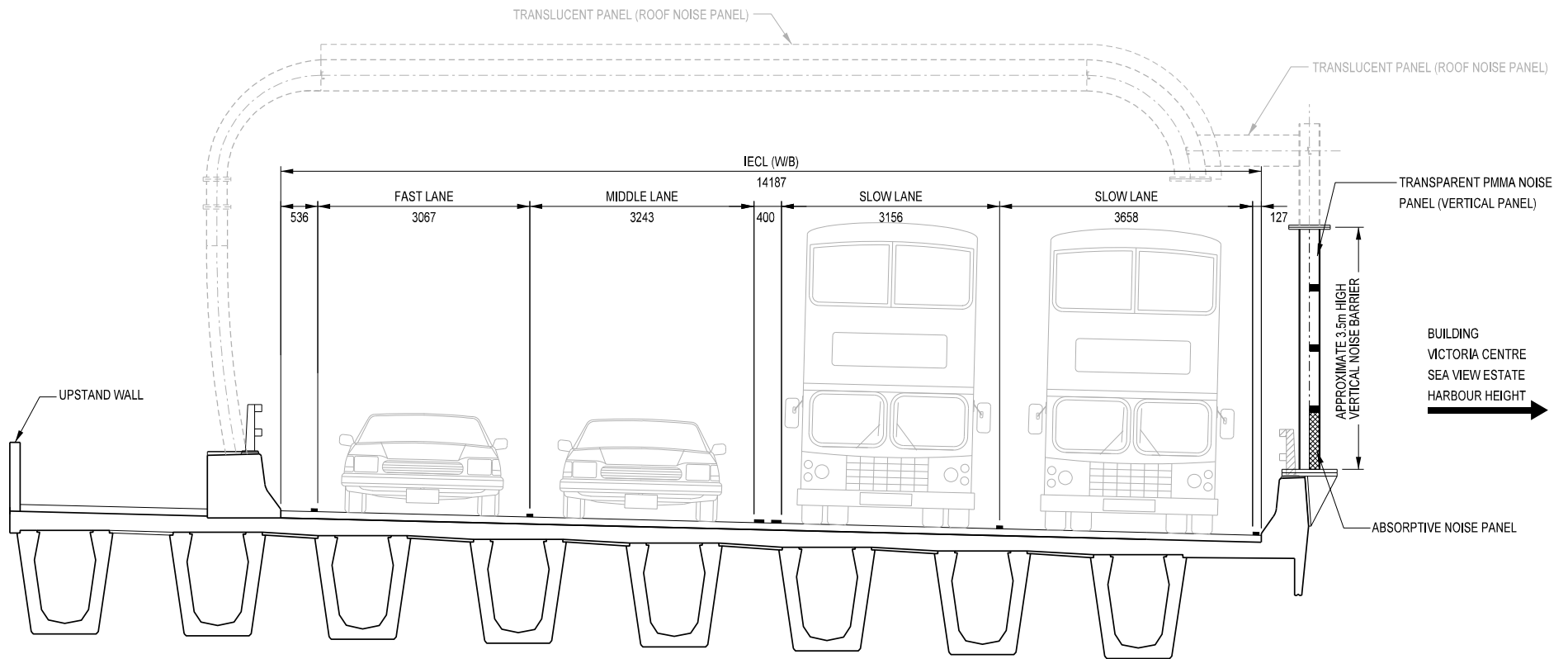


Figure b - Section for 3.5m High Noise Barrier Between Piers 17 and 22 as Temporary Noise Mitigation

-	07/05/19	FOR INFORMATION.	KSL	KYL	
Rev.	Date	Description	Drawn	Prepared	Checked
AECOM					
CENTRAL - WAN CHAI BYPASS AND IEC LINK					
CONTRACT NO. HY2009/19					
CENTRAL - WAN CHAI BYPASS - TUNNEL					
(NORTH POINT SECTION) AND ISLAND EASTERN CORRIDOR LINK					
TITLE					
EXISTING STAGE OF SEMI-NOISE ENCLOSURE NEAR VICTORIA CENTRE, SEA VIEW ESTATE AND HARBOUR HEIGHT					
SKETCH NO.	60095653/IEC/DF1473		SCALE	1:300 (A1)	
				1:600 (A2)	