

CSF Reference Number:	CSHK	CET	CSF	C	2024	000229
ACC Reference Number:	1701	W	000	CSC	143	000834

## EDOC for Installation of Monitoring Instrumentation (I&M) & Pre-drilling Works

### Description:

Refer to the approved EDOC for Instrumentation and Monitoring Instrumentation (I&M), there is major amendment on the above EDOC and we submit herewith the revised EDOC with the changing sheet as attached.

Revision	Date	Prepared by	Checked by	Reviewed by		Approved by
A	02/07/2024					
	<b>Name:</b>	David Lam	Vincent Li	Max Leung	Paul Freeman/ McGleenon	Eric Fong
	<b>Position:</b>	Senior Engineer	Construction Manager	Engineering Manager	Sr. Project Director/ A. Project Director	Project Director

## Revision Box

[illegible]

## Engineering Document for Works

### **Part A**

**Engineering Works No:** ZCV20240

Change History	Issue/Rev.	Reason for Change	Date
	1/0	First Formal Issue	05/04/2024
	<b>1/1</b>	<b>Minor Amendment</b>	<b>04/07/2024</b>

### **Part B**

1. **F1 No.** N/A
2. **C&R Works No.** N/A
3. **Baseline Programme<sup>i</sup>** Please refer to attached Appendix A

Design	Installation	Testing & Commissioning	Completion	Associated Actions (Refer to Item 19)
SHD Property Development Contract 1701 – Oyster Bay Station and Associated Works	MAY 2024	N/A	SEP 2024 (tentatively)	N/A

#### **4. Description of works**

- 4.1 Title **Contract 1701 – Installation of Monitoring Instrumentation (I&M) & Pre-drilling Works**
- 4.2 Reason Prior to the commencement of the bifurcation work at mainline and OYB station associated works, installation of instrument and monitoring & **pre-drilling works** shall be carried out to the work areas before the commencement of piling and associated works.
- 4.3 Description **A. GENERAL**  
  
1701 Contractor will carry out the Instrumentation Monitoring Installation Works as per correlated latest version of method statement under **ACC Ref No. 1701-W-000-CSC-760-000122** & the **Pre-drilling Works within 10m from nearest track under ACC Ref No. 1701-W-000-CSC-760-000193**. Precaution measures for various potential risks/ situation have been reviewed and summarized in the hazard log referring to **Appendix B**.

<sup>i</sup> For any programme change or update, please refer to the Project Controller / Project Manager

## B. WORKING TIME

Mainline: 3 Nos of NTH per week (2:00am to 5:00am);

Test Track: 3 night time (Friday^Saturday, Saturday^Sunday and one on weekday) per week or NPH subject to Depot Schedule;

Depot track: NTH (2:00am to 5:00am)/ NPH (11:00am to 3:00pm) daily;

Tentative Programme: May 2024 – September 2024

## C. PREPARATION WORK

Before commencement of the installation, the following works shall be completed.

### Setting Out

- i. The location of each monitoring point will be set out at the coordinates shown on the Construction Drawings or as agreed with MTR's representatives on site. Once the location has been set out a joint inspection will be held with MTR's representatives on site and other stakeholders such as Utility Company or the land owner's/ occupier's representatives to agree the location prior to further execution.
- ii. At locations where the proposed monitoring point is unlikely to or dangerous to access for either installation or later monitoring works, relocation shall be considered. Alternatively, safe access to the location will be constructed. If the proposed locations are on live roads, an approved TTM / TTA scheme shall be implemented prior to any installation or monitoring works.

Referring to the railway safety requirements and construction drawings, if the proposed monitoring point is close to the OHL mast/track, CSHK will further verify the site conditions with MTR/ Depot Yard Master (DYM) representatives onsite to ensure that the proposed location meets the minimum safety distance and take relative precautions, such as de-energize, isolation, relocation

### Cable Detection / Diversion

- i. UU detection will be carried out before start of the works. For details, please refer to separate submission **ACC no. 1701-W-000-CSC-760-000095**.
- ii. Where required, Trial Pits will be carried out in accordance with Permit-to-Dig System before start of the works. For details, please refer to separate submissions **ACC no. 170-W-000-CSC-760-000115**.

### Protection Works for Monitoring Point Installation

- i. Some works area will be fenced off by waterfilled barriers (without panel), and the waterfilled barriers (without panel) will be left

inside the OAs during I&M construction periods. For details, please refer to **Appendix C**

- ii. For works/installation on trackside, the work party shall be protected as required under **RSR F4 (mainline)** or **F5.2.3 (depot)**

## **D. INSTALLATION PROCEDURE**

The following are the installation sequence and method for different type of I&M installation:

### **D.1 Ground Settlement Marker & Utility Settlement Marker**

- i. Place the settlement marker (A 12mm dia. mild steel rod with 250mm SQ. x 4mm THK steel plate for Ground Settlement Marker; 40mm SQ. x 8mm THK MS plate for Utility Settlement Marker) into hand excavated 300mm SQ. x 800mm(H) hole. Steel rod is inserted into a Dia. 25mm PVC sleeve and leaving the rod protruding approximately 100mm above the PVC sleeve top.
- ii. Backfill the excavated pit with compacted granular backfill with 75mm pre-casted thick concrete box constructed above the backfill. The PVC as well as the steel rod will be left protruding 100mm from the bottom of the concrete box. A 300mm SQ. cast iron hinged stopcock cover will be set on top the concrete box as specified on the Contract Drawings.
- iii. If the installation works cannot be completed in one day, the excavated pit will be temporarily backfilled with sand bags, waterfilled barrier (without panel)/ fencing for physical separation and additional warning lights where necessary.

(Ground Settlement Marker Installation Details, please refer to **11.1 of the Appendix G – Method Statement**)

(Utility Settlement Marker Installation Details, please refer to **11.2 of the Appendix G – Method Statement**)

### **D.2 Settlement Monitoring at Railway Structure**

- i. Optical prisms are fixed onto the track sleeper by epoxy cement in accordance with the required locations.

(Details, please refer to **11.3 of the Appendix G – Method Statement**)

### **D.3 Building Settlement Point**

- i. A triangular mark will be painted/ reflective surveying target will be used on the existing structure with height 1.5m above existing ground level.

(Details, please refer to **11.4 of the Appendix G – Method Statement**)

### **D.4 Vibration Monitoring Point**

- i. The vibration monitoring device will be put on the firm ground or pavement during monitoring. For the exact locations, they shall be agreed with MTR/ DYM representatives.

- ii. For the vibration monitoring points within track area, the sensors will be placed on the desired locations with an extended connection cable from the device and reaching to the nearby non-track zone then surveyor can access for monitoring.

(Details, please refer to **11.5 of the Appendix G – Method Statement**)

#### D.5 Tilting Marker

- i. The vertical surface at the installation locations shall be prepared such that any dirt, grease and loose or flaking material shall be removed and cleaned.
- ii. The reflective surveying target would be adopted.

(Details, please refer to **11.6 of the Appendix G – Method Statement**)

#### D.6 Standpipe and Piezometer

The standpipe and piezometer construction details, please refer to **ACC Ref. No. 1701-W-000-CSC-760-000122 / Appendix G– Method Statement.**

#### D.7 Inclinator (IN)

- i. Site setup shall follow the same as the D.7 Standpipe and Piezometer installation.

(Details, please refer to **11.7 of the Appendix G – Method Statement**)

#### D.8 Crack Gauge

- i. A crack gauge will be installed on required locations, the crack gauge will be bonded on the crack of the structures/ buildings by screws or epoxy.

(Details, please refer to **ACC Ref. No. 1701-W-000-CSC-760-000122**)

#### D.9 Pre-drilling

The drilling rig will be adopted in carrying out the pre-drilling works, the site setup and method similar to the I&M installation.

(Details, please refer to **ACC Ref. No. 1701-W-000-CSC-760-000193**)

### E. MONITORING

#### E.1 Initial Reading

The initial readings of the monitoring locations shall be taken as the consistence readings obtained from one independent level. Initial readings will be undertaken jointly with Engineer and MTR RP or his representatives on site and submitted to the AP/ RGE and the relevant Government Departments, where required.

## E.2 Monitoring

Monitoring shall be carried according to the frequency listed below (extracted from BD approved drawings):

- Active monitoring: Daily
- Standard monitoring: Weekly
- Background Monitoring: Bi-weekly

## E.3 Removal of the monitoring points

The monitoring points will be removed when the monitoring period was completed.

- 4.4 Application I&M Installation Works at Depot Track and Test Track will be carried out during NPH 11:00 – 15:00. I&M Installation Works at Mainline will be carried out during NTH 02:00 – 05:00. After the area turned to Construction Area (CA) and the Ground Settlement Marker (GS), Utility Settlement Marker (UT), Standpipe and Piezometer (SP) and Inclinometer (IN) installing works will be carried out at daytime TH/NPH.
- 4.5 Category N/A
- 4.6 In-house/Contract CONTRACT 1701
- 4.7 Estimated Cost Under SHD Property Development Contract 1701 – Oyster Bay Station and Associated Works
- 4.8 Nature Trial project carried out by HKTS Business Unit and costing \$4.5M or above ☐ Yes ☒ No
- If yes, please attach the SMART Success Criteria for Trial  
[Template can be obtained via the link below  
[http://opinforall.corp.mtrc.com/dept T&ES/tes\\_admin/other%20files/smart%20success%20criteria%20for%20trials.docx](http://opinforall.corp.mtrc.com/dept T&ES/tes_admin/other%20files/smart%20success%20criteria%20for%20trials.docx)]

## 5. Name and Title of Responsible Parties

Design Manager / Chief Construction Manager	Project Controller / Project Manager	Implementer / Senior Construction Manager	Maintainer / Asset Owner
CHONG Daniel Hing Pong Chief Design Manager – OYB	KOO Raymond Kai On Chief Construction Manager – OYB Civil	KOO Raymond Kai On Chief Construction Manager – OYB Civil	KOO Raymond Kai On Chief Construction Manager – OYB Civil (for newly installed monitoring equipment)

## 6. Implication on Safety

- Affecting / modifying on Safety Critical System(s)<sup>ii</sup> ☐ Yes ☒ No
- If no, please provide justification:-  
There are no Safety Critical Systems involved.

<sup>ii</sup> The list of Safety Critical Systems (SCS) stipulated in Exhibits E1 of P/OD/SMS/004 refers.

- |  |                          |            |                                     |           |
|--|--------------------------|------------|-------------------------------------|-----------|
| <ul style="list-style-type: none"> <li>Confirming ISA Requirement for SCS Related Change Assessment Form<sup>iii</sup> is completed (ref. <a href="#">P/OD/SMS/004</a>)<br/> If no, please provide justification.<br/> There are no Safety Critical Systems involved.</li> </ul>                 | <input type="checkbox"/> | <b>Yes</b> | <input checked="" type="checkbox"/> | <b>No</b> |
| <ul style="list-style-type: none"> <li>Modifying on PSD/APG/MGF/Floodgate<sup>iv</sup> [Specific Safety Related System(s)]</li> </ul>  | <input type="checkbox"/> | <b>Yes</b> | <input checked="" type="checkbox"/> | <b>No</b> |
| <ul style="list-style-type: none"> <li>Confirming ISR Requirement for Safety Related System Related Change Assessment Form<sup>v</sup> is completed (ref. <a href="#">P/OD/SMS/004</a>)<br/> If no, please provide justification.<br/> There are no Safety Critical Systems involved.</li> </ul> | <input type="checkbox"/> | <b>Yes</b> | <input checked="" type="checkbox"/> | <b>No</b> |
| <ul style="list-style-type: none"> <li>Mitigation of R1 / R2 Hazards</li> </ul>  | <input type="checkbox"/> | <b>Yes</b> | <input checked="" type="checkbox"/> | <b>No</b> |
| <ul style="list-style-type: none"> <li>Affecting Signal Sighting (ref. <a href="#">P/OD/SMS/028</a>)<br/> If yes, please specify</li> </ul>  | <input type="checkbox"/> | <b>Yes</b> | <input checked="" type="checkbox"/> | <b>No</b> |
| <ul style="list-style-type: none"> <li>Affecting maintenance or operational requirements e.g. Safety-related Application Conditions (SRAC) / Safe Operating Requirements (SOR)<br/> If yes, please specify in Section 19.</li> </ul>   | <input type="checkbox"/> | <b>Yes</b> | <input checked="" type="checkbox"/> | <b>No</b> |
| <ul style="list-style-type: none"> <li>Submission of a paper to SAFTEC<sup>vi</sup><br/> If yes, please specify the paper number and if the paper has been accepted by SAFTEC</li> </ul>   | <input type="checkbox"/> | <b>Yes</b> | <input checked="" type="checkbox"/> | <b>No</b> |

<sup>iii</sup> For modification work on SCS or affects SCS, project controller of C&R work shall complete the assessment form.

<sup>iv</sup> The list of Safety Related Systems (SRS) stipulated in Exhibits E1 of P/OD/SMS/004 refers. Independent safety review on operation and control, as well as signalling interface, shall be deployed for i) PSD and APG (automatic sliding door), ii) Floodgate and iii) MGF.

<sup>v</sup> For modification work on PSD/APG/MGF/Floodgate [Specific Safety Related System], Project Controller of C&R work shall complete the assessment form. E4 of P/OD/SMS/004 refers.

<sup>vi</sup> Refer to [SAFTEC ToR](#) in Operations Knowledge Mall, submission of a paper to SAFTEC is required for engineering work involving:-

- application of new technology;
- modifications to approved technical standards on operational / occupational / system safety (including deviations from approved technical standards);
- improvement on safety of the railway and other prescribed businesses in Hong Kong by mitigating R1 / R2 hazards; or
- modification which may induce high consequence risk including derailment or train collision which affecting rail integrity / switch and crossing integrity / track adhesion performance



1. CP(T) or CP (NT) shall be full time looking after the railway safety and report to the OCC/ SC daily before and after the construction works. Full-time supervision shall be carried out by MTR Project Team under the approved MS during the construction work. Trucks and workers shall be restricted to use a designated route as delivery and worker's pedestrian route within the site which shall be further agreed with the SHD Manager / YM.
2. Proper safety barriers shall be erected to demarcate the work site from the railway area.
3. Proper personal protective equipment shall be employed while carrying out of works.
4. The 1701 Contractor shall carry out temporary pedestrian / traffic diversion and implement TTM wherever the works will interfere with existing roads, footways or other ways over which there is a public or private right of way. Minimum width of EVA will be maintained at all times during the works.
5. Delivery of equipment shall be considered carefully and avoid damaging any structure on site such as depot warehouse, OHL, track work, light post, etc.
6. No storage of additional fuel for the rigs/plants is allowed.
7. Measures including sandbags and standby water pump shall be provided to avoid flooding.
8. Designated works area shall be fenced off by proper safety barriers with warning notices and shall be securely fastened together to prevent unauthorized entry. The detailed safety measures shall be specified in the method statement for the cable bridge construction works.
9. All workers shall receive Railway Safety Induction training and follow Railway Safety Rules (RSR).
10. The contractor's person-in-charge (CPIC) shall be present at the work site at all times of work. The responsible person shall ensure that all sources of ignition are removed, all power supplies are isolated, and the work site is in a safe condition before leaving the site.

**7. Implication on Fire Safety**

- |  |                              |  |
|--|------------------------------|--|
| • Affecting / modifying on Fire Safety System(s) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|--|------------------------------|--|
1. Smoking is not permitted on site.
  2. Storage of flammable and dangerous materials are prohibited.
  3. Cleaning of garbage shall be carried out regularly to maintain good housekeeping.
  4. Fire extinguisher shall be provided at site container offices and each work front with mechanical plants/fire risk as identified in risk assessment (part 5 below).
  5. Risk assessment shall be carried out to identify safety and fire hazard as well as the relevant control measures.
  6. Grass cutting shall be arranged before any hot works

- Implication to existing Fire Service Installations (FSIs)

☐ Yes ☒ No

Example to implication:

- Obstructions to the existing active FSIs<sup>vii</sup>, including but not limited to sprinklers, detectors, hose reels, smoke curtain, natural smoke vent, some extraction outlet etc.

If yes, please provide the justification to demonstrate the compliance of statutory requirement.

## 8. Deployment of Licensed Staff on Safety Critical / Safety Related Work

This is not a safety critical / safety related works, but the following measures will be implemented to ensure safety.

1. Contractor shall work in compliance with the Corporation's railway safety rules and procedures.
2. CP(T) or CP(NT) shall be deployed on site responsible for arranging protection and supervision of working parties for works carried out inside operating railway premises.
3. The 1701 Project Team CIOW and Safety teams will also put full teams on work supervision and site safety during the construction.

## 9. Implication on Operating Procedures

No implication on operating procedures

## 10. Statutory Submissions

Are there any statutory submissions

☒ Yes

☐ No

If yes, please state the details:

The works in this EDOC are covered under the Building Ordinance. Arup is appointed as TCP AP and TCP RSE. Statutory submissions with the Buildings Department are handled by Arup under management by OYB DM team. Representatives(s) for TCP AP and TCP RSE will be on-site fulltime for the works in this EDOC. Approved BD drawings attached in **Appendix E**.

[State any submission/approval dates and consequences of non-approval by external statutory parties]

<sup>vii</sup> Refer to M&W Standards for the definition of obstruction.

1. S/EM-fss/MW/04(99) - Material & Workmanship Standard for Sprinkler System - Clause 10.10 & 10.17.
2. S/EM-fss/MW/03(99) - Material & Workmanship Standard for Fire Hydrant / Hose Reel System - Clause 7.1, 10.1, 11.13 & 11.14.
3. S/EM-fss/MW/02(99) - Material & Workmanship Standard for Automatic Fire Alarm and Detection System - Clause 4.1.10 to 4.1.13.

## **11. Design Capacity / Design Limit<sup>viii</sup>**

All permanent design works are designed to MTR NWDSM, M&W specification and GS, the related code of practice and HK regulations.

The temporary works for shoring support or working platform would be certified by nominated Temporary Works Co-ordinator (TWC), checked by TCPs and approved by MTR CWBU.

## **12. Electromagnetic Compatibility**

No impact on the electromagnetic compatibility.

## **13. Implementation, Inspection, Testing or Commissioning Instruction**

- Prior to the commencement of works, the Contractor shall provide submission including detailed method statements with Inspection & Testing Plan (ITP) to MTR for approval.
- Before submission of EDOC, the method statement and ITP has been approved.
- The proposed work shall be inspected and checked by MTR CSHK team under related ITP procedure, and will be registered by digital RISC forms under iSuper system for quality control.
- All construction works shall be carried out according to the approved method statements and agreed safety plans and measures.

- 13.1 State the pre-requisite tests / safety precautions before allowing an item/system to be put in operation/testing on the Operating Railway, e.g. gauge checking, approach-locking distance, signal sighting etc., for:
- works on a Safety Critical System, or
  - works on other items/system which may result in disruption to train services for more than 20 minutes or to station operation for more than 1 hour, if the change causes the item / system / its interfacing system(s) to fail to perform its intended function.]

- 13.2 Safety independent check [~~is~~/is not \*] required for the installation, T&C in this modification.  
[If not required, please provide justification.

Safety independent check is required for the modifications to safety critical systems / equipment / items as defined in the divisional procedure P/OD/SMS/004.]

There are no T&C modification works.

- 13.3 On-Site Design Verification [~~is~~/is not \*] required after Testing and Commissioning for the installation of this modification,

[Provide justification particularly when no or sample check on On-Site Design Verification is required by P/OD/AMS/015.]

NO on-site design verification is required, as no major modification on existing equipment and/or safety critical systems is envisaged for these proposed monitoring points. Aside from on-site verification and confirmation of the monitoring locations (as-built records to be submitted), it is not expected that other design specific requirements checking/verification will be required

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<sup>viii</sup> Refer to [P/OD/AMS/015](#) for the definition, use and updating of design limits.

**14. Design Standards / Manuals / Procedures / References**

- Works to be designed and constructed to comply with the latest requirement of: -
- Contract 1701 Scope of Work
- MTR New Work Design Standard Manual (NWDSM)
- MTR Operation Division Safety Requirement and Information for Contractors
- Operation Division Railway Safety Rule
- Approved method statement

**15. Environmental Management**

The Contract shall follow all requirements and conditions set on Environmental Permit issued by EPD. All construction waste, dust and noise will be controlled during construction.

**16. Configuration Management**

N/A

**17. Application to New Extension Projects**

N/A

**18. Other Concerns / Instructions**

Prior to site construction, the Contractor shall conduct site survey, route verification and measurement.

**19. Impact of the works (Please mark the appropriate check box)**

[State any concerns (other than those mentioned in other parts of this EDOC) that this test, trial or modification may have]

Impact on			Responsible Parties (Name & Title)	Actions Required
<input type="checkbox"/>	19.1	Operations Manuals / Procedures	N/A	N/A
<input type="checkbox"/>	19.2	Maintenance Manuals / Procedures / Work Instructions/ Schedules	N/A	N/A
<input type="checkbox"/>	19.3	Spare parts catalogues and stock levels	N/A	N/A
<input type="checkbox"/>	19.4	Interfaced Systems	N/A	N/A
<input type="checkbox"/>	19.5	Drawings, and schematic and wiring diagram if applicable	N/A	N/A
<input type="checkbox"/>	19.6	Training for staff	N/A	N/A
<input type="checkbox"/>	19.7	Registration of new assets <sup>ix</sup>	N/A	N/A
<input type="checkbox"/>	19.8	Any other related matters (please specify)	N/A	N/A

<sup>ix</sup> Remind Project Controller and/or Lead Maintainer to register the new assets according to CGI 239 and Asset Registration guideline.

## 20. Incoming Goods Inspection (IGI) Requirements

- The contractor will be responsible for the inspection of all material prior to the installation on site.

## 21. FMECA

[FMECA is mandatory for engineering works involving any of the following:

- Change to a SCS / introduce a new SCS
- Change to PSD/APG/MGF/floodgate [Specific SRS]
- Affecting or Interface with SCS
- Act as measures to mitigate R1/ R2 hazards
- Change to C1/ C2 systems / equipment or introduce a new C1/C2 system / equipment
- Introduce a new design (i.e. new hardware or change to hardware / modify a hardware involving non-standard design)
- Redundancy for systems on controlling / carrying / supplying power to Signalling or Power Remote Control
- Change to a revenue-critical equipment or introduce a new revenue-critical equipment
- Change to P-Way systems/equipment<sup>x</sup> or interface with P-Way systems/equipment

The engineering works involving any of the above-mentioned items

☐ Yes ☒ No

If no, please provide justification.

The captioned works do not involve the above items.

## 22. Concept of Design (ConDes)

ConDes<sup>xi</sup> is mandatory for engineering works involving any of the following:

- SCS Design Change
- Design change for PSD, APG, MGF and floodgate [Specific SRS]
- Change to C1/C2 systems/equipment or introduce a new C1/C2 systems / equipment
- Redundancy for systems on controlling/ supplying power to Signalling or Power Remote Control
- Modification affecting track adhesion performance / rail integrity / switch and crossing integrity
- New design affecting inter-system interface
- Application of technology that is newly introduced in MTR

The engineering works involving any of the above-mentioned items? If yes, please attach the ConDes to this EDoc. If no, please provide justification<sup>4</sup>.

☐ Yes ☒ No

The captioned works do not involve the above items.

<sup>x</sup> Involving high consequence risk including derailment or train collision which affecting rail integrity / switch and crossing integrity / track adhesion performance.

<sup>xi</sup> Project Definition Documents such as Service Requirement Document (SRD), Functional Requirement Manual (FRM) might be used as a substitute to ConDes.

### 23. Safety Impact of Trackside Equipment Installation – SG Infringement

- 23.1 Is the gauging and clearance assessment required according to P/OD/AMS/041? ☒ Yes ☐ No

If no, please provide justification.

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- 23.2 Is the clearance requirement compiled with the requirement in S/NT-Saf/DS/01(01)? ☒ Yes ☐ No

If no, please state the endorsed SAFTEC Paper number and/or approved Operations Engineering Standard (OES) Waiver Request number which has/have been obtained.

Upon checking by T&ES PWay, the equipment installed on trackside will not infringe the structure gauge. However, it will infringe into the clearance zone for ballast maintenance, as well as the additional allowance for provision of walkway within depot. OES standard waiver **SWR 2024-028** have been applied and approved by standard owner.

- 23.3 State whether the trackside installation of fixed equipment with potential hazard<sup>xii</sup> of Structure Gauge (SG) infringement during operations and maintenance. ☒ Yes ☐ No

If yes, please quote the hazard log reference and/or the ASRisk ID.

The preventive / monitoring measure is stated in the hazard log in **Appendix B** to mitigate the potential hazard.

If no, please provide justification.

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### 24. New / Modified Trackside Installation in EAL

- Is earth/equipotential bond required to add or modify on the traction return rail? ☐ Yes ☒ No

If yes, please seek approval from EAL Bonding Review Working Group<sup>xiii</sup> (EALBRWG) and attached the endorsed form as record.

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If no, please provide justification.

No works in EAL

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<sup>xii</sup> The potential gauge infringement hazards during operations and maintenance, include operation/working condition and potential failure impacts on the systems, equipment or facilities.

<sup>xiii</sup> For EAL bonding application form, applicant shall seek MM-S&T EAL.

**Approval List for Works Requiring EDOC Approval  
(Engineering Works No. : ZCV20240 )**

Responsibilities	Name & Title	Signature	Date
<b>Prepared by</b> <i>(Designer or delegate)</i> <sup>1</sup> <i>(SCM or delegate)</i>	<b>YIU Alex Chun Ting</b> <b>Sr Construction Engineer – Civil</b>		
<b>Checked by</b> <i>(Design Manager or delegate)</i> <sup>1</sup> <i>(SCM or delegate)</i>	<b>CHAN Jeff Chi Chun</b> <b>Sr Construction Manager - Civil</b>		
<b>Checked by</b> <sup>2</sup> <i>(GM-PP&amp;D(O) or delegate)</i>	<b>CHAN Taky Tsun Kei</b> <b>Chief Projs Plan &amp; Dev Mgr (Ops)</b>		
<b>Approved by</b> <sup>3</sup> <i>(On behalf of CCB)</i>	<b>N/A</b>		
<b>Approved and authorised by</b> <sup>6</sup> <i>(Design Manager <u>from HKTS only</u>)</i>	<b>N/A</b>		
<b>Approved by</b> <sup>4</sup> <sup>1</sup> <i>(Design Manager or CCM <u>from CWBU / HKPBU</u>)</i>	<b>CHONG Daniel Hing Pong</b> <b>Chief Design Manager – OYB</b>  <b>KOO Raymond Kai On</b> <b>Chief Construction Manager – OYB</b>		
<b>Independent Checked by</b> <sup>5</sup> <i>(COAM / SOSoAM or delegate)</i>	<b>N/A</b>		
<b>Endorsed by</b> <sup>8</sup> <i>(Lead T&amp;ES Representatives)</i>	<b>NG Patrick Chi Chung</b> <b>Lead Civil&amp;Stn Fac Engg Mgr</b>  <b>LUI William Ching Man</b> <b>Acting Lead Design Mgr-PWEngg</b>		
<b>Authorised by</b> <sup>7</sup> <i>(CSE(Ops) or COES&amp;I)</i>	<b>CHAN HK Hing Keung</b> <b>Chief of Ops Engg Serv &amp; Inno</b>  <b>TANG Simon Siu Cheung</b> <b>DGM-Technical &amp; Asset Engg</b>		
<b>Endorsed by</b> <sup>9</sup> <i>(Maintainer)</i>	<b>KOO Raymond Kai On</b> <b>Chief Construction Manager – OYB Civil</b>		
<b>Endorsed by</b> <sup>10</sup> <i>(Asset Owner)</i>	<b>KOO Raymond Kai On</b> <b>Chief Construction Manager – OYB Civil</b>		
<b>Endorsed by</b> <sup>11</sup> <i>(Head of Line Group Management /HTO or delegate)</i>	<b>LEE Andy Po Wing</b> <b>Chief Ops Mgr – AEL, TCL &amp; DRL</b>		

<b>Responsibilities</b>	<b>Name &amp; Title</b>	<b>Signature</b>	<b>Date</b>
<b>Endorsed by</b> <i>(Project Controller)</i>	<b>KOO Raymond Kai On</b> <b>Chief Construction</b> <b>Manager – OYB</b>		
<b>Endorsed by</b>	<b>FAN Dave Pui Kiu</b> <b>Sr. Railway Protection</b> <b>Engineer</b>		
<b>Endorsed by</b> <i>(SHD Landlord)</i>	<b>TSUI Barry Ka Fai</b> <b>Senior Depot Manager -</b> <b>SHD</b>		



**Notes:**

- <sup>1</sup> Applicable to works on the Operating Railway by Capital Works Business Unit or Hong Kong Property Business Unit.
- <sup>2</sup> Check is required by:- GM-PP&D(O) or delegates when (i) the work is Extension related (e.g. new lines) or (ii) the changes will be adopted in New Extension Projects as stated in Section 17; or (iii) when the work is major C&R works (e.g. station modification, ped-links etc).
- <sup>3</sup> Approval by relevant CCB(s) is required when works involves changes of software and configurations under the (P/OD/AMS/012) System Configuration Management and Change Control Procedure
- <sup>4</sup> Approval by Design Manager(s) or Chief Construction Manager (CCM) from CWBU/HKPBU is required for works on the Operating Railway undertaken by Capital Works Business Unit or Hong Kong Property Business Unit prior to the authorisation by COES&I or CSE(Ops).
- <sup>5</sup> Independent Check is required for works which affect / modify on Safety Critical Systems or modify PSD/APG/MGF/Floodgate [Specific Safety Related Systems] or for mitigating R1/R2 hazards of the Operating Railway; and shall be carried by Operations Assurance Section according to the scope of modification.
- <sup>6</sup> Approval by Design Manager(s) from HKTS is required for all works on the Operating Railway undertaken by HKTS.
- <sup>7</sup> Authorisation from CSE(Ops)/ COES&I on their respective discipline is required when the works is:
  - affecting / modifying on Safety Critical Systems, or
  - modifying PSD/APG/MGF/Floodgate [Specific Safety Related Systems]
  - affecting the Fire Safety of the Railway, or
  - for mitigating R1/R2 hazards, or
  - works on OR undertaken by Capital Works Business Unit or Hong Kong Property Business Unit.
- <sup>8</sup> Endorsement by Lead T&ES Representatives is required for works on the Operating Railway undertaken by Capital Works Business Unit or Hong Kong Property Business Unit prior to the authorisation by COES&I or CSE(Ops). The Lead T&ES Representatives shall be identified based on the relevant discipline of the lead designer.
- <sup>9</sup> Endorsement by the relevant maintainer(s) is required when the works affect / introduce new maintenance procedures / practices.
- <sup>10</sup> Endorsement by the relevant Asset Owner is required when the works affects the cost of ownership for or life expectancy of the asset.
- <sup>11</sup> Head of Line Group Management's delegated representatives is:-
  - a.) COM for modifications on (i) station based systems for specific line and/or specific station(s) & (ii) train services related modifications;
  - b.) Head of Traffic Operation (HTO) for modification on OCC migration systems and train service related issues such as equipment alteration or new equipment provision which have impact to the train service.Endorsement by (Head of Line Group Management/HTO)'s delegated representatives is required when the works affect railway operations or operating procedure.

## **Engineering Drawings affected by this Engineering Work**

The following circuit diagrams shall be updated

< Please also fill in the “Requisition for Drawing Service” (OPM781D/R1/04.97) >

Drawing Title	Drawing no.

<b>Summary of Comment Sheet</b> <b>(Engineering Works No. : ZCV20240 )</b>			
EDOC Clause No.	Commented by (and Date)	Comments	Action (including the decision and rationale if comment is not accepted)

	<b>Appendices</b> (Identify and include additional information in the submission package)
	<p>Appendix A – Programme</p> <p>Appendix B – Hazard Log</p> <p>Appendix C – Instrumentation and Monitoring Layout Plan &amp; Pre-drilling Layout Plan</p> <p>Appendix D – Proposed Discharge Points</p> <p>Appendix E – BD Approved Drawings of Instrumentation and Monitoring &amp; Pre-drilling Works</p> <p>Appendix F – SG Checking</p> <p>Appendix G – Method Statement</p> <p>(I&amp;M: extracted section 11.1 – 11.8 of MS, ACC no. 1701-W-000-CSC-000122)</p> <p>(Pre-drilling extracted section 7.3 – 7.8 of MS, ACC no. 1701-W-000-CSC-760-000193)</p>