



# C610 – Systemwide Main Works

## INSTALLATION OF EARTHING AND BONDING FROM LIVERPOOL STREET TO WHITECHAPEL, E/B IRN

**CRL Document Number: C610-ATC-R6-NOX-CR092-50001**

Supplier Document Number: N/A  
Contract MDL reference: MDL S14.011

### 1. Contractor Document Approval:

| Revision:  | Date:      | Prepared by: | Checked by: | Approved by: | Reason for Issue:  |
|------------|------------|--------------|-------------|--------------|--------------------|
| 1.0        | 05/05/2018 | [Redacted]   | [Redacted]  | [Redacted]   | For Implementation |
| Signatures |            | [Redacted]   | [Redacted]  | [Redacted]   |                    |

### 2a. Stakeholder Review Required? YES NO

Stakeholder submission required: LU  RfL  Purpose of submission: For no objection   
 NR  LO  For information   
 DLR  Other: \_\_\_\_\_

This document has been reviewed by the following individual for coordination, compliance, integration and acceptance and is acceptable for transmission to the above stakeholder for the above stated purpose.

Sign: \_\_\_\_\_ Role: \_\_\_\_\_ Name: \_\_\_\_\_ Date: \_\_\_\_\_

Sign: \_\_\_\_\_ Role: \_\_\_\_\_ Name: \_\_\_\_\_ Date: \_\_\_\_\_

### 2b. Review by Stakeholder (if required):

| Stakeholder Organisation | Job Title | Name | Signature | Date | Acceptance               |
|--------------------------|-----------|------|-----------|------|--------------------------|
|                          |           |      |           |      | <input type="checkbox"/> |
|                          |           |      |           |      | <input type="checkbox"/> |
|                          |           |      |           |      | <input type="checkbox"/> |

### 3. Acceptance by Crossrail:

|  |         | <b>Crossrail Review and Acceptance Decal</b>  |                               |
|--|---------|---|-------------------------------|
| This decal is to be used for submitted documents requiring acceptance by Crossrail.  |         |   |                               |
| <input checked="" type="checkbox"/>  | Code 1. | Accepted. Work May Proceed  | Accepted by: [Redacted]       |
| <input type="checkbox"/>   | Code 2. | Not Accepted. Revise and resubmit. Work may proceed subject to incorporation of changes indicated | Name: [Redacted]              |
| <input type="checkbox"/>   | Code 3. | Not Accepted. Revise and resubmit. Work may not proceed   | Position: C610 FIELD ENGINEER |
| <input type="checkbox"/>   | Code 4. | Received for information only. Receipt is confirmed   | Date: 09.05.2018              |
| <small>Acceptance by Crossrail does not relieve the designer/supplier from full compliance with their contractual obligations and does not constitute Crossrail approval of design, details, calculations, analyses, test methods or materials developed or selected by the designer/supplier.</small> |         |   | Signature: [Redacted]         |

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**VERSION CHANGES, AUTHORISATION & ISSUE RECORD**

| Version: | Date:    | Sections revised | Brief description of the revision | Prepared by: | Checked by (lead reviewer): | Approved by: | Reason for Issue:  | Acceptance Decal Code |
|----------|----------|------------------|-----------------------------------|--------------|-----------------------------|--------------|--------------------|-----------------------|
| 1.0      | 05/05/18 | NA               | Original version                  |              |                             |              | For Implementation |                       |

Learning Legacy Document



# Installation Release Notice (IRN) Part 1 of 2



Crossrail Central Section

IRN Ref. Number:

IRN - C610-ATC-R6-NOX-CR092-50001

MDL NO. S14.011

**1** This Commissioning Lot has been installed in accordance with the agreed Design and Installation criteria, has satisfactorily passed construction technical verifications and is ready for the next phase to start either further installation or commissioning. This IRN is a notification of Transfer of Ownership from a Contractor's Installation Team to the receiving Installation or Commissioning Team. The Tier 1 T&C Representative's signature confirms that the Commissioning Lot is ready to be energised.

Commissioning Lot<sup>1</sup> description and location:

OLE-TEB-MNLEB-0102G

Earthing and Bonding from Liverpool Street to Whitechapel, E/B.

Record Package Listing: Attached  Signed

Commissioning Lot: Ref. Number: See above

Outstanding Work List: Not Applicable  Attached  Ref. Number: C610-ATC-R6-LRC-CR092-50002

The plant and materials described above has been the subject of a joint IRN inspection by the contractor's installation team and the receiving contractor's installation or commissioning team as applicable and it has been agreed that they are in a suitable state of readiness for further installation works or commissioning tests to commence as appropriate.

**2.1** NO WORKS CAN TAKE PLACE ON THE COMLOT BEFORE THE WAD COORDINATOR HAS SIGNED IN PART 3 UNLESS WAD EXEMPTION APPLIES

|   | Contract No | Name       | Date       | Signature  |
|---|-------------|------------|------------|------------|
| Installation / Construction Team Representative | C610        | [Redacted] | 08/05/18   | [Redacted] |
| QA/QC Representative (Tier 1)                   | C610        | [Redacted] | 09/05/2018 | [Redacted] |
| Receiving Party Representative                  | C610        | [Redacted] | 09/08/2018 | [Redacted] |
| T&C Representative (Tier 1)                     | C610        | [Redacted] | 9/5/18     | [Redacted] |

**2.2** CRL Statement: I accept Parts 1 and 2 of this IRN have been populated and signed by competent persons in accordance with the Contractor's Competency Management Plan. Agreed Defects have been captured in the Outstanding Works List identified in Section 7 of Part 2 and attached to this document, where applicable.

CRL Supervisor / Project Manager or delegated competent person<sup>2</sup>: Position: C610 Date: 09.05.18

Planned Implementation Date: Time: Day: Month: Year:

ComLot / Area Owner: (if different from Receiving Contractor)

**Declaration:** By the time and date shown in part 3, all relevant personnel have been informed of the changes in Commissioning Lot status as defined below :

- The change of conditions of the above plant and materials from quiescent to operating.
- That this will be deemed to take effect from the date shown.
- That any future works on this plant and equipment will require to be identified in the WAD.
- That any access into the controlled area surrounding this plant and material will require a WAD.

| Accepted by  | Contract No. | Name       | Date    | Signature  |
|--|--------------|------------|---------|------------|
| WAD Manager / Coordinator <sup>(3)</sup><br>Actual Implementation Date | C610         | [Redacted] | 10/5/18 | [Redacted] |

Notes: <sup>1</sup> Upon agreement with CRL Commissioning Lots may be combined under one IRN  
<sup>2</sup> refer to the Contractor's Competency Management Plan and Authorised Signatories and CRL Competent persons list  
<sup>3</sup> delete as appropriate



## CROSSRAIL CENTRAL SECTION MEP and SYSTEMWIDE CERTIFICATION 'RECORDS PACKAGE LISTING' Part 2 of 2

|            |  |                             |         |
|------------|--|-----------------------------|---------|
|            | Accompanying Notice or Certificate (part 1 of 2) | eB Number                   | MDL No. |
| e.g<br>IRN | e.g Installation Release Notice Phase 2.1        | C610-ATC-R6-NOX-CR092-50001 | S14.011 |

Name and location of Commissioning Lot/Sub-System/Elementary System (include Com Lot number if applicable):  
Earthing & Bonding between Liverpool Street to Whitechapel, Eastbound  
OLE-TEB-MNLEB-0102G

Precise limits covered by this package (including temporary works left in place):  
Traction earth wire + self bonding + earth bars

| THE FOLLOWING DOCUMENTS/RECORDS ARE SPECIFIC TO THESE WORKS |   | DO NOT DELETE "NOT APPLICABLE" ITEMS          |          |
|---|---|---|----------|
|   | Document Title  | Document Number                               | Revision |
| <b>1</b>  | <b>REFERENCE DOCUMENTS</b>  |   |          |
|   | list the higher level certificates where known and list all lower-level reference documents;<br>e.g. if this package is part 2 of a PAC then reference all related IRNs & PCCs. |   |          |
|   | Whole Contract Construction Certificate (WCCC)  | <a href="#">C610-ATC-O-CER-CRG03-50001</a>    | 1.0      |
|   | Acceptance Certificate (AC) - Phase 3   | <a href="#">C610-ATC-O7-CER-CRG03-50002</a>   | 1.0      |
|   | Partial Acceptance Certificate (PAC) - Phase 2.3  | AddPACNumber                                  |          |
|   | Pre-Commissioning Certificate (PCC) - Phase 2.2   | AddPCCNumber                                  |          |
|   | Installation Release Notice (IRN) - Phase 2.1   |   |          |
| <b>2</b>  | <b>ASSURANCE RECORDS SPECIFIC TO THIS PACKAGE</b>   |   |          |
|   | Audit Reports   | NotApplicable                                 |          |
|   | Surveillance Reports  | NotApplicable                                 |          |
|   | Competency Management Plan/Matrix   | NotApplicable                                 |          |
|   | Certificates of Competency of Personnel Performing Work Affecting Conformity to Requirements (where specified)  | NotApplicable                                 |          |
|   | Valid Subcontractor QMS Certification - ISO 9001: 2008  | NotApplicable                                 |          |
| <b>3</b>  | <b>DESIGN RECORDS</b>   |   |          |
|   | Deliverable Design Records relevant to the IRN Package required by: Part 28 of the Works Information Volume 2B  |   |          |
|   | Register and Issue Record (RIR)   | <a href="#">C610-ATC-R6-LRG-CRG03-50001</a>   | LIVE     |
|   | Conceptual Design Statement   |   |          |
|   | C610-OHLE and Earthing & Bonding Design Statement   | <a href="#">C610-ATC-R6-XST-CRG03-50001</a>   | 3.0      |
|   | <b>Design Certificates</b>  |   |          |
|   | OHLE and Traction Earthing_Bonding Gate 3b Pass Certificate (E&B zones 3&4)   | <a href="#">C610-XRL-O-CER-CRG03-50071</a>    | 1.0      |
|   | Designer CDM Risk Register  | <a href="#">C610-ATC-N3-LRG-CR001-50001</a>   | 14.0     |
|   | <b>Geotechnical Design or Technical Reports</b>   | NotApplicable                                 |          |
|   | Surveys   | NotApplicable                                 |          |
|   | <b>Detailed Designs</b>   |   |          |
|   | Traction Earthing & Bonding Layout, Liverpool Street Station, Sheet 1 of 2,   | <a href="#">C610-ATC-R6-DDA-C101 Z-10128</a>  | P02      |
|   | Traction Earthing & Bonding Layout, Liverpool Street Station, Sheet 2 of 2,   | <a href="#">C610-ATC-R6-DDA-C101 Z-10129</a>  | P02      |
|   | Traction Earthing & Bonding Layout, Liverpool Street to Whitechapel, Sheet 1 of 4,<br>(Cross Passage 6)   | <a href="#">C610-ATC-R6-DDA-CR092 Z-10130</a> | P03      |
|   | Traction Earthing & Bonding Layout, Liverpool Street to Whitechapel, Sheet 2 of 4,  | <a href="#">C610-ATC-R6-DDA-CR092 Z-10131</a> | P04      |
|   | Traction Earthing & Bonding Layout, Liverpool Street to Whitechapel, Sheet 3 of 4,<br>(Cross Passage 8)   | <a href="#">C610-ATC-R6-DDA-CR092 Z-10132</a> | P03      |
|   | Traction Earthing & Bonding Layout, Liverpool Street to Whitechapel, Sheet 4 of 4,  | <a href="#">C610-ATC-R6-DDA-CR092 Z-10133</a> | P03      |
|   | Traction Earthing & Bonding Layout, Whitechapel Station,  | <a href="#">C610-ATC-R6-DDA-D061 Z-10134</a>  | P02      |
|   | Traction Earthing & Bonding Layout, Plan Detail D2, Liverpool Street Station,   | <a href="#">C610-ATC-R6-DDA-C101 Z-10626</a>  | P01      |
|   | Traction Earthing & Bonding Layout, Plan Detail D3, Liverpool Street Station,   | <a href="#">C610-ATC-R6-DDA-C101 Z-10627</a>  | P02      |
|   | Traction Earthing & Bonding Layout, Plan Detail D1, Whitechapel Station,  | <a href="#">C610-ATC-R6-DDA-D061 Z-10628</a>  | P02      |
|   | Traction Earthing & Bonding Layout, Plan Detail D2, Whitechapel Station,  | <a href="#">C610-ATC-R6-DDA-D061 Z-10629</a>  | P01      |
|   | Traction Earthing & Bonding Layout, Plan Detail D3, Whitechapel Station,  | <a href="#">C610-ATC-R6-DDA-D061 Z-10630</a>  | P02      |
|   | <b>Design Specifications</b>  |   |          |
|   | C610 -Traction Earth - Spider Plate schedule  | <a href="#">C610-ATC-R6-TSC-CRG03-50004</a>   | 4.0      |
|   | C610- OHLE Earth bars Datasheet   | <a href="#">C610-ATC-R6-XDS-CRG03-50020</a>   | 1.0      |
|   | C610- OHLE 1kV cable Datasheets   | <a href="#">C610-ATC-R6-XDS-CRG03-50002</a>   | 1.0      |
|   | C610- OHLE rail Insert Datasheet  | <a href="#">C610-ATC-R6-XDS-CRG03-50018</a>   | 1.0      |
|   | C610- OHLE Impact anchor datasheet  | <a href="#">C610-ATC-R6-XDS-CRG03-50019</a>   | 1.0      |
|   | C610- OHLE Cable schedule   | <a href="#">C610-ATC-R6-TSC-CRG03-50003</a>   | 6.0      |
|   | C610 - OHLE Cable Installation Specification  | <a href="#">C610-ATC-R6-RSP-CRG03-50057</a>   | 2.0      |
| <b>4</b>  | <b>DELIVERABLE RECORDS</b>  |   |          |
|   | Deliverable Records relevant to the IRN Package required by: Part 28 of the Works Information Volume 2B   |   |          |
| <b>4A</b>   | <b>Manufacturing Records</b>  |   |          |
|   | Material Proposal Schedule  |   |          |



## CROSSRAIL CENTRAL SECTION MEP and SYSTEMWIDE CERTIFICATION 'RECORDS PACKAGE LISTING' Part 2 of 2

|            |   |  |                    |
|------------|---|--|--------------------|
| e.g<br>IRN | Accompanying Notice or Certificate (part 1 of 2)<br>e.g Installation Release Notice Phase 2.1 | eB Number<br>C610-ATC-R6-NOX-CR092-50001 | MDL No.<br>S14.011 |
|------------|---|--|--------------------|

Name and location of Commissioning Lot/Sub-System/Elementary System (include Com Lot number if applicable):  
Earthing & Bonding between Liverpool Street to Whitechapel, Eastbound  
OLE-TEB-MNLEB-0102G

Precise limits covered by this package (including temporary works left in place):  
Traction earth wire + self bonding + earth bars

| THE FOLLOWING DOCUMENTS/RECORDS ARE SPECIFIC TO THESE WORKS |  | DO NOT DELETE "NOT APPLICABLE" ITEMS          |          |
|---|--|---|----------|
|   | Document Title   | Document Number                               | Revision |
|   | MPS  | <a href="#">C610-ATC-O4-TSC-CRG03-50003</a>   | 12.0     |
|   | Material Compliance Records/Approvals  | <a href="#">C610-ATC-R6-LRC-CR092-50001</a>   | 1.0      |
|   | Factory Working Drawings   | NotApplicable                                 |          |
|   | Factory Inspection & Test Plans (ITP)<br>C610- Inspection and Test Plan OHLE Manufacture of Insulated Cables           | <a href="#">C610-ATC-O4-ITP-CRG03-50056</a>   | 2.0      |
|   | Factory ITP Deliverable Records Packages   | NotApplicable                                 |          |
|   | Factory Material Test Certificates (Certificates of Conformity)  | NotApplicable                                 |          |
|   | Factory Acceptance Test Certificates / Reports (FACs / FATs)<br>C610- Fat Report- OHLE Manufacture of Insulated Cables | <a href="#">C610-ATC-V3-RGN-CRG03-50004</a>   | 1.0      |
|   | C 610- Fat Report- OHLE Manufacture of Insulated Cables FAT 2  | <a href="#">C610-ATC-O4-RGN-CRG03-50115</a>   | 1.0      |
|   | C 610- Fat Report- OHLE Manufacture of Insulated Cables FAT 3  | <a href="#">C610-ATC-O4-RGN-CRG03-50202</a>   | 1.0      |
| 4B  | Installation Records   |   |          |
|   | Working Drawings (Issued for Construction C0#)   |   |          |
|   | Traction Earthing & Bonding Layout, Liverpool Street Station, Sheet 1 of 2,  | <a href="#">C610-ATC-R6-DDA-C101 Z-10128</a>  | C01      |
|   | Traction Earthing & Bonding Layout, Liverpool Street Station, Sheet 2 of 2,  | <a href="#">C610-ATC-R6-DDA-C101 Z-10129</a>  | C01      |
|   | Traction Earthing & Bonding Layout, Liverpool Street to Whitechapel, Sheet 1 of 4,<br>(Cross Passage 6)                | <a href="#">C610-ATC-R6-DDA-CR092 Z-10130</a> | C01      |
|   | Traction Earthing & Bonding Layout, Liverpool Street to Whitechapel, Sheet 2 of 4,                                     | <a href="#">C610-ATC-R6-DDA-CR092 Z-10131</a> | C01      |
|   | Traction Earthing & Bonding Layout, Liverpool Street to Whitechapel, Sheet 3 of 4,<br>(Cross Passage 8)                | <a href="#">C610-ATC-R6-DDA-CR092 Z-10132</a> | C01      |
|   | Traction Earthing & Bonding Layout, Liverpool Street to Whitechapel, Sheet 4 of 4,                                     | <a href="#">C610-ATC-R6-DDA-CR092 Z-10133</a> | C01      |
|   | Traction Earthing & Bonding Layout, Whitechapel Station,   | <a href="#">C610-ATC-R6-DDA-D061 Z-10134</a>  | C01      |
|   | Traction Earthing & Bonding Layout, Plan Detail D2, Liverpool Street Station,  | <a href="#">C610-ATC-R6-DDA-C101 Z-10626</a>  | C01      |
|   | Traction Earthing & Bonding Layout, Plan Detail D3, Liverpool Street Station,  | <a href="#">C610-ATC-R6-DDA-C101 Z-10627</a>  | C01      |
|   | Traction Earthing & Bonding Layout, Plan Detail D1, Whitechapel Station,   | <a href="#">C610-ATC-R6-DDA-D061 Z-10628</a>  | C01      |
|   | Traction Earthing & Bonding Layout, Plan Detail D2, Whitechapel Station,   | <a href="#">C610-ATC-R6-DDA-D061 Z-10629</a>  | C01      |
|   | Traction Earthing & Bonding Layout, Plan Detail D3, Whitechapel Station,   | <a href="#">C610-ATC-R6-DDA-D061 Z-10630</a>  | C01      |
|   | Installation Inspection & Test Plan (ITP)  |   |          |
|   | C610- Inspection and Test Plan Traction Earthing and Bonding Installation Activity 1 - Installation<br>of Earth bars   | <a href="#">C610-ATC-O4-ITP-CRG03-50184</a>   | 4.0      |
|   | C610- Inspection and Test plan - Traction Earthing and Bonding- Activity 2,3,4,5,6,7 & 8                               | <a href="#">C610-ATC-O4-ITP-CRG03-50189</a>   | 3.0      |
|   | Installation ITP Deliverable Records Package (SAF)<br>Please refer to section 5.2 of SAF                               | <a href="#">C610-ATC-R6-LRC-CR092-50001</a>   | 1.0      |
|   | Construction Method Statements   |   |          |
|   | C610- Method Statement Traction Earthing & Bonding Installation – Activity 1   | <a href="#">C610-ATC-O1-GMS-CRG03-50181</a>   | 5.0      |
|   | C610- Method Statement Traction Earthing & Bonding Installation – Activity 2   | <a href="#">C610-ATC-O1-GMS-CRG03-50187</a>   | 4.0      |
|   | C610 - Method Statement - Traction Earthing and Bonding Installation - Activities 4 – 6 – 7 & 8                        | <a href="#">C610-ATC-O1-GMS-CRG03-50176</a>   | 5.0      |
|   | C610 - Method Statement - Traction Earthing & Bonding Installation – Activities 3 & 5                                  | <a href="#">C610-ATC-O1-GMS-CRG03-50177</a>   | 4.0      |
|   | Short Notice Changes (SNC)   | NotApplicable                                 |          |
|   | Change Request notices (PMIs)  | NotApplicable                                 |          |
|   | Requests for Information (RFIs)  | NotApplicable                                 |          |
|   | Field Change Documents (FCDs)  |   |          |
|   | FCD related to SOB-OHLE-0184   | <a href="#">C610-FCD-000453</a>               |          |
|   | (FCD related to SOB-OHLE-0238)   | <a href="#">C610-FCD-000602</a>               |          |
|   | FCD related to SOB-OHLE-0239   | <a href="#">C610-FCD-000637</a>               |          |
|   | (FCD related to SOB-OHLE-0286)   | <a href="#">C610-FCD-000673</a>               |          |
|   | FCD related to SOB-OHLE-0304   | <a href="#">C610-FCD-000639</a>               |          |
|   | (FCD related to SOB-OHLE-0307)   | <a href="#">C610-FCD-000636</a>               |          |
|   | FCD related to SOB-OHLE-0318   | <a href="#">C610-FCD-000647</a>               |          |
|   | FCD related to SOB-OHLE-0325   | <a href="#">C610-FCD-000677</a>               |          |
|   | FCD related to SOB-OHLE-0327   | <a href="#">C610-FCD-000700</a>               |          |



## CROSSRAIL CENTRAL SECTION MEP and SYSTEMWIDE CERTIFICATION 'RECORDS PACKAGE LISTING' Part 2 of 2

|  |                             |         |
|--|-----------------------------|---------|
| Accompanying Notice or Certificate (part 1 of 2)     | eB Number                   | MDL No. |
| e.g<br>IRN e.g Installation Release Notice Phase 2.1 | C610-ATC-R6-NOX-CR092-50001 | S14.011 |

Name and location of Commissioning Lot/Sub-System/Elementary System (include Com Lot number if applicable):  
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OLE-TEB-MNLEB-0102G

Precise limits covered by this package (including temporary works left in place):  
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| THE FOLLOWING DOCUMENTS/RECORDS ARE SPECIFIC TO THESE WORKS   | DO NOT DELETE "NOT APPLICABLE" ITEMS          |          |
|---|---|----------|
| Document Title  | Document Number                               | Revision |
| Non-Conformance Reports and Notification of Defects (NCRs)  | NotApplicable                                 |          |
| Revision X0# Red Line Marked up Drawings  |   |          |
| Traction Earthing & Bonding Layout, Liverpool Street Station, Sheet 1 of 2,                                       | <a href="#">C610-ATC-R6-DDA-C101 Z-10128</a>  | X01      |
| Traction Earthing & Bonding Layout, Liverpool Street Station, Sheet 2 of 2,                                       | <a href="#">C610-ATC-R6-DDA-C101 Z-10129</a>  | X01      |
| Traction Earthing & Bonding Layout, Liverpool Street to Whitechapel, Sheet 1 of 4,<br>(Cross Passage 6)           | <a href="#">C610-ATC-R6-DDA-CR092 Z-10130</a> | X02      |
| Traction Earthing & Bonding Layout, Liverpool Street to Whitechapel, Sheet 2 of 4,                                | <a href="#">C610-ATC-R6-DDA-CR092 Z-10131</a> | X01      |
| Traction Earthing & Bonding Layout, Liverpool Street to Whitechapel, Sheet 3 of 4,<br>(Cross Passage 8)           | <a href="#">C610-ATC-R6-DDA-CR092 Z-10132</a> | X02      |
| Traction Earthing & Bonding Layout, Liverpool Street to Whitechapel, Sheet 4 of 4,                                | <a href="#">C610-ATC-R6-DDA-CR092 Z-10133</a> | X01      |
| Traction Earthing & Bonding Layout, Whitechapel Station,  | <a href="#">C610-ATC-R6-DDA-D061 Z-10134</a>  | X01      |
| Traction Earthing & Bonding Layout, Plan Detail D2, Liverpool Street Station,                                     | <a href="#">C610-ATC-R6-DDA-C101 Z-10626</a>  | X01      |
| Traction Earthing & Bonding Layout, Plan Detail D3, Liverpool Street Station,                                     | <a href="#">C610-ATC-R6-DDA-C101 Z-10627</a>  | X01      |
| Traction Earthing & Bonding Layout, Plan Detail D1, Whitechapel Station,  | <a href="#">C610-ATC-R6-DDA-D061 Z-10628</a>  | X01      |
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| Traction Earthing & Bonding Layout, Plan Detail D3, Whitechapel Station,  | <a href="#">C610-ATC-R6-DDA-D061 Z-10630</a>  | X01      |
| Third Party Inspection Reports  | NotApplicable                                 |          |
| Health and Safety File as defined in the Works Information  | NotApplicable                                 |          |
| Operational and Maintenance Manuals   | NotApplicable                                 |          |
| Hardware Documentation  | NotApplicable                                 |          |
| <b>5 TESTING AND COMMISSIONING RECORDS (not applicable for IRN)</b>   |   |          |
| Deliverable T&C Records relevant to the PAC, PCC or AC as required by: Part 28 of the Works Information Volume 2B |   |          |
| Testing & Commissioning Management Plan/Strategy  |   |          |
| C610 - Testing & Commissioning Strategy   | <a href="#">C610-ATC-O4-STP-CRG03-50001</a>   | 3.0      |
| C610 Testing and Commissioning Management Plan  | <a href="#">C610-ATC-O4-STP-CRG03-50002</a>   | 2.0      |
| Commissioning Logic   |   |          |
| C610 - OHLE Commissioning Logic   | <a href="#">C610-ATC-O4-RSP-CRG03-50006</a>   | 3.0      |
| Commissioning Lot Definition Document   |   |          |
| C610 - OHLE Commissioning Lots Definition   | <a href="#">C610-ATC-R6-RSP-CRG03-50001</a>   | 3.0      |
| Inspection & Test Plans / Commissioning Test Plans per System   | NotApplicable                                 |          |
| Commissioning Method Statements per System  | NotApplicable                                 |          |
| Site Acceptance Tests   | NotApplicable                                 |          |
| Test Data Sheets  | NotApplicable                                 |          |
| Test Reports  | NotApplicable                                 |          |
| Calibration Certification   | NotApplicable                                 |          |
| Software Licences   | NotApplicable                                 |          |
| Revision X0# Red Line Marked Up Drawings  | NotApplicable                                 |          |
| Electronically Re-drawn Operational drawings at Revision C0# status AB 'As Built' (by Originator)                 | NotApplicable                                 |          |
| Health & Safety File as defined in the Works Information  | NotApplicable                                 |          |
| Conditions and Restrictions   | NotApplicable                                 |          |
| RAM evidence submission (on CRL DRACAS database)  | NotApplicable                                 |          |
| <b>6 ASSET, OPERATION AND MAINTENANCE DELIVERABLE RECORDS</b>   |   |          |



## CROSSRAIL CENTRAL SECTION MEP and SYSTEMWIDE CERTIFICATION 'RECORDS PACKAGE LISTING' Part 2 of 2

|  |                                    |                |
|--|------------------------------------|----------------|
| <b>Accompanying Notice or Certificate (part 1 of 2)</b>  | <b>eB Number</b>                   | <b>MDL No.</b> |
| e.g IRN <b>e.g Installation Release Notice Phase 2.1</b> | <b>C610-ATC-R6-NOX-CR092-50001</b> | <b>S14.011</b> |

Name and location of Commissioning Lot/Sub-System/Elementary System (include Com Lot number if applicable):  
 Earthing & Bonding between Liverpool Street to Whitechapel, Eastbound  
 OLE-TEB-MNLEB-0102G

Precise limits covered by this package (including temporary works left in place):  
 Traction earth wire + self bonding + earth bars

| THE FOLLOWING DOCUMENTS/RECORDS ARE SPECIFIC TO THESE WORKS   | DO NOT DELETE "NOT APPLICABLE" ITEMS        |          |
|---|---|----------|
| Document Title  | Document Number                             | Revision |
| Deliverable O&M Records relevant package required by; Part 28 of the Works Information Volume 2B  |   |          |
| Commissioning Lot Asset Register/List   | <a href="#">C610-XRL-Z3-XDS-CR001-50024</a> | 16.0     |
| Asset Tag/Label Records (if not included in ITP records)  | NotApplicable                               |          |
| Maintenance Records - Plant & Equipment   | NotApplicable                               |          |
| Operation & Maintenance Manuals   | NotApplicable                               |          |
| Records of Modifications made to the Completed Infrastructure or Installed Equipment  | NotApplicable                               |          |
| <b>7 OUTSTANDING DOCUMENTATION &amp; RECORDS</b>  |   |          |
| Documents or records that have not been submitted or accepted but do not prevent the sign-off of the IRN or T&C Certificate. Add to Punchworks. |   |          |
| Hand-over Punchwork / Defects List (including test logs)  |   |          |
| ROWL Register   | <a href="#">C610-ATC-R6-LRC-CR092-50002</a> | 1.0      |

| CONTRACTOR STATEMENT   |                               |
|--|-------------------------------|
| The documents listed in this Package Listing are the Records and Record Drawings relating to the element of Installation, or Testing & Commissioning of equipment or systems described above.<br>I / We certify that the Records and Record Drawings listed above in this Package exist and have been input into, and are accessible via, the Project EDMS. All Contractor documents have been checked to assure that a relevant and competent Contractor employee or sub-contractor employee has signed each document, in accordance with our Competency Management Plan. |                               |
| Signed Package P: [Redacted]   | Signed Checked by: [Redacted] |
| Name: [Redacted]   | Name: [Redacted]              |
| Signed Contractor Quality Manager: [Redacted]  |                               |
| Name: [Redacted]   | Date: 8/5/18                  |
| Supervisor's Statement   |                               |
| I accept that this Package Listing has been populated and the Contractor Review Statement above is signed by a Competent Individual in accordance with the Contractor's Competency Management Plan, and Outstanding Works / Defects have been identified in accordance with the Punchwork References as noted in Section 7 above [strikeout and note NOT APPLICABLE if necessary]  |                               |
| Signed CRL First Reviewer (if applicable):   |                               |
| Name: [Redacted]   | Date:                         |
| Signed Supervisor's Representative:  |                               |
| Name: [Redacted]   | Date: 09.05.2018              |