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| Logo Fulton Hogan AUS_CMYK_150dpi | | **Inspection and Test Plan - Control and Supervision of the Works** | | | | | | | | |  | **Document #**  **ITP-003** | |  |
| Revision : 02 | | 14/04/2020 | |
|  | | | | | | | | | | | | | | |
| **Client:** | **Yarra Trams** |  | **Construction Process:** |  | Prepared by: | |  | Reviewed by : | |  | Approved by : | |  |  |
| **Project:** | |  | ***Electrical and Communication Conduit*** |  | Name: | **Aaron Hatch** | | Name: | **Damon Bromwich** | | Name: | **Shaun Kent** | |  |
| **Contract No:** | |  | **Specifications: Yarra Trams Infrastructure - Tram Track Construction Standard (CE- 019-ST-0033)** | |  |  |  |  | |  |  |  |  |  |
|  | |  | **Structure / Component: Tram Tracks (Electrolysis, Platform Conduits)** |  | Signed : |  |  | Signed : | |  | Signed : |  |  |  |
|  | |  | **Location:** |  | Date : 14/04/2022 | | | Date : 14/04/2022 | |  | Date : 14/04/2022 | | |  |
|  | | | | | | | | | | | | | | |
| **Lot No:** |  | **Lot Details:** |  |  |  |  |  | **Lot Size/ Quantity:** | | |  |  |  |  |
|  | | | | | | | | | | | | | | |
| **Item** | **Task/Activity Description** | **Inspection / Controls and Verification Detail** | | | | | | **HP/ WP/ AP/ IP/ TP/ SCP** | **Responsibility** | **Checked by:** | | | | |
| **No.** | **Frequency** | **Acceptance Criteria** | **Reference Documents** | **Inspection / Test Method** | | **Record of conformity** | Project Engineer  Site Engineer Superintendent Surveyor Foreman | **Client** | **Fulton Hogan** | | **FH's Sub- contractor** | **Date** |
| **1** | **Preliminary Works** | | | | | | | | | | | | | |
| 1.1 | Check for correct documentation | Prior to commencing any activity | Employees and sub contractors shall be issued with the most current and complete construction drawings | Drawings and drawing registers | Visual inspection | | This ITP signed off | **HP\*** | Fulton Hogan Engineer | N/A |  | | N/A |  |
| 1.2 | Implementation of all measures and controls | Prior to commencing any activity | All necessary measures and controls are being implemented, that is: PSP, EMP, TMP, JSEA, SWMS & WP | PSP, EMP, TMP, JSEA, SWMS, WP | Visual Inspection | | This ITP signed off | **HP\*** | Fulton Hogan Engineer | N/A |  | | N/A |  |
| 1.3 | Materials | Per Batch | * Electrical supply conduit to be Orange and rigid HD UPVC of sizes as required. * Communications conduit to be White and rigid UPVC of either 32 or 50mm size or larger as required. | CE-019-ST-0033 cl 4.4.1  AS 2053 | Verify | | This ITP signed | **HP\*** | Fulton Hogan Engineer | N/A |  | | N/A |  |
| **2** | **Construction Works** | | | | | | | | | | | | | |
| 2.1 | Survey set-out | As required | * Work is set out in accordance with drawings. | Work procedure | Verify | | This ITP signed | **HP\*** | Fulton Hogan  Engineer | N/A |  | | N/A |  |
| 2.2 | Excavation and Trenching | Prior to Installation | * Minimum cover for underground conduits shall be 600mm * Open trenching only permitted in unpaved areas, line of trench to be at right angle to the track * Trench shall maintain a minimum clearance of 300mm from all existing services where possible | CE-019-ST-0033 cl 4.2.5 & 4.2.8 | Verify | | This ITP signed | **WP** | Fulton Hogan Engineer | N/A |  | | N/A |  |
| 2.3 | Installation of Conduits and pits | Each Lot | * Conduits in the same run shall be spaced 50mm by using clean sand to pack voids   Conduit shall be embedded in not less than 50mm sand and covered by  >50mm - 75mm< sand   * Mechanical protection shall be provided by installation of polymeric cable or cover strip of thickness not less than 3mm, and of a material equivalent of UPVC conduit complying to AS 2053. Protective material shall be placed not less than 100mm above the conduit, and shall not be less than 150mm wide. * Conduits shall be joined male to female ends and sealed with approved adhesive immediately prior to joining. * Conduits shall not be subject to construction loadings * Bottom of lowest conduit shall maintain a minimum 100mm above pit floor * Conduits shall be capped with UPVC electrical caps | CE-019-ST-0033  cl 4.4 | Visual inspection | | This ITP signed | **WP** | Fulton Hogan Engineer/ YT | N/A |  | | N/A |  |
| 2.4 | Inspection of conduit installation | Each Lot | Laying of conduits and installation of pits shall be inspection by superintendent and conform to design drawings before any backfilling procedure is to commence | Work procedure | Visual Inspection | | This ITP Signed | **\*HP** | Fulton Hogan Engineer/YT | N/A |  | | N/A |  |

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| **No.** | **Frequency** | **Acceptance Criteria** | **Reference Documents** | **Inspection / Test Method** | **Record of conformity** | Project Engineer  Site Engineer Superintendent Surveyor Foreman | **Client** | **Fulton Hogan** | **FH's Sub- contractor** | **Date** |
| 2.5 | Back Fill of Trenches | | Each Lot | * Backfilling (for trenching or road crossings)   - conduit trench shall be backfilled above marker tape with crushed rock or suitable excavated material and compacted to 90% standard compaction 150mm-200mm below sub base level, the last 150mm-200mm shall be compacted to 100% standard compaction using handheld mechanical plant | CE-019-ST-0033 cl 4.2.5 | Verify | This ITP signed | **IP** | Fulton Hogan Engineer | N/A |  | N/A |  |
| 2.6 | Installation of Draw Cords | | Each Lot | Draw wire shall be provided for each conduit, with extra 3m length at each pit, material to be used shall be 6mm 'telstra rope' | CE-019-ST-0033 cl 4.4.6.2 | Verify | This ITP signed | **IP** | Fulton Hogan Engineer | N/A |  | N/A |  |
| 2.7 | Compaction | | Each Lot | During compaction optimum moisture content of bedding and select fill is within 85% to 115% as provided by suppliers | CE-019-ST-0033 cl 4.2.8 | Verify | This ITP signed | **HP\*** | Fulton Hogan Engineer | N/A |  | N/A |  |
|  | | | | | | | | | | | | | |
|  | **Final Inspection** |  |  |  |  |  |  |  |  |  |  |  |  |
| The signature below verifies that this ITP has been completed in accordance with the FH’s Quality system Procedures and verifies lot compliance with specifications. | | | | | | | | | | | | | |
|  | Print Name: |  | Position: |  | Signature: |  |  |  |  | Date: / / | |  |  |
|  | | | | | | | | | | | | | |
| ***Legend*** | | | | | | | | | | | | | |
| **HP** | Hold Point | Work shall not proceed past the HP until released by the Superintendent | | | **IP** | Inspection point | | Formal Inspection to be done and recorded | | | |  |  |
| **HP\*** | FH Hold Point | Work shall not proceed past the HP\* until released by FHDB | | | **TP** | Test Point |  | Product compliance test to be undertaken and recorded/reported | | | | |  |
| **WP** | Witness Point | An inspection which must be witnessed by the Superintendent | | | **SCP** | Survey conformance point | | A qualified surveyor to check product/section/structure and report | | | | |  |
| **AP** | Approval Point | Written or verbal approval given by the Superintendent | | |  | | | | | | | | |