**Inspection and test plan – Fire Service Installation & Commissioning**

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| **Project no.** | CC0408 | **Project name** | Melbourne Renewable Energy Hub (MREH) | | | **Date** | | 27/03/2023 | | **SGJV Approval** | MRH00B00-QAITP0006 |
| **Symal ITP no.** | CC0408-ITP-010 | **SGJV ITP no.** | MRH00B00-QAITP0006 | **Revision date** | 03/06/2024 | **Plant and equipment used** | | | Excavator, Tandem, Truck & Trailers, DPU, pressure testing equipment, plumbing equipment, HDPE Pipe Welding Machine | | |
| **Lot no.** |  | **Location (chainages, detailed description or marked up plan)** | | | | |  | | | | |

Attach Dockets, Certificates and QA Documents to ITP

|  | |  |  | |  | |  | **Verification of acceptance by** | | | | | | | **Remarks/record (e.g. Test frequency reports, certificates, checklist etc.)** |
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|  | |  |  | |  | |  | **Symal** | | | **SGJV** | | **Principal** | |
| **Item no.** | | **Activity** | | **Ref docs** | | **Acceptance criteria** | **Acceptance** | **Key** | **Resp** | **Initial/ date** | **Key** | **Sign/ date** | **Key** | **Sign**  **/Date** |
|  | **1.0 Preliminaries** | | | | | | | | | | | | | | |
| **1.1** | | **Determine Lot Size** | | AS3500 | | ­­Full Ring-main­ | See Work Lot Map  Yes  No  N/A | W | SE |  | S |  |  |  | Work Lot Map |
| **1.2** | | **Survey Set-out** | | MRHA0B00-FPDWG0006 | | Prior to excavations being carried out, the contractor shall engage a suitably qualified surveyor to set out all fire lines including hydrants and risers. | Yes  No  N/A | W | SE |  | S |  |  |  | N/A |
| **1.3** | | **Approved Material Type** | | MRHA0B00-FPDWG0004-0005  AS3500  AS2419.1 | | All materials selected in accordance with AS4130 and MREH civil specification and drawings. | Yes  No  N/A | H | SE |  | S |  |  |  | Proof of each delivery (Delivery dockets/photo)  Test Report/Material Certificate |
| **1.4** | | **Fusion Welding Equipment** | | AS2033 CI4 & PIPA (POP-001 & POP-003) | | Prior to welding commencing ensure Fusion Welding Equipment Calibration Certificate (every 3 months) and Welding Operator Qualification Certificate (every 2 years) are correct/approved prior to work commencement. | Yes  No  N/A | W | SE |  | S |  |  |  | Calibration Certificate and Verification of competency |
|  | **2.0 In Process Works** | | | | | | | | | | | | | | |
| **2.1** | | **Excavation** | | MRHA0B00-FPDWG0004-0009  AS3500  Excavation permit | | All excavations subject to inspection prior to the installation of services and throughout the duration of the excavation. | Yes  No  N/A | S | SE |  | S |  |  |  | N/A |
| **2.2** | | **Removal of Obstructions** | | MRHA0B00-FPDWG0004-0009  AS2033 | | Remove obstructions including roots, stumps, boulders, and the like which may, in the opinion of Symal, interfere with the proper functioning of the service. | Yes  No  N/A | S | SE |  | S |  |  |  | N/A |
| **2.3** | | **Bedding** | | MRHA0B00-FPDWG0005  AS35000.1  AS2033 | | Pipes should be bedded and supported with river sand. | Yes  No  N/A | S | SE |  | S |  |  |  | PSD Report |
| **3.0 Installation of pipes** | | | | | | | | | | | | | | | |
| **3.1** | | **Pipe Installation** | | MRHA0B00-FPDWG0004-0009 | | Work shall be carried out by and under the direct supervision of  appropriately licenced personnel.    During construction, temporarily seal open ends of pipes and valves to prevent the entry of foreign matter into pipe systems.    Install piping in straight lines at uniform grades without sags. | Yes  No  N/A | S | SE |  | S |  |  |  | Visual inspection |
| **3.2** | | **Electrofusion Weld fittings/pipe/couplings** | | AS4130 PIPA (POP1/ POP3 / POP14) | | Ensure pipe is cleaned and scraped prior to welding.  Ensure pipe is fixed firmly in position.    Allow curing time as per specific fittings recommendations.  Visually check all fittings  have been welded. | Prior to Backfilling | W | SE |  | S |  |  |  | Welding procedure specification/Procedure specifications records  Welder Qualification record |
| **3.3** | | **Sluice valve** | | AS2419.1 | | To comply with AS2419.1 and Drawing MRHA0B00-FPDWG004~0006 | Yes  No  N/A | S | SE |  | S |  |  |  | Visual Inspection |
| **3.4** | | **Cover** | | AS3500.1  MRHA0B00-FPDWG0005 | | **Minimum depth of cover for buried pipes:**  Min. 750mm from FSL  Min. 150mm cover from compacted overlay.  Min. 600mm cover from bottom of the conduits.  Min. 100mm from side of trench wall. | Yes  No  N/A | H | SE |  | S |  |  |  | As-Built Attached |
| **4.0 Backfill** | | | | | | | | | | | | | | | |
| **4.1** | | **Backfill Material** | | AS3500  MRHA0B00-FPDWG0005 | | After pipes & fittings have been set in the correct position and jointed, further bedding material shall be used to fill all recesses below sockets, and bottoms of trenches. | Yes  No  N/A | H | SE |  | S |  |  |  | PSD Report |
| **4.3** | | **Layer Thickness** | | IFC Drawings  AS3500  MRHA0B00-CVDWG008 | | Backfill material must be placed and compacted in layers not exceeding 200mm. Compaction requirement & thickness follows Earthworks package:  - 200mm compacted layer  - 1 x test per 2 layers per 40 linear meters  - Bench Filling 98% Standard  - Road Sub grade 100% Standard  - Road Sub base 95% Modified  - Road Base 98% Modified  Fire Hydrant marker tape to be placed prior to backfill.  Backfill trenches as soon as possible after approval of laid and bedded service.    Allow adequate cover over pipe (minimum 600mm). | Yes  No  N/A | H | SE |  | W |  |  |  | Compaction test reports |
| **4.4** | | **Compaction** | | MRHA0B00-CVDWG0008  AS1289  AS3798 | | Undertaken using hand  methods only for first  300mm. | Yes  No  N/A | S | SE |  | S |  |  |  | Compaction test reports |
|  | **5.0 Fire Hydrant Install** | | | | | | | | | | | | | | |
| **5.1** | | **Survey set-out** | | MRHA0B00-FPDWG0006 | | Prior to the commencement of works, the contractor shall engage a suitably qualified surveyor to set out the works and clearly mark its limits. | Yes  No  N/A | W | SE |  | S |  |  |  | Visual inspection |
| **5.2** | | **Approved Material Type** | | MRHA0B00-FPDWG0004 -0009  AS2419 | | Materials used for the installation of Hydrants to be in accordance with AS2419 | Yes  No  N/A | H | SE |  | S |  |  |  | Proof of delivery (Delivery docket/photos) |
| **5.3** | | **Fire Hydrant Install** | | MRHA0B00-FPDWG0004 – 0009  AS2419.1 | | Ensure fire hydrants are located such that they do not impact vehicle access.  Bollards are to be installed for physical protection.  Confirm valve operability. | Yes  No  N/A | S | SE |  | S |  |  |  | Photo, if required |
| **6.0 Conformance Check** | | | | | | | | | | | | | | | |
| **6.1** | | **Flushing (Clean & Finish)** | | N/A | | On completion, each line shall be free from dirt, debris, or other impediments. | Yes  No  N/A | S | SE |  | S |  |  |  | Photo, if required |
| **6.2** | | **Hydrostatic Testing** | | AS2419 | | All pipe and hydrants to be pressure tested in accordance with AS2419    Complete Hydrostatic test  for 2 Hours @ 1700kpa | Yes  No  N/A | H | SE |  | H |  | W |  | Hydraulic Test Report  Test certification.  Calibration certificates |
| **6.3** | | **As-Builts** | | MRHA0B00-FPDWG0006 | | Accurately record the routes of all underground pipes before backfilling. | Yes  No  N/A | H | SE |  | H |  |  |  | As-Built Attached |

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| **Comments** |  |

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| **Works complete (signer SS)** |  | | | **Date works complete** | |  | | | |
| **Lot conforms (signer SE)** |  | **Date lot closed** |  | | **NCR/s no. raised** | |  | **Date NCR closed for this lot** |  |

**Client Representative signoff:**

**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Company\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Company\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Responsibility (Resp.) Key**: **PM**-Project Manager, **PE**-Project Engineer, **SE**- Site Engineer, **CS**-Civil Superintendent, **SS**-Site Supervisor, S**V**-Surveyor, **CR**-Client Representative

**Inspection Key : W –** Witness, **H –** Hold Point, **S -** Surveillance