**Inspection and test plan – Stormwater Drainage**

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| **Project no.** | CC0408 | **Project name** | Melbourne Renewable Energy Hub (MREH) | | | **Date** | | 03/06/2024 | | **SGJV Approval** | MRH00B00-QAITP0005 |
| **Symal ITP no.** | CC0408-ITP-004 | **SGJV ITP no.** | MRH00B00-QAITP0003 | **Revision date** | 03/06/2024(C) | **Plant and equipment used** | | | Excavator, Tandem, Posi-track, DPU | | |
| **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 Witness**  **(If applicable)** | |
| **Item no.** | **Activity** | | **Ref docs** | | **Acceptance criteria** | **Acceptance** | **Key** | **Resp** | **Initial/ date** | **Key** | **Sign/ date** | **Key** | **Sign/ date** |
| **1.0 Preliminaries** | | | | | | | | | | | | | | |
| 1.1 | Determine LotSize | | N/A | | Each run | \_\_\_\_\_\_\_\_\_\_\_\_  to  \_\_\_\_\_\_\_\_\_\_\_\_ | S | SE |  | S |  |  |  | ☐ Work Lot Map |
| 1.2 | Survey Setout | | MRH/A0/B/00-CV/DWG/0031 | | Prior to excavations being carried out, the contractor shall engage a suitably qualified surveyor to set out all drainage lines including manholes, temporary benchmarks, sewage wet wells etc. Clearly mark limits of works. Chainage, offsets, cut/fill level, cutting slopes, grades and cross sections specified or shown on the drawings, etc. | Yes ☐ No ☐ N/A ☐ | H | SE |  | H |  |  |  | N/A |
| 1.3 | ApprovedMaterial Type | | AS1260 | | In accordance with IFC Drawings: ☐ EnviroPipe ☐ PVC ☐ RCP ☐ StormPro All pipework to be clearly labelled & detectable to identify it as stormwater drainage. | Size/Class  \_\_\_\_\_\_\_ | H | SE |  | H |  |  |  | ☐ Delivery Dockets /Material certification |
| **2.0 Excavation of drainage trench** | | | | | | | | | | | | | | |
| 2.1 | Excavation | | AS3500 | | All excavations subject to inspection prior to the installation of services and throughout the duration of the excavation. Excavate to the lines, levels and grades as required for in ground services specified in accordance with the requirements of AS 3500. Keep trench width & depth to that required by the service & pits bedding method. | Yes ☐ No ☐ N/A ☐ | W | SE |  | S |  |  |  | ☐ Photos, if require |
| 2.2 | Removal ofObstructions | | N/A | | Remove obstructions including roots, stumps, boulders and the like which may interfere with the proper functioning of the service | Yes ☐ No ☐ N/A ☐ | S | SE |  | S |  |  |  | ☐ Photos, if require |
| 2.3 | WaterManagement | | EMP | | Symal shall maintain all excavations in a well-drained condition. No bedding material or pipe work shall be placed in excavations containing standing or running water. | Yes ☐ No ☐ N/A ☐ | S | SE |  | S |  |  |  | ☐ Photos, if require |
| 2.4 | BeddingMaterial | | MRHA0B0-CTDWG0020  AS3725 Table 6 & 7  MELBOURNE WATER DRAWING 7251/08/419 | | All Pipes shall be installed with well graded washed clean sand to AS3725 Bedding material to be placed the full width of the trench and not less than 100mm in thickness. | Yes ☐ No ☐ N/A ☐ | W | SE |  | S |  |  |  | ☐ Test Report (PSD) Material Certificate |
| 2.5 | Compactionof Bedding | | MRH/A0/B/00-CV/DWG/0031  MELBOURNE WATER DRAWING 7251/08/419 | | Bedding material shall be compacted to refusal handheld mechanical equipment to Density Index DI 50 | Yes ☐ No ☐ N/A ☐ | W | SE |  | S |  |  |  | ☐ Test Report |
| **3.0 Installation of drainage pipe** | | | | | | | | | | | | | | |
| 3.1 | PipeInstallation | | MRH/A0/B/00-CV/DWG/0031  MELBOURNE WATER DRAWING 7251/08/419  AS 3500 | | All excavations subject to inspection prior to the installation of services and throughout the duration of the excavation. Pipes shall be bedded evenly to ensure sockets to not bear on the base of the trench Pipe laying shall commence at upstream end at downstream end of the run. All pipes shall be laid with sockets pointing upstream. Lay at min grade 1:100 Excavate to the lines, levels and grades as required for in ground services specified in accordance with the requirements of AS 3500. Keep trench width & depth to that required by the service & its bedding method. | Yes ☐ No ☐ N/A ☐ | W | SE |  | S |  |  |  | ☐ Photos, if required |
| 3.2 | Pipe Grade | | MRHA0B00-CVDWG0032 – 0034, 0048 | | Install piping in straight lines at uniform grades without sags as per long section of drainage drawings. | Yes ☐ No ☐ N/A ☐ | W | SE |  | S |  |  |  | ☐ As-built Survey Report |
| 3.3 | Tolerances | | IFC Drawings | | Unless otherwise specified, tolerances as follows: • Invert level of pipes +10mm and –25mm  • Minimum fall within pits between incoming and outgoing pipes should be kept as 20mm | Yes ☐ No ☐ N/A ☐ | W | SE |  | S |  |  |  | ☐ As-Built Survey  Report |
| 3.4 | Pipe Fittings,Supports &Fixings | | AS3500 | | Provide all bends, junctions, inspection openings and other fittings as necessary for the completion of all systems. | Yes ☐ No ☐ N/A ☐ | H | SE |  | H |  |  |  | ☐ Material Certificate Specification |
| 3.5 | Pit Install | | AS3500 IFC Drawings | | Pits are to be constructed in accordance with project specifications, with internal surfaces and exposed surfaces finished smooth & true. All pipe break-ins are to be made neat and finished smooth without gaps/cavities. | Yes ☐ No ☐ N/A ☐ | H | SE |  | H |  |  |  | ☐ Material Certificate Specification |
| 3.6 | Survey ofInstalledServices | | IFC Drawings | | Accurately record the routes of underground cables and pipes before backfilling. Include on the record drawings. | Yes ☐ No ☐ N/A ☐ | W | SE |  | S |  |  |  | ☐ As-Built  Survey Report |
| **4.0 Backfill** | | | | | | | | | | | |  |  |  |
| 4.1 | BackfillMaterial | | IFC Drawings | | After pipes & fittings have been set in the correct position, jointed, and tested, further bedding material shall be used to fill all recesses below sockets, and bottoms of trenches. | Yes ☐ No ☐ N/A ☐ | H | SE |  | H |  |  |  | ☐ Test Report (PSD) Material Certificate |
| 4.2 | LayerThickness | | MRH/A0/B/00-CV/DWG/0031  MELBOURNE WATER DRAWING 7251/08/419 | | Backfill material must be placed and compacted in maximum 150mm (Haunch and Side Zone) 200mm layers (Overlay and Backfill Zone). Backfill trenches as soon as possible after satisfactory testing & approval of laid and bedded service. | Yes ☐ No ☐ N/A ☐ | W | SE |  | S |  |  |  | ☐ Photos, if required |
| 4.3 | CompactionTesting | | MRH/A0/B/00-CV/DWG/0031  MELBOURNE WATER DRAWING 7251/08/419 | | Haunch Zone:  • Bedding Sand compacted to Relative Density 90% or Density Index DI 60  Side Zone: • Class 2 or 3 Crushed Rock Compacted to Relative Density 90%  Overlay Zone: • Class 2 or 3 Crushed Rock to 150mm above the top of pipe to 98% SMDD  Backfill Zone: • Class 2 or 3 Crushed Rock to 98% SMDD | Yes ☐ No ☐ N/A ☐ | W | SE |  | S |  |  |  | ☐ Compaction Test Report |
| **5.0 Conformance Check** | | | | | | | | | | | | | | |
| 5.1 | Clean &Finish | | IFC Drawings | | On completion, each drainage line shall be free from dirt, debris, or other impediments. | Yes ☐ No ☐ N/A ☐ | S | SE |  | S |  |  |  | ☐ CCTV Report, Photos |
| 5.2 | VisualInspection | | IFC Drawings | | Do not cover or conceal work until it has been inspected by Symal. Leave pipe joints exposed to enable witness inspections. | Yes ☐ No ☐ N/A ☐ | W | SE |  | S |  |  |  | Visual Inspection  onsite |

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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