**Inspection and test plan – Stormwater Drainage**

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| **Project no.** | **CC0394** | **Project name** | Rangebank 200MW BESS | | **Date** | **05/07/2023** | | **RJE Approval** |  |
| **ITP no.** | CC0394 – ITP -004 | **Revision date** | 5.07.2023 | **Plant and equipment used** | | | Excavator, Posi-Track, Tandems, 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.)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | **Symal** | | | **RJE Ltd.** | |
| **Item no.** | **Activity** | **Ref docs** | **Acceptance criteria** | **Acceptance** | **Key** | **Resp** | **Initial/ date** | **Key** | **Sign/ date** |
| **1.1** | **Determine Lot Size** | IFC Drawings | Pit to Pit | \_\_\_\_\_\_\_\_\_\_\_\_  to  \_\_\_\_\_\_\_\_\_\_\_\_ |  | SE |  |  |  | ☐ Work Lot Map |
| **1.2** | **Survey Set-out** | IFC Drawings | 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 ☐ | W | SE |  | S |  |  |
| **1.3** | **Approved Material Type** | IFC Drawings  AS1260 | In accordance with IFC Drawings:   * Storm Pro * PVC   All pipework to be clearly labelled & detectable to identify it as stormwater drainage. | Pipe Size/Class  \_\_\_\_\_\_\_\_\_\_\_\_\_ | H | SE |  | H |  | ☐ Delivery Dockets |
| **2.0 Excavation of Drainage Trench** | | | | | | | | | | |
| **2.1** | **Excavation** | IFC Drawings  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 & its bedding method. | Yes ☐ No ☐ N/A ☐ | W | SE |  | S |  |  |
| **2.2** | **Removal of Obstructions** |  | 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 |  |  |
| **2.3** | **Water Management** |  | 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 |  |  |
| **2.4** | **Bedding Material** | IFC Drawings | 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 |  |  |
| **2.6** | **Compaction of Bedding** | IFC Drawings | Bedding material shall be compacted to refusal handheld mechanical equipment. | Yes ☐ No ☐ N/A ☐ | W | SE |  | s |  |  |
| **3.0 Installation of Drainage Pipe** | | | | | | | | | | |
| **3.1** | **Pipe Installation** | 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 |  |  |
| **3.2** | **Pipe Grade** | IFC Drawings | Install piping in straight lines at uniform grades without sags. | Yes ☐ No ☐ N/A ☐ | W | SE |  | s |  | ☐ CCTV Report |
| **3.3** | **Tolerances** |  | Unless otherwise specified, tolerances as follows:   * Offset of entry pits required to match lines of kerbs or barriers ±20mm * Plan location of pits other than offsets to kerb lines or barriers ±100mm * Invert level of pipes at pits ±50mm * Departure from design grade of pipe runs ±10mm in 10m provided minimum grade is not less than 1:250 | Yes ☐ No ☐ N/A ☐ | R | SE |  | s |  | ☐ As-Built |
| **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 |  | s |  |  |
| **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 | W | SE |  | s |  |  |
| **3.6** | **Survey of Installed Services** |  | Accurately record the routesof underground cables and pipes before backfilling. Include on the record drawings. | Yes  No  N/A | R | SE |  | s |  |  |
| **4.0 Backfill** | | |  |  |  |  |  |  |  |  |
| **4.1** | **Backfill Material** | 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 | W | SE |  | H |  |  |
| **4.2** | **Layer Thickness** | IFC Drawings | Backfill material must be placed and compacted in maximum 150mm layers.  Backfill trenches as soon as possible after satisfactory testing & approval of laid and bedded service. | Yes  No  N/A | W | SE |  | s |  |  |
| **4.3** | **Compaction Testing** | IFC Drawings  AS1289 | Layers must achieve 98% Standard Compaction at optimum moisture conditions. | 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 |  | SE |  |  |  | CCTV Report |
| **5.2** | **Visual Inspection** |  | Do not cover or conceal work until it has been tested. Leave pipe joints exposed to enable witness testing. | Yes  No  N/A | H | SE |  |  |  |  |

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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** |  |

**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