**Inspection and test plan – Sewerage System**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Project no.** | CC0375 | **Project name** | Hunter Power Project | | | | | | |
| **Symal ITP no.** | CC0375-ITP-026 | **Revision no.** | 2 | **Revision date** | | 14/03/2024 | **Plant and equipment used** | |  |
| **UGL ITP no.** | 3200-0663-HPP-QA-ITP-126 | | | | | | **SHL ITP no.** | HPP-UGL-QUA-GN-GEN-ITP-0066 | |
| **Symal Lot No.** |  | | | | | | | | |
| **Location (chainages, detailed description or marked up plan)** | | | | |  | | | | |

Attach Dockets, Certificates and QA Documents to ITP

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Contact Details | | Summary of Requirements | | | Principle Codes / Standards | | Records | | |
| **Customer:**  **Construction Manager:**  **Project Engineer:**  **Quality Representative:**  Subcontractors    Surveillance / Inspection Key  **HOLD POINT (H):** Nominated point beyond which work shall not proceed without verified acceptance by nominee.  **WITNESS POINT (W):** Points at which the nominee shall be notified and invited to witness an activity, but further work may proceed without the presence of the nominee.  **SURVEILLANCE (S): Continuing** evaluation of the status of methods, analysis of records and monitoring of activities on a random basis to ensure quality requirements will be met.  **VISUAL (V): 100**% Visual Inspection of work / item to ensure compliance with code / specification.  **DIMENSIONAL (D): Measurement** of critical dimensions to ensure work / item is within tolerance. | | **Process Qualifications**  **Traceability:**  Material:  Alloy Verification  Heat Treatment:  Pressure Testing  Consumable:  NDT:  Welder ID:  WPS:  Electrical:  Instruments  **Heat Treatment:**  **Dimensional Control:**  **Testing (NDT):**  **Acceptance Specification:**  **Pressure Testing:**  **Elect. / Instrumentation:**  Notes: | | | ASNZS\_3500.2-2021  Plumbing and drainage  Part 2:  **Client Specifications**  HPP-AEC-CIV-GN-GEN-SPT-0161\_0 QUALITY (CONSTRUCTION)  HPP-AEC-CIV-GEN-SPT-8001 HYDRAULIC  HPP-AEC-CIV-DD-SWS-SPT-1352\_0 PIPE DRAINAGE  **Engineering Procedures / WI** | | **(MDR Insert as marked 3 )**   * Inspect Release Certs. * Deviations/Concessions * Material Certificates * Conformance Certificate * Welding Records * Welder Qual. Register * NDT Reports * Report on Repairs * Heat Treatment Records * Dimensional Records * Non-Conformance Rpts * Pressure Test Records * Drawings & Data Sheets * Misc Verification Records * Electrical Test Sheets | |
| Prepared by: | Earl Andrade | | Date : 07/03/24 | Approved By: | | Date : 07/03/24 | |  |

|  | |  |  |  |  | **Verification of acceptance by** | | | | | | **Remarks / record (eg. test frequency, reports, certificates, checklist etc)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  |  |  |  | **Symal** | | **HPP Con** | | **HPP QA** | |
| **Item no.** | | **Activity** | **Ref docs** | **Acceptance criteria** | **Acceptance** | **Key** | **Sign date** | **Key** | **Sign date** | **Key** | **Sign date** |  |
| **1.0 Preliminaries** | | | | | | | | | | | | |
| **1.1** | | Documentation | Issued drawings / Site copy drawings | Check that you have the latest site and engineering drawings BEFORE starting each task/set of tasks. | Yes  No  N/A | S |  | S |  | S |  |  |
| **1.2** | | Lot Traceability | Spec. 0161 Quality [Cl 7.3] | Prepare a lot map for traceability of the work area | Yes  No  N/A | S |  | S |  | S |  | Lot map |
| **1.3** | | Pipe Material | Drawings | Has the correct class & type of drainage pipe been supplied and free of defects? | Yes  No  N/A | S |  | S |  | S |  | Material conformance certificate |
| **1.4** | | Underlying Lot Conformance | Underlying Lot ITP | Underlying services and/or assets have been installed prior to commencing works over and/or above.  Refer underlying lot ITP(s) | Yes  No  N/A | S |  | S |  | S |  |  |
| **1.5** | | Embedment Material | ASNZS\_3500.2-2021  Plumbing and drainage  Part 2:  [cl drainage 5.4.2] | Filling materials used for bedding of drains shall be one of the following:  (a) Gravel screenings or similar recycled materials of nominal size between 7mm and 10 mm. | Yes  No  N/A | S |  | S |  | S |  |  |
| **1.6** | | Set out | Drawings | Setout Culvert inlet/outlet and drainage structure positions to the location and levels on the drawings. This shall be presented for inspection by the superintendent. | Yes  No  N/A | S |  | S |  | S |  |  |
| **2.0 Excavation and Pipe Laying** | | | | | | | | | | | | |
| **2.1** | | Excavation | Hydraulic Specification  HPP-AEC-CIV-BL-GEN-SPT-8001  6.21 -GRADES  6.7 -Trenches.  In Accordance with IFC Drawings | All trenches shall be excavated as per Drawings otherwise directed by HPP. | Yes  No  N/A | S |  | S |  | S |  |  |
| **2.2** | | Pipe Laying and Joint Fitting | Drawings  Manufacturer Specifications | Have correct pipes (size and type) been laid and jointing installed as per manufacturer specifications  **HOLD POINT** | Yes  No  N/A | **H** |  | **H** |  | **H** |  |  |
| **2.3** | | Encasement Backfill | Spec. 1352 Pipe Drainage [Cl 5.1, 5.2] | **DICL & Flexible Pipes:**A diagram of a floor plan  Description automatically generated  A table with numbers and a few dimensions  Description automatically generated with medium confidence  Compacted with handheld equipment to point of refusal. | Yes  No  N/A | S |  | S |  | S |  |  |
| **2.4** | | Tank Installation  (supplied by HPP) | Drawings  Manufacturer Specifications | Install as per manufacture specifications and HPP instruction.  **HOLD POINT** | Yes  No  N/A | **H** |  | **H** |  | **H** |  |  |
| **3.0 Filling and Compaction** | | | | | | | | | | | | |
| **3.1** | | Obtain Certificate of Compliance | Hydraulic Specification  HPP-AEC-CIV-BL-GEN-SPT-8001 Cl.10.3 | Certify on completion of each component or stage that the works comply with the requirements of the BCA certifier and/or other authorities. Department of Fair-Trading Inspection to Sewer Pipe.  **HOLD POINT** | ☐ Yes ☐ No ☐ N/A | **H** |  | **H** |  | **H** |  | Certificate of Compliance |
| 3.2 | | Marker Tape | Design Drawings | Detectable Marker Tape to be installed a minimum of 300mm above the pipe. | Yes  No  N/A | S |  | S |  | S |  |  |
| **3.3** | | Backfill & Compaction above embedded Sewer Pipes | Earthworks (Roadways)  Cl 4.13, 7.1  Spec. 1352 Pipe Drainage [Cl 5.4] | Each layer to be compacted to a density that is no less than the density of the existing adjacent material. If the existing material density is unknown, minimum relative compaction to be: -   * 92% for general fill areas * 95% for pit and conduit bedding * 97% for select fill areas and sections of the trench above the overlay zone and within 1.5m of top of pavement.   *Layers not to exceed* ***150mm*** *compacted thickness.* | Yes  No  N/A | S |  | S |  | S |  | Test reports |
| **4.0 Conformance check** | | | | | | | | | | | | |
| **4.1** | | Carry out CCTV Inspection | Hydraulic Specification  HPP-AEC-CIV-BL-GEN-SPT-8001 Cl.9.3 | Inspection of all in-ground drainage systems after installation and prior to practical completion.  All defects disclosed during the tests shall be remedied immediately and, if required fresh tests shall be carried out | ☐ Yes ☐ No ☐ N/A | R |  | R |  | R |  | Inspection Report |
| **4.2** | | Hydrostatic Test | ASNZS\_3500.2-2021  Plumbing and drainage  Part 2:  [cl 15.2] | The sanitary plumbing and sanitary drainage shall be filled with water:   1. for sanitary drainage, to a height of not less than 1 m above the soffit level at the highest point of the section being tested; 2. for sanitary plumbing, to the spill level of the highest fixture or to the flood level of the lowest sanitary fixture, whichever is higher; and 3. in either case, not exceeding 3 m at the lowest point of the test section.   The pressure shall be maintained without leakage for at least 15 min. The source of any leak shall then be ascertained, and any defects repaired. The section under test shall then be retested. | ☐ Yes ☐ No ☐ N/A | R |  | R |  | R |  | Inspection Report |
| **4.3** | | Survey Report | Spec. 0161 Quality [Cl 3.13] | An as-built survey of the drainage system been completed to ensure all pipes are within construction tolerances.  Plan: +/- 200mm  Level: +/- 20mm | ☐ Yes ☐ No ☐ N/A | R |  | R |  | R |  | Survey report |
| **4.4** | | Acceptance and closure of non-conforming items | Spec. 0161 Quality [Cl 3.8] | NCRs to be opened for non-conforming items and closed prior to closing construction lot. **HOLD POINT** | ☐ Yes ☐ No ☐ N/A | **H** |  | **H** |  | **H** |  |  |
|  |  | **Comments**: | | | | | | | | | | |
|  |  |  | | | | | | | | | | |
|  |  |  | | | | | | | | | | |
|  |  |  | | | | | | | | | | |
|  |  |  | | | | | | | | | | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Acceptance of works:** | | | | |  | |
| Symal Infrastructure representative name |  |  | Symal Infrastructure representative signature |  | Date |  |
| HPP Construction representative name |  |  | HPP Construction representative signature |  | Date |  |
| HPP Quality representative name |  |  | HPP Quality representative signature |  | Date |  |

**Inspection Checklist Report**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Project no.** | CC0375 | **Project name:** | Hunter Power Project | | **Date:** |  |
| **Symal ITP no.** | CC0375-ITP-026 | | | | | |
| **UGL ITP no.** | 3200-0663-HPP-QA-ITP-126 | | **SHL ITP no.** | | HPP-UGL-QUA-GN-GEN-ITP-0066 | |
| **Symal Lot no.** |  | | | | **Symal Sub Lot no.** |  |
| **Location (chainages, detailed description or marked up plan)** | | | |  | | |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Verify of acceptance by** | | | | | | **Remarks / records** |
|  | **Symal** | | **HPP Con** | | **HPP QA** | |
| **ID No.** | **Activity to be verified** | **ITP Step No.** | **Items conforms?** | | | **NCR / Test Report No.** | **Key** | **Sign Date** | **Key** | **Sign Date** | **Key** | **Sign Date** |  |
| Yes | No | NA |
| **Preliminaries** | | | | | | | | | | | | | |
| 1. | Documentation | 1.1 |  |  |  |  | S |  | S |  | S |  |  |
| 2. | Lot Traceability | 1.2 |  |  |  |  | S |  | S |  | S |  | Lot map |
| 3. | Pipe Material | 1.3 |  |  |  |  | S |  | S |  | S |  | Material conformance certificate |
| 4. | Underlying Lot Conformance | 1.4 |  |  |  |  | S |  | S |  | S |  |  |
| 5. | Embedment Material | 1.5 |  |  |  |  | S |  | S |  | S |  |  |
| 6. | Set out | 1.6 |  |  |  |  | S |  | S |  | S |  |  |
| **Excavation and Pipe Laying** | | | | | | | | | | | | | |
| 7. | Excavation | 2.1 |  |  |  |  | S |  | S |  | S |  |  |
| 8. | Pipe Laying and Joint Fitting  **HOLD POINT** | 2.2 |  |  |  |  | **H** |  | **H** |  | **H** |  |  |
| 9. | Encasement Backfill | 2.2 |  |  |  |  | S |  | S |  | S |  |  |
| 10. | Tank Installation  **HOLD POINT** | 2.4 |  |  |  |  | **H** |  | **H** |  | **H** |  |  |
| **Filling and Compaction** | | | | | | | | | | | | | |
| 11. | Department of Fair-Trading Inspection to Sewer Pipe.  **HOLD POINT** | 3.1 |  |  |  |  | **H** |  | **H** |  | **H** |  | Certificate of Compliance |
| 12. | Marker Tape | 3.2 |  |  |  |  | S |  | S |  | S |  |  |
| 13. | Backfill & Compaction above embedded Sewer Pipes | 3.3 |  |  |  |  | S |  | S |  | S |  | Test reports |
| **Conformance Check** | | | | | | | | | | | | | |
| 14. | CCTV Inspection | 4.1 |  |  |  |  | R |  | R |  | R |  | Inspection Report |
| 15. | Hydrostatic Test | 4.2 |  |  |  |  | R |  | R |  | R |  | Inspection Report |
| 16. | Survey Report | 4.3 |  |  |  |  | R |  | R |  | R |  | Survey report |
| 17. | Acceptance and closure of non-conforming items  **HOLD POINT** | 4.4 |  |  |  |  | **H** |  | **H** |  | **H** |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| I certify that this Lot conforms to the requirements of the design and specifications; that all associated NCRs have been closed out: and all survey, conformance testing and inspections have been undertaken in accordance with the specified requirements. | | | | |
|  |  |  |  |  |
| **Symal Representative** |  | **Signature** |  | **Date** |
|  | | | | |
|  |  |  |  |  |
| **HPP Construction Representative** |  | **Signature** |  | **Date** |
|  | | | | |
|  |  |  |  |  |
| **HPP Quality Representative** |  | **Signature** |  | **Date** |
| **Comments:** | | | | |
|  | | | | |
|  | | | | |
|  | | | | |