**Inspection and test plan – Trade waste (pipe laying)**

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| **Project no.** | CC0375 | | **Project name** | Hunter Power Project | | | | | | **Date** |  |
| **Symal ITP no.** | | CC0375-ITP-005 | **Revision no.** | 6 | **Revision date** | 16/12/2022 | **Plant and equipment used** | |  | | |
| **UGL ITP no.** | | 3200-0663-HPP-QA-ITP-006 | | | | | **SHL ITP no.** | HPP-UGL-QUA-GN-GEN-ITP-0006 | | | |
| **Lot no.** | |  | **Location (chainages, detailed description or marked up plan)** | | | | |  | | | |

Attach Dockets, Certificates and QA Documents to ITP

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| 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: | | | **Client Specifications**  HPP-AEC-CIV-GN-GEN-SPT-0161\_0 QUALITY (CONSTRUCTION)  HPP-AEC-CIV-DD-SWS-SPT-1351\_0 STORMWATER DRAINAGE (CONSTRUCTION)  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: | Steven Lee | | Date: 16/12/22 | Approved By: Joshua Fisicaro | | Date : 16/12/22 | |  |

|  | |  | |  |  |  | **Verification of acceptance by** | | | | | | **Remarks / record (eg. test frequency, reports, certificates, checklist etc)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  | |  |  |  | **Symal** | | **UGL** | | **SHL** | |
| **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** | | Drainage Pipe Material | | Drawings | Has the correct class & type of drainage structure been supplied and free of defects? | Yes  No  N/A | S |  | S |  | S |  | Material conformance certificate |
| **1.4** | | Embedment material | | Spec. 1352 Pipe Drainage [Cl 5.1] | Material has plasticity index less than 6. | Yes  No  N/A | S |  | S |  | S |  | Delivery dockets  Test reports |
| **1.5** | | 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 |  |  |
| **1.6** | | Temp. drainage during construction | | Spec. 1351 Stormwater Drainage [Cl 2.1] | Adequate provision for runoff flows at drainage works under construction implemented and in good repair. | Yes  No  N/A | S |  | S |  | S |  |  |
| **1.7** | | Set out | | Spec. 1351 Stormwater Drainage [Cl 2.2]  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 | | Spec. 1352 Pipe Drainage [Cl 5.1, 5.2] | **DICL and Plastic Pipe:** | Yes  No  N/A | S |  | S |  | S |  |  |
| **2.2** | | Unsuitable Material | | Spec. 1351 Stormwater Drainage [Cl 2.3] | Any Unsuitable Material to be removed to the depth as directed by the Superintendent  **Notice: Prior to Placing Bedding**  **HOLD POINT** | Yes  No  N/A | **H** |  | **H** |  | **H** |  |  |
| **2.3** | | Compaction – Foundation | | Spec. 1351 Stormwater Drainage [Cl 2.5] | Trench foundation (including any unsuitable replacement) to be compacted to a relative compaction of 95% to a depth of 150mm below foundation level | Yes  No  N/A | S |  | S |  | S |  | Test reports |
| **2.4** | | Compaction – Embedment material | | Spec. 1352 Pipe Drainage [Cl 5.1, 5.4] | **DICL and Plastic Pipe:**  **Bedding:**  Required relative compaction in the bedding zone shall be 95% (AS 1289.5.4.1 Standard Compaction)  *Layers not to exceed* ***150mm*** *compacted thickness.* | Yes  No  N/A | S |  | S |  | S |  | Test reports |
| **2.5** | | Pipe Laying | | 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** |  | **W** |  | **W** |  |  |
| **2.6** | | Pipe joints | | Manufacturer Specifications | Pipe joints installed as per drawings and manufacturers specifications | Yes  No  N/A | S |  | S |  | S |  |  |
| **3.0 Filling and Compaction** | | | | | | | | | | | | | |
| **3.1** | | Compaction – Embedment material | | Spec. 1352 Pipe Drainage [Cl 5.1, 5.4] | **DICL and Plastic Pipe:**  **Side and Overlay:**  Required relative compaction in the side and overlay zone shall be 70% for trafficable areas and 60% for non-trafficable areas (AS 1289.5.4.1 Standard Compaction)    *Layers not to exceed* ***150mm*** *compacted thickness.* | Yes  No  N/A | S |  | S |  | S |  | Test reports |
| **3.2** | | Compaction – General Fill | | Spec. 1352 Pipe Drainage [Cl 5.4] | For sections of the trench above the overlay zone; backfill with general fill if in verges, medians or greater than 1.5m from top of pavement.  Minimum relative compaction to be 92% | Yes  No  N/A | S |  | S |  | S |  | Test reports |
| **3.3** | | Compaction – Select Fill | | Spec. 1352 Pipe Drainage [Cl 5.4] | For sections of the trench above the overlay zone and within 1.5m of top of pavement; backfill with Select fill.  Minimum relative compaction to be 97%  *Layers not to exceed* ***150mm*** *compacted thickness.* | Yes  No  N/A | S |  | S |  | S |  | Test reports |
| **3.4** | | Moisture Content | | Spec. 1352 Pipe Drainage [Cl 5.4] | Moisture Content for Backfill material to be within 60% to 95% OMC unless otherwise approved by Superintendent | Yes  No  N/A | S |  | S |  | S |  | Test reports |
| **4.0 Conformance Check** | | | | | | | | | | | | | |
| **4.1** | | Survey Report | | Spec. 0161 Quality [Cl 3.13]  RFI-026 | An as-built survey of the drainage system been completed to ensure all structures are within construction tolerances.  Plan: +/- 200mm  Level: +/- 20mm  **HOLD POINT** | Yes  No  N/A | **H** |  | **W** |  | **W** |  | Survey Report |
| **4.2** | | 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**: | | | | | | | | | | |
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| **Acceptance of works:** | | | | |  | |
| Symal Infrastructure representative name |  |  | Symal Infrastructure representative signature |  | Date |  |
| UGL representative name |  |  | UGL representative signature |  | Date |  |
| SHL representative name |  |  | SHL representative signature |  | Date |  |

**Inspection Checklist Report**

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| --- | --- | --- | --- | --- | --- | --- |
| **Project no.** | CC0375 | **Project name:** | Hunter Power Project | | **Date:** | **22/08/2023** |
| **Symal ITP no.** | CC0375-ITP-005 | | | | | |
| **UGL ITP no.** | 3200-0663-HPP-QA-ITP-006 | | **SHL ITP no.** | | HPP-UGL-QUA-GN-GEN-ITP-0006 | |
| **Symal Lot no.** | **ITP05-001** | | | | **Symal Sub Lot no.** | 26 |
| **Location (chainages, detailed description or marked up plan)** | | | | Trade Waste Line W04-12 to W04-13 | | |

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|  | **Verify of acceptance by** | | | | | | **Remarks / records** |
|  | **Symal** | | **UGL** | | **SHL** | |
| **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. | Drainage Pipe Material | 1.3 |  |  |  | |  | S |  | S |  | S |  | Material conformance certificate |
| 4. | Embedment material | 1.4 |  |  |  | |  | S |  | S |  | S |  | Delivery dockets  Test reports |
| 5. | Underlying Lot Conformance | 1.5 |  |  |  | |  | S |  | S |  | S |  |  |
| 6. | Temp. drainage during construction | 1.6 |  |  |  | |  | S |  | S |  | S |  |  |
| 7. | Set out | 1.7 |  |  |  | |  | S |  | S |  | S |  |  |
| **Excavation and Pipe Laying** | | | | | | | | | | | | | | |
| 8. | Excavation | 2.1 |  |  |  | |  | S |  | S |  | S |  |  |
| 9. | Unsuitable Material  **HOLD POINT** | 2.2 |  |  |  | |  | **H** |  | **H** |  | **H** |  |  |
| 10. | Compaction – Foundation | 2.3 |  |  |  | |  | S |  | S |  | S |  | Test reports |
| 11. | Compaction – Embedment material | 2.4 |  |  |  | |  | S |  | S |  | S |  | Test reports |
| 12. | Pipe Laying  **HOLD POINT** | 2.5 |  |  |  | |  | **H** |  | **W** |  | **W** |  |  |
| 13. | Pipe joints | 2.6 |  |  |  | |  | S |  | S |  | S |  |  |
| **Filling and Compaction** | | | | | | | | | | | | | | |
| 14. | Compaction – Embedment material | 3.1 |  |  |  | |  | S |  | S |  | S |  | Test reports |
| 15. | Compaction – General Fill | 3.2 |  |  |  | |  | S |  | S |  | S |  | Test reports |
| 16. | Compaction – Select Fill | 3.3 |  |  |  | |  | S |  | S |  | S |  | Test reports |
| 17. | Moisture Content | 3.4 |  |  |  | |  | S |  | S |  | S |  | Test reports |
| **Conformance Check** | | | | | | | | | | | | | | |
| 18. | Survey Report  **HOLD POINT** | 4.1 |  |  |  | |  | **H** |  | **W** |  | **W** |  | Survey Report |
| 19. | Acceptance and closure of non-conforming items  **HOLD POINT** | 4.2 |  |  |  | |  | **H** |  | **H** |  | **H** |  |  |

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| 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. | | | | |
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| **Symal Representative** |  | **Signature** |  | **Date** |
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| **UGL Representative** |  | **Signature** |  | **Date** |
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|  |  |  |  |  |
| **SHL Representative** |  | **Signature** |  | **Date** |
| **Comments:** | | | | |
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