| **WORK AREA:**  **Gillingham Road** | **CONTRACT NAME:**  **CON23041 Gillingham Road Bridge Replacement** | **DESCRIPTION OF ACTIVITY:**  **Installation of stormwater pipes, manholes, catchpits, and downstream defenders** | **Rev** | **Originator** | **Date** | **Approved** | **Date** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **0** | **Akash Nada** | **02/04/2025** | **GvdLinde** |  |
| **ITP No: 002** | **1** |  |  |  |  |
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| **Item No.** | **Item** | **Activity TASK** | **Acceptance Criteria** | **FREQUENCY** | **CERTIFYING DOCUMENTATION, RECORD OR CHECKSHEET** | **VERIFICATION SIGN OFFS** | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **INTERNAL VERIFICATION AUTHORITY OR RESPONSIBILITY** | **CRITICAL HOLD POINT**  **AUTHORITY** |
| **1** | **Site Preparation** | Site Clearance | Visual Inspection | Prior to trench excavation | As per Engineer’s acceptance | W | W |
| **1.1** | **Concrete Pipes and Pre-cast Structures** | Delivery of Pipes and Pre-cast structures | Visual Inspection – as per WSP T-WES00012 Section 2.3 pg. no. 262 | Upon delivery on site | Delivery Dockets | R | W |
| **1.2** | **Trench Fill Material** | Trench fill material | MDD using NZS 4402 Test 4.1.3 | One Week prior importing trench fill material | Copy of lab test report | H | H |
| **2** | **Initial Set Out** | Setting out M/H locations and Trench Alignment | As per approved drawings and design model provided | Prior to trench excavations | As per Engineer’s acceptance | H | H |
| **3** | **Trench Excavation** | Trench Excavation | Visual Inspection – As per T-WES 00011 section 3.2.4 pg. no. 251 | During and after excavation works | Checksheet | H | W |
| **3.1** | **Pipe General Bedding** | Place and Compact GAP20 Bedding or Approved, WDC EES Sheet 31 | Visual Inspection | Prior to pipe laying | Checksheet | W | W |
| **3.1.1** | **Steep Pipe – Concrete Bedding** | Cement Stabilised AP20 bedding where required as per drawing (generally for trenches with >5% slope) | Visual Inspection –  40kg Cement to 1000kg aggregate, thoroughly mixed and compacted – T-WES 00012 section 3.1.5 | Prior to pipe laying | Checksheet | H | W |
| **3.2** | **Pipe Laying** | Laying and Jointing of the pipes | Visual Inspection - Lay and joint pipes in accordance with the manufacturer’s recommendations and AS/NZS 3725. – T-WES 00012 Section 3.1.1 | During and upon completion of laying | Checksheet, As-Built information – Invert level, Gradient ±0.1% | H | W |
| **3.3** | **Pipe Embedment** | GAP65 or approved selected material compacted in 200mm layers | Clegg Hammer Test: 0-300mm DEPTH RANGE CLEGG READING NOT LESS THAN 45.  300-1500mm DEPTH RANGE CLEGG READING IS NOT LESS THAN 30.  1500mm TO TOP OF PIPE BEDDING MATERIAL CLEGG READING IS NOT LESS THAN 25.  WDC EES Sheet 31 | Upon completion of each compacted layer | Clegg Hammer Test Record Sheet – Engineer to review at least weekly | H | H |
|  |  | | Nuclear Densometer or agree an alternative method with the Engineer where a Nuclear Densometer is not appropriate for the material type.  Minimum MDD not specified. T-WES 00012 section 4.5 | Carry out one test every two layers per 50 m linear pipeline | Test Records - Engineer to review at least weekly | H | H |
| **3.4** | **Trench Fill** | Lay and compact in 200mm layers | Maximum dry density -≥95% Road, paths and pavements  ≥90% in Berm.  Carry out compaction testing using a Nuclear Densometer or agree an alternative method with the Engineer where a NDM is not appropriate for the material type. | At least two layers of trench fill for every 50m of trench. | Test Records - Engineer to review at least weekly | H | H |
| **4** | **Manhole and Catch-Pit Construction** | Pre-cast Manhole base | Visual Inspection - 75mm min. of Bedding material. | Prior installation of Manhole Base | Checksheet | R | W |
| **4.1** | **Manhole installation** | Manhole risers and components | As per drawing DRAINAGE TYPICAL DETAILS SHEET 1 | During and after installation | Checksheet | R | W |
| **4.2** |  | Catch-Pit back entry and surrounding | As per drawing DRAINAGE TYPICAL DETAILS SHEET 1 | For each Cath-Pit | Checksheet | R | W |
| **5** | **Downstream Defender** | Install and connect downstream defender | Typical Detail K – As per drawing DRAINAGE TYPICAL DETAILS SHEET 1 | For each Downstream Defender | Checksheet | R | W |
| **6** | **Wingwall** | Wingwall installation | As per drawing DRAINAGE TYPICAL DETAILS SHEET 2 | For each Wingwall installation | Checksheet | R | W |
| **7** | **Trapezoidal Swale** | Swale construction | As per Drawings and design model | Upon completion of the construction | As-built surface information | R | W |
| **8** | **Subsoil Drain** | Trench Excavation | As per drawing no. 1-14547.01 sheet no. C040 | Prior to installation of subsoil drain | QF 007 Checksheet | R | R |
| **8.1** |  | Placing filter fabric around drainage aggregate | Enginneer’s approved filter fabric | Prior to placing drainage material | Checksheet | R | R |
| **8.2** |  | Install Subsoil drain | 100m slotted subsoil drain with filter sock or approved | Prior to backfilling | Checksheet, As-built plans | R | R |
| **8.3** |  | Backfilling | 20/7 drainage metal,  Minimum 70mm below the drain  Minimum 300mm cover to subgrade improvement layer | Prior to pavement construction | Checksheet | R | R |
| **9** | **Testing** | Flush pipeline | Flush any debris | Prior testing | CCTV inspection | R | W |
| **9.1** | **Concrete pipes** | Leak Testing | Low-pressure air test, if a length fails use a hydrostatic test | Prior to final surfacing | Test record sheet | H | H |
| **9.2** | **CCTV** | CCTV Inspection of completed pipeline | Free from – Displaced joints, Ovality, Dips, Reverse grades, Debris in pipeline, particularly construction debris | Prior to final surfacing and after leak test | CCTV footage | H | R |
| **9.3** | **Manhole Testing** | Water drop test | As per T-WES 00012 section 4.7 | Prior to final surfacing | Test Record sheet | H | H |
| **10** | **As Built & Final Design Documentation** | Supply As-built Plans | Engineer to review and accept as-built Drawings | For all completed works | Engineer’s acceptance of as-built drawings | H | H |

# INSPECTION & TEST PLAN (ITP)

The ITP defines the required inspections during various stages of fabrication, construction and installation work. It is also a method of communicating these requirements to those doing the work and a verifying record that they have been carried out.

The ITP defines 2 different levels of inspection according to the following criteria:

* **Internal Verification:** This inspection or verification activity is required internally by United Civil. A Designated Internal Authority- Project Manager, Supervisor, Foreman or other authorised person is determined for the given inspection point or verification activity. Where a signature required verification is notified by signing the designated check sheet.
* **Critical Hold Points:** These are ONLY inspections required by the contract. It requires the Foreman/ Supervisor or Subcontractors Representative to notify the United Civil Project Manager that the hold point stage of inspection has been reached. Fabrication shall not proceed past this point unless the inspection has been carried out or approval to proceed is given in writing & signed by the Engineer’s Representative.

The Engineer’s Representative shall sign the Check sheet.

A Contract Hold Point is a contractual requirement. Where the Engineer’s Rep has not signed or for whatever reason cannot sign the Hold Point off the Project Manager must signify verification by the Engineer by other means such email sign off or other formal correspondence and note as such on the ITP.