| **WORK AREA:**  **Gillingham Road** | **CONTRACT NAME:**  **N23041 Gillingham Road Bridge Replacement** | **DESCRIPTION OF ACTIVITY:**  **Bridge Replacement Works** | **Rev** | **Originator** | **Date** | **Approved** | **Date** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **0** | **Akash Nada** | **10/04/2025** | **GvdLinde** |  |
| **ITP No: 009** | **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 and Excavation | General site clearance, removal of the trees | Once | Visual Inspection | R | R |
|  |  | Demolition and removal of existing bridge | Removal of existing bridge including the bridge piles from the previous bridge. Structures to be salvaged and transported to WDC Yard | Once | Visual Inspection | R | R |
| **2.** | **Initial set out** | Survey | As per IFC drawings, and design model provided | Prior to start Bridge Construction | Visual inspection | H | H |
| **3.** | **Pile Installation** | Predrilling | As required – to ensure proper foundation conditions for the pile installation | Prior to Installation of Pile | Visual Inspection  Subcontractors Documentation | H | H |
|  |  | Dry Mix Concrete Driving Plug | Placed directly from the concrete truck into pile casing, ensuring accurate quantity and proper distribution. | Prior to placing casing into the ground | Visual Inspection,  Suppliers’ documentation  Subcontractors Documentation | H | H |
|  |  | Mobilising the pile | Gently tapped to mobilise the pile by tapping the dry mix charge. | Prior to diving pile | Subcontractors Documentation | H | W |
|  |  | Driving the pile casing | Drive the pile casing down to designed depths.  Welded additional lengths of casing as per IFC Drawings and specification.  Final splice completed to ensure piles are constructed to the specified depths and length. | Prior to install reinforcement pile cage | Suppliers’ documentation  Subcontractors Documentation | H | H |
|  |  | Ultimate Geotechnical Strength Check | Hiely Formulae to estimate ultimate geotechnical strength to ensure specified value in IFC drawings. | Prior to installing reinforcement pile cage | Test record sheet | H | H |
|  |  | Install pile reinforcement cage | Pile reinforcement cage prefabricated to as per IFC drawings and specification | Prior to installing in casing | Suppliers’ documentation | H | H |
|  |  | Pre-pour inspection | Pile casing and cage installed as per IFC drawings and specification | Prior to concrete pour | Pre-pour inspection check list | H | H |
|  |  | Concrete Placement | Concrete poured at cut-off levels using concrete pump hose, lowered to the base of the pile.  Concrete poured in stages to reach required depths | During concrete placement | Visual Inspection,  Suppliers’ documentation | H | H |
|  |  | Final Inspection | Pile cage securely placed, and the concrete placement is complete | Upon completion of the concrete placement | Inspection check sheet | H | H |
|  |  | PDA Testing | At minimum 20% of driven pile, with minimum of 1 pile at each abutment shall be tested. As per site technical specification section 8.3.2 | At minimum of 72 hours after initial driving or as directed by the Engineer | Record sheet PDA test – obtain written approval from Engineer | H | H |
| **4.** | **Abutment Construction** | Abutment footprint preparation | As per IFC drawings and design model provided to enable blinding concrete works. | Prior to placing blinding concrete – Pre-pour Inspection | Pre-pour inspection checksheet | H | H |
|  |  | Place blinding concrete | 50mm thick 10MPa blinding concrete as per IFC Drawings and Specification | Prior to installing subsequent works | Suppliers Documentation | H | W |
|  |  | Survey Setout | Setout completed on blinding concrete, including offset dimensions to the abutment beams and RLs as per IFC drawings and design model provided | Prior to installing reinforcement works | Provided design survey model,  Visual inspection | H | H |
|  |  | Main abutment beam and pile caping –reinforcement install | Prefabricated reinforcement as per IFC Drawings and specification provided | Prior to installing subsequent work – as directed by the Engineer | Suppliers’ documentation,  Checksheet | H | H |
|  |  | Pile starter bars | Flange and nuts epoxied to the pile starter bars as per IFC Drawings and specification | Prior to Prior to installing subsequent work | Suppliers’ documentation,  Checksheet | H | H |
|  |  | Abutment Upstand starter bars | Positioned correctly and bars as per IFC drawings and specification | Prior to installing subsequent works | Suppliers’ documentation,  Checksheet | H | H |
|  |  | Pre-Pour inspection | Formworks within tolerance and reinforcement and other fixings according to IFC drawings and specification | Prior placing concrete | Pre-pour inspection checksheet | H | H |
|  |  | Place concrete | 40MPa concrete as per IFC Drawings,  Concrete compaction with vibrators and application of surface retarder to the construction joint at the base of the abutment upstand. | As directed by the Engineer | Suppliers’ documentation | H | W |
| **5.** | **Pre-cast Beams** | Installation of the Elastomeric bearings | Bearings and joint preparing as per IFC Drawings and specification | Prior to installing SHC beams, and as directed by the Engineer | Checksheet  Suppliers’ documentation | H | H |
|  |  | Pre-cast Single Hollow Core Beam | Pre-cast completed and cured to archive designed strength at 28 days, free from damages and cracks.  Northen beams dressed with steel pipe brackets, pipe hangers.  as per drawings and specification | As directed by the Engineer | Suppliers’ documentation | H | H |
|  |  | Install 400mm&300mm sections of pipe | Prefabricated and braced on hangers as per IFC Drawings and specification | Prior to installing beam on the position | Checksheet, Visual Inspections | H | H |
|  |  | Install SHC beams | Placed on beam locations setout on abutment beams including level check of the beam sills within tolerance level as per IFC drawings and specification | Prior installing subsequent works, and as directed by the Engineer | As-built data, Checksheet | H | H |
|  |  | Transverse Stressing Duct | Ducts fed through SHC beams, ducts taped together as per IFC drawings and specification | Prior to start grout works | Check sheet | H | H |
|  | Grout infill between SHC | Pre-grout | The sides of the beams sealed to contain grout | Prior to place onsite mixed Sika 212 grout | Pre-pour inspection checksheet | H | H |
|  |  | Grout works | Sika 212 grout mixed on site and poured as per IFC drawings and specification | As directed by the Engineer | Suppliers Documentation, Checksheet | H | H |
| **6.** | **SHC Beam Post Tensioning** | Super Strand Anchor Heads | Installed at each end of Transverse Stressing Duct | Prior installing super strands | Suppliers Documentation,  Visual Inspection | H | W |
|  |  | Super Strand Installation | The 7 super strands fed through all SHC beams at each PT locations as per IFC Drawings and specification | As directed by the Engineer | Suppliers Documentation, |  |  |
|  |  | Post Tensioning | Strands tensioned up to the design loads and locked in position with a wedge plate at the anchor heads, grouting ports are epoxied in position as per IFC Drawings and specifications | During and upon completion of post-tensioning | Subcontractor documentation,  Record sheets | H | H |
|  |  | Pre-Grout inspection | All tendon locations stressed and the epoxy at the grout ports has reached strength | Prior to grout filling | Pre-inspection checksheet | H | H |
|  |  | Pumping grout into strand ducts | Grout pumped into the ducts under pressure until its bleed out of the breather ports at the far end which are then crimped until grout bleeds out of the pumping end ensuring all air voids are removed from the duct | As directed by the Engineer | Suppliers’ documentation | H | H |
|  |  | Post-Grout | Ends of strands are trimmed and the rebates for the anchor heads are mortar filled and finished flush with the edge of the beams at all locations | Upon completion of the grout works | Visual Inspections | H | W |
| **7.** | **Abutment Headwall** | Surface preparation | The day after the abutment beam pour, Pressure blasts the construction joints to a type B roughness | Prior to installing reinforcement | Visual inspection | H | W |
|  |  | Reinforcement | Installed as per IFC Drawings including linkage bars and ducting for services accurately | Prior to placing formworks | Suppliers’ documentation | H | H |
|  |  | Pre-pour Inspection | Formwork placed with in tolerance and as per IFC Drawings and specification | Prior to placing concrete | Checksheet | H | H |
|  |  | Concrete pour | 40MPa as per site specification and IFC drawings,  Finished surface as per specification – B1 | During and upon concrete placement | Suppliers’ documentation | H | W |
| **8.** | **Walkway and service hanger** | Pre-cast walkway panels | As per IFC Drawings and Specification | As directed by the Engineer | Suppliers’ documentation | H | H |
|  |  | Installing Pre-cast panel | Positioned between the service brackets, the end in contact with the abutment headwalls are jointed with sealant, pipes are connected as per IFC Drawings and specification | As directed by the Engineer | Checksheet | H | W |
|  |  | Reinforcement and formworks | As per IFC drawings and specifications | Pre-pour inspection | Inspection checksheet | H | H |
|  |  | Concrete placement | As per IFC drawings and specification – Broom finished | As directed by the Engineer | Suppliers’ documentation | H | W |
| **9.** | **Wingwall Construction** | Reinforcement and Formwork | As per IFC Drawings and Specification | Prior to placing concrete | Checksheet | H | H |
|  |  | Pre-pour inspection | Inspected and accepted by the Engineer | Prior to placing concrete | Checksheet | H | H |
|  |  | Concrete pour | As per IFC drawings and specification | As directed by the Engineer | Suppliers’ documentation | H | W |
| **10.** | **Settlement Slab** | Subgrade prep | Trim subgrade to suit,  Bedding metal placed and compacted as required | As directed by the Engineer | Checksheet | H | W |
|  |  | Reinforcement and formworks | Installed with in tolerance as per IFC drawings and specifications | As directed by the Engineer | Checksheet | H | H |
|  |  | Pre-pour inspection | As per IFC drawings and specification | Prior to placing concrete | Pre-pour inspection checksheet | H | H |
|  |  | Placement of concrete | Concrete and grade and finish surface as per IFC drawing and specification | As directed by the Engineer | Suppliers’ documentation | H | H |
| **11.** | **As-Built Plans** | Survey – Final surfaces | As directed by the Engineer | Upon completion of the works | As-built plans | H | H |
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# 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.