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| **CLIENT:** | | **Watercare Services Limited** | | **INSPECTION AND TEST PLAN FOR:** | | | | **ITP No:** | **GAJV-ITP-00215\_3.0** |
| **CONTRACT No. #** | | **6661** | | **JOB/ITP TITLE:** | **Installation of DN2100 concrete bypass pipe** |
| **CONTRACT:** | | **Central Interceptor** | | **WORK DESCRIPTION: INSTALLATION OF DN2100 BYPASS PIPE CONNECTING CONFLUENCE CHAMBER AND THE DIVERSION CHAMBER.**  **CONTRACTOR NAME: GAJV**  **SUBCONTRACTOR/S NAME: SEIPP CONSTRUCTION** | | | | **PACKAGE No:** |  |
| **WORKPLACE NAME / ADDRESS:** | | **Mangere Pump Station** | | **CHAINAGE (if any):** | **N/A** |
| **DATE:** | | **25/07/2024** | | **WORK AREA:** | **Diversion Chamber & Confluence Chamber** |
| **ENGINEERS NAME:** | | **Kevin Rajan** | | **RELATD CEP No:** | **GAJV-CEP-00330** |
|  | |  | | **SWMS No (if any):** |  |
| **The purpose of this Inspection and Test Plan is for identifying and tracking stages of completion and product traceability during all phases of construction. ISSUED FOR CONSTRUCTION**  **Packages:** - Discrete components or work areas.  **Inspection and Test Plan:** A sequential work method statement capturing quality related requirements that provide evidence of conformance to specifications.  **Inspection Check Sheet:** A document detailing specific criteria to be checked and recorded, often developed to meet testing requirements of standards and / or technical specifications.  **Punch List / Defects List:** A list of minor rectification type tasks which need to complete to satisfy the term of the contract.  **Surveillance:** Ongoing monitoring  **Hold Point:** A notice of the event must be provided and shall not proceed with the work without the client or its representative being present unless authority to proceed has been provided by the client in writing. Signature required  **Witness Poin**t: A notice of the event must be provided. If the client representative is not present at the designated time and place, work may proceed. | | | | | | | | | |
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| **LEGEND:** | W = WITNESS POINT | | H = HOLD POINT | | S= SURVEILLANCE | GAJV = GHELLA ABERGELDIE JOINT VENTURE | S/C = SUBCONTRACTOR | | WSL = ENGINEER REPRESENTATIVE |

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| **ACTIVITY No. #** | **DESCRIPTION** | **RESPONSIBILITY** | **REQUIREMENTS / REFERENCE** | **CONFORMANCE CRITERIA** | **METHOD** | **FREQUENCY/PROCESS HELD** | **HOLD/WITNESS REQUIREMENTS** | | **RECORDS OR CHECKLISTS** |
| **TYPE** | **ATTENDANCE REQUIRED** |
| **1.0 Preliminaries:** | | | | | | | | | |
| 1.1 | Check -Drawings are IFC and current | GAJV | Ensure the latest IFC drawings are used and  available onsite | Sighting of drawings | Retain drawings | Before project execution | **H** | GAJV | DWG register with the drawing revision. |
| 1.2 | Check - CEP, SWMS, TMP and ESCP in place and signed off by personnel | GAJV | Ensure latest IFC plans are used and available onsite | Sighting of plans | Retain plans | Before project execution | **H** | GAJV | Plan register with the revision used |
| **2.0 Materials (approval):** | | | | | | | | | |
| 2.1 | Concrete Pipe DN2100 | S/C | IFC drawings 2012034.174  2012034.181  2012034.183  MS-03 | RCRRJ Class 4  Pipe free from defects and meets requirements of specification | Visual inspection | Each delivery | **MAR** | WSL GAJV | Pipe Inspection Checklist Delivery dockets  Manufacturer’s QA  Photos |
| 2.2 | Pipe Surround/Backfilling | S/C | 2012034.174 | Approved DM7/3 | Material order review | Before procurement | **MAR** | GAJV | Delivery dockets  Quarry material test results for PSD, MDD |
| 2.3 | Stabilised sand (if required to replace undercut) | S/C | 2012034.174 | Approved stabilised sand | Material order review | Before procurement | **MAR** | GAJV | Delivery dockets Quarry material test results for PSD, MDD |
| 2.4 | Flowable fill to below pipe and haunching | S/C | 2012034.174 | To be 5Mpa as per drawing | Material order review | Prior to commencement of work | **MAR** | WSL GAJV | Delivery dockets Mix design  certificate |

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| 2.5 | Underside of pipe - Wrapping layer | S/C | 2012034.174 | ABELFLEX or approved closed cell foam | Material order review | Prior to commencement of work | **MAR** | GAJV | Delivery Dockets |
| 2.6 | Subbase material | S/C | WSL GCCS – C1.4, WSL CG C2.16 2012034.174 ATCOP | GAP 65  Subbase material shall consist of clean crushed rock, all passing 65mm standard sieve in accordance with ATCOP section 16 | Material order review | Before procurement | **MAR** | GAJV | Delivery dockets  Quarry material test results for PSD, MDD |

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| **3.0 Construction:** | | | | | | | | | |
| 3.1 | Survey and set out | GAJV | Drawings 2012034.174  2012034.181  2012034.183 | Survey and set out as per design drawings. | Survey set out | Each line | **W** | GAJV | Survey request Aconex mail |
| 3.2 | Excavate Trench | S/C | Drawings 2012034.174  WSL GCCS – C2.9 | Trench excavated as per design drawing. | Visual Inspection | Ongoing | **S** | S/C | Pipe laying checklist |
| 3.3 | Trench foundation | S/C | Drawing: 2012034.174 | Subgrade at the base of the trench is to have a minimum of 30Kpa. If the minimum is not achieved the base of the trench requires undercut until 30KPa achieved. | Shear Vane | Every 15m. | **H** | GAJV | Field test results |
| **W** | WSL | Field test results |
| 3.4 | Place stabilised sand (if required) | S/C | Drawing: 2012034.174 GC C3.1.2 | Compacted to 95% of Maximum Dry Density | NDM Test | 1 Test per 230mm layer per 20m of trench length | **H** | GAJV | NDM test results |
| 3.5 | Laying pipes | S/C | Drawings 2012034.181  2012034.183  WSL GCCS – C3.9.3 | Pipes installed to flat gradient and to design alignment | Visual Inspection | Each line | **W** | GAJV | Pipe laying checklist |
| 3.6 | Wrap Install | S/C | Drawing: 2012034.174 | Installed as required on drawings and to manufacturer’s instructions | Visual Inspection | Each line | **W** | GAJV | Pipe laying checklist |
| 3.7 | Jointing pipes | S/C | Manufactures Specification CG-C18P Section 18P  CG 10.5.2 | Ensure the rubber sealing ring is installed and seated appropriately on the initial pipe groove. Deflection should not exceed 0.5º to ensure the joint is sealed  Leakage testing as per GAJV-RFI-002693 – Pipe joint testing to 24kPa, if there are no visible leaks and pressure holds or drops no less than 7kPa  in 5 seconds then acceptable. | Visual Inspection | Each joint | **H** | WSL GAJV | Pipeline checklist Test results |
| 3.8 | Placing sandbags | S/C | Drawing: 2012034.174 | Sandbags in location as required. | Visual Inspection | Each location | **S** | GAJV | Pipe laying checklist Photos |
| 3.9 | Flowable fill pour | S/C | Drawing: 2012034.174 | Sandbags in location before pour as per drawing. Flowable fill min 5MPa  300mm surrounding pipe required. | Review of results | Each pour | **W** | GAJV | Concrete delivery dockets IANZ Lab report |
| 3.10 | DM7/3 Backfill | S/C | Drawing: 2012034.174 GC C3.1.2 | Compacted to 95% of Maximum Dry Density | NDM Test | 1 Test per 230mm layer per 20m of trench length | **H** | GAJV | NDM test results |
| 3.11 | Warning Strip | S/C | Drawing: 2012034.174 WSL GCCS – C3.1 | Continuous length of cream coloured warning strip installed. Warning strip to be 100mm wide at 450mm above pipeline. The wording in black on the warning strip shall be “caution-sewer below” as per note 2 on Drawing: 2012034.174 | Visual Inspection | Entire line | **W** | S/C WSL GAJV | Pipeline checklist |

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| 3.12 | GAP65 Subbase Compaction | S/C | Drawing: 2012034.174 GC C3.1.2 | Compacted to 95% of Maximum Dry Density | NDM Test | 1 Test per 230mm layer per 20m of trench length | **H** | GAJV | NDM test results |

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| **4.0 Post Construction:** | | | | | | | | | |
| 4.1 | CCTV Inspection | S/C | WSL GCCS | On completion the line shall be CCTV inspected for defects | CCTV Inspection | Entire line | **W** | WSL GAJV | CCTV inspection form  CCTV video and report from CCTV Subcontractor |
| 4.2 | As built records | GAJV | WSL GCCS – C3.1.1 | Pipe shall be installed to the line and level required on the specific drawings. The position tolerance for pipe laying at any point along the length of the installation shall be within +/- 30mm  from the specified design. | Survey | Each line | **H** | WSL GAJV | As built |

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| **ITEM** | **QA DOCUMENT CHECKLIST** | **TICK**  **APPROPRIATE BOX** | **COMMENTS** | **ITEM** | **QA DOCUMENT CHECKLIST** | **TICK**  **APPROPRIATE BOX** | **COMMENTS** |
| 1 | Completed Inspection and Test Plan | ☐ |  | 12 | Check sheets Completed and signed | ☐ |  |
| 2 | Material Delivery Dockets (if applicable) | ☐ |  | 13 | Independent Reviewer Report | ☐ |  |
| 3 | Incoming Material Inspection Checklist | ☐ |  | 14 | Operation and Maintenance Manuals (if applicable) | ☐ |  |
| 4 | All Aconex Mails Closed-Out - Related to Lots | ☐ |  | 15 | Warranties / Guarantees (if applicable) | ☐ |  |
| 5 | Conformance Certificates (if applicable) | ☐ |  | 16 | Producer Statements | ☐ |  |
| 6 | Test Reports | ☐ |  | 17 | Compliance Statement | ☐ |  |
| 7 | Engineers Red-Line mark ups | ☐ |  | 18 | Relevant RFIs - | ☐ |  |
| 8 | As Built Survey | ☐ |  | 19 | Instructions - | ☐ |  |
| 9 | Photos | ☐ |  | 20 | Factory Acceptance Test (if applicable) | ☐ |  |
| 10 | Geotechnical Site Inspection Report (if applicable) | ☐ |  | 21 | Other - | ☐ |  |
| 11 | QA Engineer Site Inspection Report | ☐ |  | 22 | Other - | ☐ |  |

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| **CONFORMANCE / VERIFICATION STATEMENT** | | | | | | |
| This closed lot conforms in all respects with the standards and requirements specified in the Contract Documents. The lot verification records are complete, and any non-conformances have been closed out in accordance with the Projects requirements. | | | | | | |
| **Construction Lot checked by the Senior Project Engineer responsible for the works** | **PRINT NAME** | Click or tap here to enter text. | **SIGNATURE** | Shape  Description automatically generated with low confidence | **DATE** | Click or tap to enter a date. |
| **Construction Lot verified and closed by Quality Management Representative** | **PRINT NAME** | Click or tap here to enter text. | **SIGNATURE** | Shape  Description automatically generated with low confidence | **DATE** | Click or tap to enter a date. |
| **Independent Verification Review (if required) by:** | **PRINT NAME** | Click or tap here to enter text. | **SIGNATURE** | Shape  Description automatically generated with low confidence | **DATE** | Click or tap to enter a date. |