United Civil Construction

INSPECTION & TEST PLAN — KIOREROA ROAD SEWER RISING MAIN — ITP NUMBER: 4

WORK AREA:	DESCRIPTION OF ACTIVITY:	Key:					
Kioreroa Road Sewer Rising Main	Pipeline Installation and Trench Reinstatement/Backfill	P= PERFORM (Activity) R = REVIEW (Documents & Work) W = WITNESS (Activity) H = HOLD (Point for Acceptance)	1	GvdLinde	19/6/2024		
			0	GvdLinde	10/5/2024		
			Rev	Originator	Date	Approved	Date

Item No.	ITEM	ACTIVITY TASK	ACCEPTANCE CRITERIA	CERTIFING DOCUMENTATION AND FREQUENCY	Supervisor, Foreman or Subcontractor		Project Manager or Delegated Person		Engineer's Representative	
					Key	Sign / Date	Key	Sign / Date	Key	Sign / Date
1	Service Location	Potholing of Existing Services	Excavation of services to be carried out in accordance with service providers recommendations.	As required	P		W		R	
2	Route Alignment	Set Out and Mark Up	Design Approval prior to setout Mark out to be carried out prior to commencement of works – Alignment to mirror construction drawings unless alternative approval sorted and confirmed.	Surveyor to confirm alignment of new pipeline, overlay drawing to be placed over the As-built layer to ensure that design is to work (Please note GIS is not 100% - information to be clarified from potholing).	P		**R**		**H**	
		Submit Methodology for Pipelaying, Concrete Work, Jointing and Backfilling	Submit methodology as per T-WES 00013 Section 3.1.1	Prior to starting			**P**		**H**	

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3	Construction of Pipeline with Fusion Welded Joints	Butt Welding of Pipes above or below ground, all joints to be welded.	To Align with ITP2 – Pipe and Welding All welds are to be fully logged by the use of data logging equipment. All weld parameters are to be recorded for each separate weld as well as the welder, weld number, location, date and time of weld and air temperature All butt welds to be undertaken in accordance with the manufacturer's recommendations	Approved Welding procedure WMS Test Weld to be provided at commencement of the works – Refer ITP2 for Frequency	**W**		**W**		**R**	
4	New Pressure PE Sewer pipe in Open trench	Material supply	Material Acceptance by engineer prior to starting Certification from manufacturer that materials comply with the manufacturer's specification as per T-WES 00011 Section 2	Delivery Dockets,	W		**W**		**W**	
		Inspection of Trench	Engineer to inspect trench prior to pipe install and prior to backfilling.	Photos, Engineers Signoff	P		W		H	
		Construction	Installation as per WDC Engineering Specification and AS/NZS 2566.2 Location and level of invert. Compaction of bedding and Backfill, installation of PE Pipes shall comply with contract specs as per T-WES 00011 Section 3.2 Note separation as per T-WES 00013 Section 3.1.9	Photos etc as evidence, Compaction test results as per T-WES 00011 Section 4.3.1	P		R		R	

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		Construction of Thrust Block	Design Approval Prior to installation Concrete Strength to be as per design documents as per T-WES 00013 Section 3.1.12 & 3.1.13, Also refer ITP 3	Per Supply Delivery Dockets.	**P**		**R**		**H**	
		Backfilling of open trench	GAP 20 covered in layer of 200mm layers or approved alternative material. ***No mechanical compaction until the pipe is covered by at least 300mm of material*** Detector tape to be placed 200-400mm below surface. A detector tape is to be laid with the pipe. As per T-WES 00011 Section 3.3, design and WDC EES 2022 Section5 Sheet 31&32	Photos etc as evidence, Compaction test results as per T-WES 00011 Section 4.3.1	**P**		**R**		**R**	
		Service Separation	Confirm compliant as per WDC requirements, or as per design allowance barrier for tolerances less than WDC allowance, or relocate service to enable tolerance	Photos	**P**		**R**		**R**	
5	Flanges	Install flanged connections	Visual inspection, Torgue values to comply, Bolts to be sufficient length, Four-part joint wrapping system as per T-WES 00013 Section 2.6.8 and 3.1.14	Photos etc as evidence. Engineer to witness	**P**		**R**		**H**	

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6	Testing	Construction	Pressure main and manholes shall be tested using the procedure as given in Section 5 of the WDC EES and T-WES 00013 Section 4.5. Provide WMS for Testing Procedure	Testing Data Sheets	**P**		**W**		**H**	
7	Valves	Materials	As per T-WES 00013 Section 2.5.4 and 2.5.5 Approved by engineer	Approval from engineer prior to procurement			**P**		**R**	
		Installation	Flange connection s as per T-WES 00011 Section 3.1.14	Engineer to witness first flange	**P**		**R**		**H**	
8	Pavements	Prior to backfill/ Reinstatement	MDD, Compaction curves to be done on GAP65 and TNZ40 with 1.5% lime submitted to engineer for approval as per T-WES 00011 Section 4.3	Samples from the Quarry, and test results from lab			**R**		**R**	
		Backfill Subbase/ Embedment Zone	Reinstatement of road shall be Nuke tested at 20m centres at the centre of pavements on completion of the pavement surface preparation. Compact to 95% of MDD at each layer. NZTA M/4, B/2 and WDC EES 2022, As per T-WES 00013 Section 2.9	Nuke results recorded. Material Dockets	**P**		**R**		**R**	

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		Backfill Basecourse	Reinstatement of road shall be Nuke tested at 50m centres at the centre of pavements on completion of the pavement surface preparation. Compact to 98% of MDD NZTA M/4, B/2, Material as per T-WES 00011 Section 2.3 and NZTA M/4	Material Test Results as per T-WES 00011 Section 2.3 Nuke results recorded Material Dockets	**P**		**R**		**R**	
9	Road Seal	Pre seal Inspection	As per T-WES 00011 Section 3.4.4 Mosaic appearance, no ramps along edge,	Photos, Test results	**W**		**W**		**H**	
		Reinstate Chipseal/AC	As per NZTA P/3 or NZTA M/10, and T-WES 00011 Sections 3.4.7 & 3.4.8	Road String Sheets QA from supplier/subcontractor. Material Dockets	**P**		**R**		**R**	
10	Commissioning	Cutover to new lines	As per T-WES 00013 Section 5 Submit Cutover methodology Duration and Timing with asset owner	Approval of Cutover methodology Staging approval by engineer and client	**P**		**R**		**R**	
11	Reinstate Footpath, Driveways and Berms	Footpaths	As per T-WES 00011 Section 3.4.10 and per WDC EES Section 3.3.7.3 Min 1.2m section replacement or 300mm wider than trench 20Mpa concrete as per WDC EES Section 3.3.7.3 U5 Finish Light Broom	Material Dockets Photos	**P**		**R**		**R**	

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		Driveways	As per T-WES 00011 Section 3.4.12 and per WDC EES Section 3.3.7.3 To match existing 30Mpa Concrete as per WDC EES 2022 Section 3.3.7.3	Material dockets Photos Prepour inspection	**P**		**R**		**H**	
		Berms	As per WES 00011 Section 3.4.13 150mm topsoil Apply grass seed	Photos Material Dockets	**P**		**R**		**R**	
12	As Built Records & Asset Register	Compile all Quality Documentation in accordance with the Particular Specification	Particular Specification As Built Drawings: 1 set electronic pdf format; 1 set of hard copy A3 plans and CAD. Drawings to comply with WDC standards and be certified by the UCCL Quality Manager An electronic copy of the As-builts shall be submitted prior to the Engineer prior to issue of the PC Certificate The Contractor shall complete an Asset Register containing the following details for each new or altered asset; • Type, • Manufacturer, • Model, • Serial Number, • Date of Manufacture, • Date of Installation, • Expected Life, • Co-Ordinates, and • Cost.	As Built Drawings, Asset Information Schedule,	**P**		**R**		**H**	

INSPECTION & TEST PLAN (ITP)

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

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

- **Perform (P)** The person(s) performing the work inspects his/her own work and the Foreman/Supervisor or Subcontractors Representative is to verify/check the work as correct. The Foreman/Supervisor or Subcontractors Representative is required to sign the Inspection & Test Checklist.
- **Review (R) – Documents** When applied to documents this can indicate review & approval before fabrication commences e.g. weld procedures or after completion e.g. QC Package.
- **Review (R) –Work Performed** Fabrication may proceed past the points indicated on the ITP. This type of inspection performed on a random basis. If corrective action is necessary, the frequency of inspections may be increased.
- **Witness (W)** This type of inspection is performed when critical activities are undertaken & verification of work done is required by a third party, or internally by a supervisor or QA Personnel. It is the responsibility of the Foreman/Supervisor or Subcontractors Representative to notify whoever is identified as the Witness initiator that the (W) stage of inspection has been reached.
- **Hold (H)** This type of inspection requires the Foreman/ Supervisor or Subcontractors Representative to notify the United Civil Project Manager that the (H) 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.

NOTE REGARDING INSPECTION AUTHORITIES NOT SIGNING OFF WITNESS OR HOLD POINTS

On occasion there are situations where the required Inspection Authority (normally the Engineer or Contractor's Representative) at the witness or hold points has not for whatever reason signed the required documentation such ITP or Check Sheet where the given verifications points are clearly and evidently completed to the required standard.

The Inspection Authority normally signifies verification by other means such as email sign off or other formal correspondence.

Where this occurs, in lieu of a signature, a note to this effect shall be made on the relevant document by the Project Manager and reference to the said correspondence.

The correspondence shall be kept on the company file for the project concerned.