Inspection and Test Plan

ITP No: HA0423- CIV- 0005 - 01

Client: AIAL	Subcontractor: TBC	Work Area: Civils – HOSR and SCH
Project Name: Domestic Jet Terminal	Job No: HA0423	Subcontractor Representative: TBC

1. ITP Element: Stormwater

2. Revision Records

Rev No.	Revision Description	Name of Author	Authorised by:	Date
A	For Review	Matt Cheyne	Matt Cheyne	29 May 2025
1	Mott Mac-CAN-000814 – no changes			3 June 2025

3. Relevant Documents

Doc No.	Specification/ Drwgs/ Standards	Additional Info	Document No.	Specification/ Drwgs/ Standards	Additional Info
1	DP001-MMD-SPC-CV-Z-Z-0001	Rev 01	6	DP001-MMD-DRW-SW-F-Z-3270 - 3273	Rev 02
2	Watercare Civil Construction Standard		7	DP001-MMD-DRW-SW-G-Z-3200 - 3202	Rev 01
3	DP001-MMD-DRW-SW-B-Z-3051 - 3064	Rev 02	8	DP001-MMD-DRW-SW-F-Z-3210 - 3212	Rev 01
4	DP001-MMD-DRW-SW-D-Z-3100 - 3110	Rev 02	9		
5	DP001-MMD-DRW-SW-F-Z-3240 - 3242	Rev 01	10		

Inspection and Test Plan

HAWKINS

4. Process

No.	Description Inspection / test	Frequency	Spec/standard	Acceptance Criteria	Measuring Devices	Reporting Format	Inspected by*			Hold Points Sign off	*Remarks*
							HCL	SC	Consult		
1	**Material Compliance**										
1.1	**Fill Materials**										
1.1.1	Bedding material GAP 20 for Concrete Pipes PAP 7 for PE pipes	Per Batch	CIV Spec - S9.3.11 AS/NZS 3725	Accept/ Reject	N/A	Dockets / Material Data Sheets	R	SUB	R	Hold Point	
1.1.1	Backfill Material GAP65 or TNZ M/4 AP40	Per Batch	CIV Spec - S9.3.12 CIV Spec - S4.4.5	Accept / Reject	N/A	Dockets / Material Data Sheets	R	SUB	R	Hold Point	
1.2	**Manholes + Pipes**										
1.2.1	Pre-Cast Manholes	Each Unit	CIV Spec - S9.3.7	Dockets/ Visual Checks	N/A	Dockets / Material Data	R	SUB	R	Hold Point	
1.2.2	Concrete Pipes: 375Ø RCRRJ Class 4 300Ø RCRRJ Class 4 225Ø RCRRJ Class 4	Each Pipe	CIV Spec - S9.3.1 DP001-MMD-DRW-SW-D-Z-3100 to 3110	Dockets/ Visual Checks	N/A	Dockets / Technical Data Sheets	R	SUB	R	Hold Point	
1.2.3	PE Pipes 280Ø ODPE 100 PN16	Each Pipe	CIV Spec - 10.3.2 DP001-MMD-DRW-SW-B-Z-3051 to 3052	Dockets/ Visual Checks	N/A	Dockets / Technical Data Sheets	R	SUB	R	Hold Point	Pipe colour tbc
1.2.4	Access covers and frames Landside: 240 kN Class D Airside: 900 kN Class G	Each unit	CIV Spec - S9.3.8	Shop drawings, Dockets/ Visual Checks	N/A	Dockets / Technical Data Sheets	R	SUB	R	Hold Point	
1.3	**Concrete**										
1.3.1	Insitu Concrete Mix Design	Each structure	CIV Spec - S13.3.1.2	Accept / Reject	N/A	Design Mix	R	SUB	R	Hold point	
1.4	**Reinforcement**										

Inspection and Test Plan

1.4.1	In-situ Reinforcement	Each Structure	CIV Spec - S14.3.1	Accept/Reject	N/A	Dockets/ Technical Data Sheets	R	SUB	R		
1.5	**Waterproofing**										
1.5.1	Pipe & Pit Waterproofing – Hydrotite CJ 0725 or Similar	Each Pipe and Structure	DP001-MMD-DRW-SW-F-Z-3211 Rev 1	Accept/Reject	N/A	Dockets/ Technical Data Sheets					
2	**Construction**										
2.1	**Pre-Condition Assessments**										
2.1.1	Existing pipes / manholes to be removed or retained	Each pipe	CIV Spec - S9.4.1	Removed and disposed OR sealed and capped off	N/A	Photos / Asbuilts	I	SUB	R	RFI if any found that are not expected	Survey on site/ asbuilts review capped off any found
2.1.2	Survey Setout Pipe alignments, Position, Manholes Position and Heights	Each Manhole	N/A	Survey Setout records and Setout pegs	GPS, Total Station	Setout CSV file, Photos/Visual					
2.2	**Pipeline Construction**										
2.2.1	Excavation Extents	Each element installed	CIV Spec - S9.4.2 CIV Spec - S4.5.9 (earthworks section)	-20mm to +0mm o	Rotating level and GPS	N/A	M				Watercare Civil Construction Standard C2 referenced
2.2.2	Drainage manholes/ pits subgrade testing	Drainage manholes and pits: 2 tests at the base of excavation	CIV Spec - S4.6.2.2 (earthworks section)	Bearing Capacity 100kpa Shear Vane tests at 0.5m below the base and 1.0m below the base or Scala Penetrometer tests to 1.0m below the base	Shear Vane Test or Scala Test	Photos, Excel & pdf	M	SUB	W		If ground failing, Undercut 400mm and fill with 5Mpa flowable fill

Inspection and Test Plan

2.2.3	Pipe Trench subgrade testing	Each trench at every 5m	TBC (Email from Dana – MM)	Minimum CBR 3%	Scala Test	Excel & pdf	M	SUB	R	Witness point	If failing Undercutting required. Engineer to confirm the Undercut details
2.2.4	Bedding, surround	Per installation	As per drwgs min/ max fill CIV Spec - S9.4.3 DP001-MMD-DRW-SW-F-Z-3270 Rev 2 DP001-MMD-DRW-SW-F-Z-5031 Rev 1	0mm / +3mm	Rotating level / tape / staff	Photos, QVC	M	*			PAP7 for PE & PVC GAP 20 For Concrete Pipes
2.2.5	Pipe installation, Connection and jointing	Each pipe	CIV Spec - S9.4.4 CIV Spec - S9.4.9 Watercare General Construction Standards Section 9-C3 DP001-MMD-DRW-SW-F-Z-3270 Rev 2 DP001-MMD-DRW-SW-F-Z-5031 Rev 1	Position tolerance +/- 10mm Level Tolerance +/-5mm Pipe grade as per design	Observation	QVC, Long section Check sheets, As-Builts	I			Witness Point	Caps to be used if lines not complete, Chases dug out for belled socket joints Rubber seals
2.2.6	Pipe Cover and Backfilling	Each Pipe	CIV Spec - S4.4.4 Table 4.3 (Earthworks Section) DP001-MMD-DRW-SW-F-Z-3270 DP001-MMD-DRW-SW-F-Z-5031 Rev 1	CIV > 24 Clegg Test corelated to an NDM	Clegg Hammer	Photos, QVC, Clegg Sheets	M	SUB		Witness Point	Engineer to inspect before backfilling
2.2.7	Pipe Testing Joint Testing for PE Pressure and Leakage test	From MH to MH	CIV Spec - 10.5.3 Watercare General construction Standard 10.3 and 10.5	Low Pressure Air Test or Hydrostatic Test	Air test system	Photos, Videos				Witness Point	*Final detail to be confirmed with updated spec*
2.3	**Manholes and structures installation**										

Inspection and Test Plan

2.3.1	Pre- Cast Manholes	Each Unit	CIV Spec - S9.4.6 Watercare General Civil Construction Standard 9C.4	Position tolerances +/- 10mm Level Tolerance -0mm to + 3mm. Manufacturers installation guidelines	As-Builts	Photos					
2.3.2	Mass Concrete Stormwater Manholes (Thickening)	Each Unit	CIV Spec - S13.4.3.2 DP001-MMD-DRW-SW-F-Z-3211	20MPa concrete	As-Builts	Photos					Refer for Table 2 for dimensions
2.3.3	Insitu Manholes	Each Unit	CIV Spec - S13.3.1.2 Watercare Standard Section C4. Concrete	Position tolerances +/- 10mm Level Tolerance -0mm to + 3mm	As-Builts	Photos, QA check sheets					
2.3.4	Trench Excavation	Each Unit	CIV Spec - S13.4.1	Scala test Min 3% CBR or Min Bearing capacity 100kPa	Shear Vane/Scala test	Photos, test Results PDF	R	SUB	R	Witness point	
2.3.5	Formwork	Each unit	CIV Spec - S13.4.2	Shop drawings,	N/A	Photos, QC check Sheet, Engineer Inspection	M	SUB	I	Witness point	
2.3.6	Reinforcing Steel	Each Unit	CIV Spec - S14.4.2 CIV Spec - S14.4.8 CIV Spec - S14.4.11 CIV Spec - S13.5.1 DP001-MMD-DRW-SW-F-Z-3210	Plans and Shop drwaings	N/A	Photos, QC check Sheet, Engineer Inspection				Hold Point	Engineer to inspect before concreting

Inspection and Test Plan

2.3.7	Pipe Connection to Manholes	Each Unit	CIV Spec - S10.4.5 DP001-MMD-DRW-WW-F-Z-3203 Rev 2 DP001-MMD-DRW-SW-F-Z-5034 Watercare Standards WW11	Plans and Shop drawings	N/A	Photos, QVC					For HDPE pipe connection refer to WW11 drawing
2.3.8	Backfilling	Each Unit	CIV Spec - S13.4.4 Table 4.3 (Earthworks Section)	CIV > 24 Clegg Test corelated to an NDM	Clegg Hammer	Photos, QVC, Clegg Sheets	M	M		Witness Point	Engineer to inspect before backfilling
2.3.9	Benching	Each Unit	DP001-MMD-DRW-F-Z-3200	Material Dockets	N/A	Drainage QVC. Photos					Benching Rendered to Min 1 in 12 grade
2.3.10	Manhole Throat, Lid	Each Unit	WaterCare Standard WW6 and WW 7 DP001-MMD-DRW-SW-F-Z-3210 DP001-MMD-DRW-SW-F-Z-3211	Materials Dockets, Shop Drawings	N/A	QVC, Photos					Reference to Watercare General Construction drawings
3	**Post Construction**										
3.1	**As-Builts**										
3.1.1	As built Works	Each pipe	CIV Spec - S9.4.10	Position tolerance +/- 10mm Level Tolerance +/- 5m	Surveyor Equipment, Total Station	Certified As-built PDF and DWG file	R	Sub	R		
3.2	**Pipeline Condition**										
3.2.1	CCTV Survey	Each new pipe and Manholes	CIV Spec - S9.5.2.4	Accept / Reject	CCTV	Video and Report	R	Sub	R	Hold point	Shall be carried out prior to final pavement surfacing for new and remaining pipes

Inspection and Test Plan

5 Document Deliverables *(The documents listed below shall be completed and compiled during the course of the construction)*

Results of Compactions	EPD Certificate if applicable
Material Certificates	
QC records	
As Built	
CCTV	

6. Distribution Records

Name	Position	Company	Date
TBA		MMD	
TBA		BECA	
TBA		AIAL	

- Inspect (I) – To visually examine or measure an item or contracted work operation to verify its conformance to predetermined quality requirements
- Review (R) – To examine any form of documentation to establish its acceptability against specified requirements
- Surveillance (S) – To observe in-process activities to the degree necessary to be assured that they comply with the established criteria
- Test (T) – To subject a component, structure, or system to a controlled set of physical, chemical, environmental or operational conditions to determine or verify its capability to meet specified requirements
- Witness (W) – To watch over, observe or visually examine a specific work operation or test performed by others under Contractor supervision
- Monitor (M) – General oversight of work in progress with no need to document formally.
- Submission (Sub) – Submission of a document

EFC- Eastern Forecourt
HOSR- Head of Stand Road
SCH – Super Cargo Highway