Fulton Hogan	**Inspection and Test Plan – Subsurface Drainage**	**Doc ID:** FH-ZU2-QU-ITP006 **Rev:** 2

Client: Melbourne Airport (APAM)	**Contract No:** CP14038-01	**Prepared By:** John Kakoliris
Project: Taxiway Zulu 2.0 Project	**Reviewed By:** Cristin Swar	**Date:** 11/07/2024
Construction Process: Installation of Subsoil Drainage	**Approved By:** Jordan Nicolaou	**Date:** 11/07/2024
Specifications: Taxiway Zulu 2.0 Program – Works Specification ZULU-BECA-SPC-00002[C03]		
Structure / Component: Subsoil Drainage		

Lot No:	Lot Details:	Lot size/Quantity:	Date:

Item No.	Task/Activity Description	Inspection/Test					HP/ WP/ AP/ IP/ TP/ SCP	Responsibility Project Engineer Superintendent Surveyor Foreman	Checked by:			
		Frequency	Acceptance Criteria	Reference Documents	Inspection/ Test Method	Record of conformity			Beca	Fulton Hogan	Other	Date
1.0	**Preliminary Activities**											
1.1	Check for correct documentation	Prior to commencing activity	Ensure that all employees and subcontractors are: • using the correct and complete set of drawings. • all drawings are the latest revision.	IFC Drawings	Document Review	This ITP Signed	HP*	Project / Site Engineer				
1.2	Implementation of all measures and controls	Prior to commencing activity	All necessary measures and controls are being implemented, that is: CEMP, TMP, SWMS & WP.	CEMP, TMP, SWMS & WP	Verify	Site and Office Inspection	HP*	Project/ Site Engineer/ Supervisor				
1.3	Excavation Permit	Prior to commencing activity	Excavation Permit issued by APAM obtained prior to any excavation on site.	Approved Permits	Verify	Proof of permit & ITP signed	HP*	Project/ Site Engineer				
2.0	**Subsoil Materials**											
2.1	Subsoil Drainage Pipes	Prior to commencing work	**Pavement Subsoils**: • 100mm Dia slotted with filter fabric (sock) CL1000 SN20. **Subsoil Collector Pipes:** • AGL Carrier Pipe: 80mm Dia PN12 uPVC Non-Perforated Pipe.	Cl.16.5.3, Cl.16.5.4 & IFC Drawings	Verify	Order Inspection Checklist	IP	Project/ Site Engineer				

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			• SSD Carrier Pipe: 150mm Dia PN12 uPVC Non-Perforated Pipe.									
2.2	Bedding and Backfill	Prior to commencing work	**Subsoil Drain Pipes Under Pavement** • Holcim's 5mm Moriac Sand or approved equivalent. **Subsoil Collector Pipes – Under Pavement** • Approved 5MPa lean mix. **Subsoil Collector Pipes In Grass** • Holcim's 5mm Moriac Sand or approved equivalent. • Excavated Soil	IFC Drawings & VicRoads Section 702	Verify	Visual Inspection & Delivery Docket	IP	Project/ Site Engineer				
2.3	Geotextile Fabric	Prior to commencing work	Non-woven type complying with the requirements of VicRoads for first stage filter or approved otherwise.	Cl.16.5.8 & VicRoads Section 702	Verify	Visual Inspection & Delivery Docket	IP	Project/ Site Engineer				
3.0	**Excavation and Installation**											
3.1	Trench Excavation	Each Lot	Trenches shall be excavated to the minimum depths, widths and batter slopes as shown on the drawings. **Minimum Trench Widths:**	Cl.16.8.1 & IFC Drawings	Verify	This ITP Signed	**HP**	Project/ Site Engineer Beca				

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			Subsoil Drain Pipes • 300mm total width for the subsoil drain pipe (DN100). **Subsoil Collector Pipes** • Horizontal clearance from the outside of the pipe to the wall of the trench to be minimum of 150mm for all collector pipes (DN80 & DN150 both under pavement and in grassed areas). Excavated material disposed per approved CEMP. Completed excavation works shall constitute a **Hold Point.**									
3.2	Geotextile Placement	Each Lot	Geotextiles in trench drains shall be placed to conform loosely to the shape of the trenches. Site trial to be undertaken to evaluate the proposed construction process and compaction method, **Hold Point**.	Cl.16.9.4.2, Cl.16.9.4.5 & IFC Drawings	Visual Inspection	This ITP Signed	**HP**	Project/ Site Engineer Beca				

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3.3	Bedding	Each Lot	**Bedding for Subsoil Drain Pipes Under Pavement and Subsoil Collector Pipes in Grass** • Bedding of granular filter material or approved equivalent: ○ 100mm for subsoil drain pipes. ○ 75mm for subsoil collector pipes • Filter material shall be placed and compacted with minimum disturbance to pipes and in layers no greater than 200mm uncompacted or as approved otherwise.	Cl.16.9.2 & IFC Drawings	Visual Inspection	This ITP Signed	IP	Project/ Site Engineer				
3.4	Laying and Jointing of Pipes	Each Lot	Pipes laid at the depths and lines indicated on the drawings. Where grades are not specified, the bottom of the trenches shall be trimmed to provide no less than 0.5% longitudinal fall.	Cl.16.9.2 & VicRoads Section 702.03, 702.09	Visual Inspection	This ITP Signed	IP	Project/ Site Engineer				
3.5	Backfill	Each Lot	**Backfill for Subsoil Drain Pipe (ø100mm pipe)** • Granular filter material or approved equivalent backfill is	Cl.16.9.2, IFC Drawings & Tender	Visual Inspection	This ITP Signed	Project/ Site Engineer					

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			to be placed to the underside of the CTB layer. **Backfill for Subsoil Collector pipe ø150mm Under Pavement** • 5MPa lean mix backfill is to be placed to a minimum of 150mm above the pipe crown to underside of pavement formation. • Backfill to be completed in two stages to avoid pipe floatation. **Backfill for Subsoil Collector pipe ø150mm In Grassed Areas** • Granular filter material or approved equivalent is to be placed to a minimum of 150mm above the pipe crown. • Excavated soil recompacted in layers not exceeding 200mm loose thickness to underside of topsoil. **Backfill for Subsoil Collector pipe ø80mm** • 5MPa lean mix backfill to be placed to top of 150mm FCR subbase layer • Backfill to be completed in two stages to avoid pipe floatation.	Clarification #38								

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3.6	Geotextile Protection	Each Lot	Geotextile must fully envelope the backfill material in the trench with a minimum 150mm lap. Prior to placement of next layer of pavement material, inspection to be undertaken to check if the geotextile is correctly overlapped and free from punctures or tears and ensure it is pinned down to prevent movement and the filter material becoming contaminated. Should these issues occur, they must be rectified prior to placing the next fill material. This shall constitute a **Hold Point.**	Cl.16.9.4.2, Cl.16.9.4.3 & Aconex FHPL-GCOR-006263 & IFC Drawings	Visual Inspection	This ITP Signed	**HP**	Project/ Site Engineer Beca				
3.7	Subsoil Drain Outlet	Each Lot	Subsoil outlet point to be located at a drainage pit, pipe end wall or outlet in a fill batter or drain. All subsoil drain outlets shall be fitted with Vermin Guards.	IFC Drawings	Verify	This ITP Signed	IP	Project/ Site Engineer				
3.8	Flush out Risers	As applicable	Cleanouts shall be located at the heads of all subsoil drains and as specified on the Drawings.	Cl.16.9.2 & IFC Drawings	Visual Inspection	This ITP Signed	IP	Project/ Site Engineer				
4.0	**Post Construction**											

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4.1	Flushing Test	Each Lot	Flushing test to be carried out for subsoil pipes to remove material that has entered the pipes during construction and to ensure that the drainage line is free from obstruction. This constitutes a Witness Point.	Tender Clarification #33	Visual Inspection	This ITP Signed	WP	Project/ Site Engineer				
4.2	Records	Each Lot	Levels and alignment recorded in as built documentation.	As built Data	Verify	Aconex Correspondence / Asbuilts	SCP	Project/ Site Engineer				

Final Inspection
The signature below verifies that this ITP has been completed in accordance with the Fulton Hogan's Quality system Procedures and verifies lot compliance with specifications.

Print Name: **Position:** **Signature:** **Date:** / /

Legend:

HP	Hold Point	Work shall not proceed past the HP until released by the Superintendent	**IP**	Inspection point	Formal Inspection to be done and recorded
HP*	Fulton Hogan Hold Point	Work shall not proceed past the HP* until released by Fulton Hogan	**TP**	Test Point	Product compliance test to be undertaken and recorded/reported
WP	Witness Point	An inspection which must be witnessed by the Superintendent	**SCP**	Survey conformance point	A qualified surveyor to check product/section/structure and report
AP	Approval Point	Written or verbal approval given by the Superintendent			

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