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|  | **Inspection and Test Plan – Precast Drainage Structures** | | | | **Doc ID:** FH-ZU2- QU-ITP007 | |
| **Client:** Melbourne Airport (APAM) | | **Contract No:** CP14038-01 | | **Prepared By:** John Kakoliris | | |
| **Project:** Taxiway Zulu Project 2.0 | | | **Reviewed By:** Cristin Swar | | | **Date:** 22/04/2024 |
| **Construction Process:** | | | **Approved By:** Jordan Nicolaou | | | **Date:** 29/04/2024 |
| **Specifications:** Taxiway Zulu 2.0 Program – Works Specification ZULU-BECA-SPC-00002[C03] | | | | | | |
| **Structure / Component:** Precast Drainage Structures | | | | | | |

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

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| **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** | **Preliminaries** | | | | | | | | | | | |
| 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 | Visual  Inspection | 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** | **Material Approvals** | | | | | | | | | | | |
| 2.1 | Precast Structures | Prior to commencing activity | Details of the proposed precast drainage pits, headwalls, and culverts to be as specified on the IFC Drawings.  Approval of the shop drawings constitutes a **Hold Point.** | Cl16.6.1 &  Manufactu rer’s document s | Document Review | Aconex Correspond ence | **HP** | Project/ Site  Engineer |  |  |  |  |

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|  |  |  | * Outline of sampling and test program |  |  |  |  |  |  |  |  |  |
| 2.2 | Access Cover and Grates | Prior to commencing activity | All Pit covers to conform to AS 3996 and the applicable load class to be as noted on the Drawings.  For all drainage pits, pit lids are to be Class D. | Cl16.5.7.1 & IFC  Drawings | Verify | This ITP Signed | HP\* | Project/ Site  Engineer |  |  |  |  |
| 2.3 | Box Culverts Bedding, Side, Overlay and Backfill Zone Materials. | Prior to commencing activity | Materials are to be compliant with the requirements detailed in Cl.16.5.6.  Material submission approval. | Cl16.5.6 & 16.6.2.2 | Document Review | Aconex Correspond ence | **HP** | Project/ Site  Engineer  Beca |  |  |  |  |
| 2.4 | Blinding for Drainage Pits and Headwalls | Prior to commencing activity | Approved bedding material as per IFC Drawings. | IFC  Drawings | Document Review | Aconex Correspond ence | HP\* | Project/ Site  Engineer |  |  |  |  |
| 2.5 | Geotextile Fabric | Prior to commencing work | Non-woven type complying with the requirements of VicRoads for first stage filter. | Cl.16.5.8 &  VicRoads Section 702 | Verify | Visual Inspection & Delivery Docket | IP | Project/ Site  Engineer |  |  |  |  |
| **3.0** | **Material Receival** | | | | | | | | | | | |
| 3.1 | Precast Structure Delivery | Each Lot | Ensure each precast component is inspected upon arrival ensuring:   * Dimensions are as shown on manufacturer drawings. | Cl16.6.1 & IFC  Drawings | Visual Inspection | Order Acceptance Form | HP\* | Project/ Site  Engineer |  |  |  |  |

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|  |  |  | * All blockouts in correct positions and to dimensions. * No damage to any precast structure component to the satisfaction of FH Engineer * No modifications to the pits are to be made without written approval from manufacturer. * Manufacturer’s conformance report |  |  |  |  |  |  |  |  |  |
| **4.0** | **Drainage Pit, Headwall and Culvert Installation** | | | | | | | | | | | |
| 4.1 | Survey Setout | Prior to construction and each lot | Set out the drainage structures as shown on the Drawings to identify the locations, lengths and levels:   * All pits, and inlet and outlet structures. * Ends of wing walls and headwalls. * At outlets and inlets of box culvert structures.   Setout of each drainage system to constitute a **Hold Point**. | Cl16.7.1 | Survey | This ITP Signed | **HP** | Project/ Site  Engineer  Beca |  |  |  |  |
| 4.2 | Excavation | Each Lot | Excavation to be performed to the minimum depths, widths and batter slopes as shown on the Drawings, regardless of the type of material. | Cl16.8 & Cl 16.6.2.2 | Verify | This ITP Signed | **HP** | Project/ Site  Engineer  Beca |  |  |  |  |

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|  |  |  | Inspection of completed excavation works to constitute a **Hold Point.**  **Pits:**  The shape of the excavation to be as required and the size sufficient to enable construction of the structure.  **Box Culverts:**  The width of trench to be not less than the exterior width of the culvert plus 400mm, and not greater than that required for satisfactory backfilling. |  |  |  |  |  |  |  |  |  |
| 4.3 | Confirm Ground Conditions | Each Structure | 1 x DCP test to be undertaken per drainage structure to confirm ground conditions.  Contractor to notify the Contract Administrator of any area of the foundation with inadequate material to support the proposed drainage structure. Inadequate material is deemed to have a bearing pressure less than 130kPa, equivalent to 4 DCP  blows per 100mm, as per note 4 | Cl16.8.2 &  Tender Clarification #38 | Site Inspection | DCP, Test Results | TP | Project/ Site  Engineer |  |  |  |  |

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| **Frequency** | **Acceptance Criteria** | **Reference Documents** | **Inspection/ Test Method** | **Record of conformity** | **Beca** | **Fulton Hogan** | **Other** | **Date** |
|  |  |  | on drawing ZULU-BECA-012- DWG-07102.  Inadequate foundation material is to be replaced with a layer of coarse crushed aggregate compacted to 95% relative standard compaction to AS1289 Section 5.5.1 over a geotextile Bidim A29 or approved equivalent. |  |  |  |  |  |  |  |  |  |
| 4.4 | Blinding for Drainage Pits and Headwalls | Each Lot | Blinding to be installed as per the depths and widths shown on the Drawings.  Pits: 50mm Crushed Rock bedding  Headwalls: 100mm 15MPa Concrete blinding and 600x150mm apron cut off wall | IFC  Drawings & VicRoads SD | Verify and Visual Inspection | Delivery Docket & This ITP Signed | HP\* | Project/ Site  Engineer |  |  |  |  |
| 4.5 | Bedding for Box Culverts | Each Lot | Bedding material to comprise of approved select fill and to be placed for the full width of the trench.  Upon completion, the bedding is to provide a uniform firm foundation with the top surface of the bedding shaped to the details shown on the drawings. This to constitute a **Witness Point.** | CL16.5.6. 1 | Verify and Visual Inspection | Delivery Docket & This ITP Signed | WP | Project/ Site Engineer Beca |  |  |  |  |

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| 4.6 | Positioning of Precast Structures | Each Lot | Precast structures installed as per survey set out points marked on blinding / bedding layer | Cl.16.8.1 & IFC  Drawings | Verify | This ITP Signed | IP | Project/ Site  Engineer |  |  |  |  |
| 4.7 | Backfill Materials for Box Culverts | Each Lot | **Side Zone, Overlay Zone and Backfill Zone Subject to Vehicle Loads**   * Approved Select fill material. * Completed in layers with maximum thickness of Cl200mm loose material.   **Overlay and Backfill Zone – Not Subject to Vehicle Loads**   * Ordinary fill material compliant with Cl.16.5.6.3 of Beca’s specification | Cl.16.5.6 & IFC  Drawings | Verify and Site Inspection | This ITP Signed | IP | Project/ Site  Engineer |  |  |  |  |
| 4.8 | Compaction Requirements (Box Culvert) | 1 test per lot.  *“1 test per layer of bedding for bedding materials and every 2nd layer for side, overlay and backfill zone materials.*” | **Bed Zone –** Minimum 90% SMDD  **Side Zone Not Subject to Vehicle Loads –** Minimum RD of 95% SMDD  **Side Zone Subject to Vehicle Loads –** Minimum of 95% SMDD  **Overlay and Backfill Zone Not Subject to Vehicle Loads –** Minimum 90% SMDD | Cl.16.5.6.  1 (b) (iv) | Site Inspection | Test Records | TP | Project/ Site  Engineer |  |  |  |  |

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|  |  |  | **Overlay and Backfill Zone Subject to Vehicle Loads –** Minimum 95% SMDD |  |  |  |  |  |  |  |  |  |

**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:**

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**Legend:**

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| **HP** | Hold Point | Work to 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 to 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 |  | | |

**Notes**