Fulton Hogan	Inspection and Test Plan - Control and Supervision of the Works	FHC-ITP-009 Revision : 3 Date : 12/07/2022

Client:	**MRPA**	**Construction Process:**	Prepared by:	Reviewed by :	Approved by :
Project:	**Tarneit Railway Station Carpark**	***Culvert***	Name: **Martin Syawish**	Name: **Patrick Fagan**	Name: **Shaun Kent**
Job No:	**7418000**	**Specifications:** VicRoads Specification Section 701, 705, 626 and Drawings	Signed :	Signed :	Signed :
		Structure / Component: Drainage	Date : 12/07/2022	Date : 12/07/2022	Date : 12/07/2022
		Location: Tarneit Railway Station			

Lot No:	**Lot Details:**	**Lot Size/ Quantity:**

Item No.	Task/Activity Description	Inspection / Controls and Verification Detail					HP/ WP/ AP/ IP/ TP/ SCP	Responsibility Project Engineer Site Engineer Superintendent Surveyor Foreman	Checked by:			
		Frequency	Acceptance Criteria	Reference Documents	Inspection / Test Method	Record of conformity			Client	Fulton Hogan	FH's Sub-contractor	Date
1	**Preliminary Works**											
1.1	Check for correct documentation	Prior to commencing any activity	Ensure that all employees and subcontractors are: - using the correct and complete set of drawings - all drawings are the latest revision	Drawings and drawing registers	Visual inspection	This ITP signed off	**HP***	Site Engineer / Site Foreman	N/A		N/A	
1.2	Implementation of all measures and controls	Prior to commencing any activity	All necessary measures and controls are being implemented, that is: OHSCP, PHSCP, PCMP, EMP, ECP, CEMP, ERA, QMP, CHMP, SWMS	OHSCP, PHSCP, PCMP, EMP, ECP, CEMP, ERA, QMP, CHMP, SWMS	Visual Inspection	This ITP signed off	**HP***	Site Engineer / Site Foreman	N/A		N/A	
1.3	Precast Materials Inspection	Each Delivery	Precast materials have been inspected and fit for purpose and free of defects	619.08	Visual Inspection	This ITP signed Receival and Inspection Checklist	**IP**	Site Engineer	N/A		N/A	
1.4	Precast Pipe & Culvert Compliance	Prior to Commencing	Precast Reinforced Concrete Box Culverts to comply with requirements of VicRoads Section 619.	VicRoads Spec. Cl.619 701.04 701.05	Document review & Site inspection	Receival & Inspection Checklist Manufacturer cetificate or accreditation	**IP**	Site Engineer	N/A		N/A	
1.5	Bedding material classification	Prior to start	Nominated material shall be free from perishable matter and conform with the requirements below: 100% passing 19mm sieve. 5%-40% passing 0.075mm. PI = 20 max.	701.16 Table 701.091 Table 701.092	Verify	Test Reports from supplier	**TP**	Site Engineer	N/A		N/A	
1.6	Backfill material Classification	Prior to start	Nominated material shall be free from perishable matter and conform with the requirements below: 100% passing 37.5mm sieve. 5%-40% passing 0.075mm sieve. PI = 20 max.	701.19 Table 701.091 Table 701.092	Verify	Test Reports from supplier	**TP**	Site Engineer	N/A		N/A	

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1.7	Mortar material classification	Prior to start	Cementituous grouts shall be minimum Type C class dual shinkage compensating, with a minimum 28 day compressive strength of not less than 40 Mpa. Only whole bags of material shall be used. Test certificates, material data sheets and health and safety data sheets shall be available for all materials. The mortar and grout applications shall be cured in accordance with the requirements of clause 610.23. Mortars and grouts shall be sampled and tested in accordance with the requirements of clause 610.28.	610.33	Verify	Test Reports from supplier	**TP**	Site Engineer	N/A		N/A	

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2	**Construction Works**											
2.1	Excavation Permit	Each lot	An excavation permit must be issued prior to any excavation commencing. Plant and equipment shall be appropriate for the task. Excavation operations shall not disturb areas outside the limit of excavation.	Excavation permit	Verify	ITP Signed	**HP***	Site Engineer	N/A		N/A	
2.2	Review	Prior to construction	Culvert construction shall not commence until the Contractor's construction quality procedure and inspection and test plan(s) addressing all requirements of this section have been reviewed by the Superintendent.	626.02	Visual Inspection	ITP Signed	**HP**	Site Engineer/ Superintendent			N/A	
2.3	Diversion of Water	Prior to construction	Culvert construction shall not commence until water flow has been diverted to the satisfaction of the Superintendent. Pumping options shall not be used.	626.04	Visual Inspection	ITP Signed	**IP**	Site Engineer	N/A		N/A	
2.4	Conformity with Drawings	Prior to excavation	Prior to commencement of excavation for the culverts the Contractor shall confirm the position of all culverts with the Superintendent.	701.10	Visual Inspection	ITP Signed	**HP**	Site Engineer/ Superintendent			N/A	
2.5	Tolerances For Placement	Prior to Backfilling	The culvert shall be constructed in the location, to the alignment, cross sectional shape, dimensions and levels shown on the drawings with the following tolerances: Grade 5 mm in 5 m (1 in 1000) Overall plan position 50 mm Gap between adjacent units 12 mm maximum Step at joint between adjacent units 12 mm maximum horizontal or vertical.	Drawings 626.03	Visual Inspection	ITP Signed	**IP**	Site Foreman	N/A		N/A	
2.6	Foundation Inspection	Prior to Bedding	Bedding for the cast-in-place concrete base slab shall consist of a compacted layer of 20 mm Class 3 crushed rock, of not less than 150 mm compacted thickness. Where shown on the drawings, this material shall be placed on 40 mm Class 3 crushed rock spread in layers not exceeding 150 mm compacted thickness and compacted to achieve the required bearing pressure specified on the drawings. No bedding material shall be placed until the foundation or foundation materials have been inspected and approved by the Superintendent.	Drawings 812 626.06	Visual Inspection	ITP Signed	**HP**	Site Engineer/ Superintendent			N/A	
2.7	Cast in Place Blinding Concrete	Prior to construction of blinding slab	All cast-in-place concrete for culvert construction shall comply with the drawings and Section 610. Construction of the concrete blinding shall not commence until the bedding has been approved by the Superintendent.	Drawings 610 611 626.07	Visual Inspection	ITP Signed	**HP**	Site Engineer/ Superintendent			N/A	
2.8	Cast in Place Structural Concrete	Prior to construction of concrete base slab	All cast-in-place concrete for culvert construction shall comply with the drawings and Section 610. Steel reinforcement shall comply with the drawings and Section 611. Construction of the concrete base slab shall not commence until the pre-pour checklist and the reinforcement and form levels has been checked and approved by the Superintendent. Load Batch Traceability checklist shall be completed during pouring of structural concrete	Drawings 610 611 626.07 Pre Pour Checklist Load Batch Traceability	Visual Inspection	ITP Signed, Completion of Pre-Pour Checklist & Load Batch Traceability Checklist	**HP**	Site Engineer/ Superintendent			N/A	

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2.9	Placement of Crown Units	During Construction	Immediately prior to placing crown units, including link slab units, the surfaces of the bearing areas which support the crown units or link slab units shall be cleaned, wetted and then covered with a sufficiently stiff cementitious mortar to give a continuous finished thickness not less than 5 mm and not more than 10 mm after the crown units or link slab units have been placed. The cementitious mortar shall comply with Clause 610.32 and shall be mixed with only sufficient water to a moist dry-pack consistency that can be displaced to provide an even bearing. Cast-in lift anchors shall be cut off flush with the concrete substrate, and recesses filled to the surface with shrinkage compensating proprietary polymer modified cementitious mortar in accordance with Section 689. All mortar joints shall be protected and cured in accordance with Section 610.	Drawings 610 610.23 610.16 610.32 689 626.08	Visual Inspection	ITP Signed	**IP**	Site Engineer / Site Foreman	N/A		N/A	
2.10	Covering External Surface of Joints	During Construction	External surfaces of joints (top and sides) between adjacent units shall be covered full length with one layer strips of 150 mm wide synthetic nonwoven fabric, factory impregnated with a rubberised bitumen or a neutral petrolatum based compound. The fabric covers shall not be wrinkled and shall be applied on surfaces free of foreign matter in accordance with the manufacturer's recommendations to ensure effective adhesion onto the outer surfaces of the adjacent units. In the case of multi-cell culverts, fabric covers are not required where the gap between adjacent cells is filled with cementitious mortar or grout which complies with Clause 610.32. The Contractor shall submit to the Superintendent for review all test certificates related to the supply of fabric cover material at least 14 days prior to commencement of installation.	Drawings 610.32 626.09	Visual Inspection	ITP Signed	**HP**	Site Engineer/ Superintendent			N/A	
3	**Testing & Completion**											
3.1	Completion of Post-Pour checklist	Each Strucutral Concrete Pour	Post structural concrete construction, FHC-ITP-009 Post Pour Checklist Rev 2 shall be completed prior to placement of crown units Cover measurement of concrete shall be randomly selected at a number of exterior surface areas using a commercially available concrete cover meter in at least one 3 m2 test area for every 25 m2 or part thereof. A minimum of 10 cover meter measurements shall be undertaken within the test area and the least distance from the reinforcement to the concrete surface recorded to the nearest millimetre.	610 Post-Pour Checklist 610.34	Verify	ITP Signed Completion of Checklists	**HP***	Site Engineer	N/A		N/A	
3.2	Concrete Sampling and Testing	Each Strucutral Concrete Pour	Concrete sampled and tessted for strength and slump	610.16	Verify	Test Reports	**TP**	Site Engineer	N/A		N/A	

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3.3	Compaction and moisture content of backfill & bedding material	Each culvert	Notwithstanding the provisions of Section 173, a minimum of 20% of all lots for each culvert shall be tested. The calculation of density and moisture ratios shall be based on standard compactive effort. Bedding shall be compacted to refusal using hand held mechanical equipment. Backfill material which will have a nominal size after compaction of 40 mm or less shall be compacted to a mean value of density ratio of not less than 97%. Backfill material which will have a nominal size after compaction greater than 40 mm shall be compacted using a grading, mixing, watering and rolling procedure. Backfill material which has a swell equal to or greater than 2.5% shall be maintained at a mean moisture ratio of 92% between the completion of rolling and the placement of the overlying layer.	701.20	Verify	Test Reports	**TP**	Site Engineer	N/A		N/A	

Final Inspection

The signature below verifies that this ITP has been completed in accordance with the FH'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*	FH Hold Point	Work shall not proceed past the HP* until released by FH	**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			