Fulton Hogan	Inspection and Test Plan - Control and Supervision of the Works	Document # ITP-007 Revision : 2 Date : 31/01/2023

Client: Yarra Trams	**Construction Process:**	Prepared by:	Reviewed by :	Approved by :
Project:	***Concrete Track Slab Pour***	Name: **Aaron Hatch**	Name: **Damon Bromwich**	Name: **Shaun Kent**
Contract No:	**Specifications:** CE-019-ST-0033			
	Structure / Component: Concrete Tram Track Slab	Signed :	Signed :	Signed :
	Location:	Date : 31/01/2023	Date : 31/01/2023	Date : 31/01/2023

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***	Fulton Hogan Engineer	N/A		N/A	
1.2	Submission & Approval of Concrete Mix Design Prior to Commencement of Project	Prior to first concrete pour	Concrete mix design submitted and approved at least 2 weeks prior to first pour. Mix shall be minimum 460 kg/m3 cement content (for special 50 mix). Concrete shall be manufactured, transported and handled in accordance with the requirements of AS 3600 & AS 1379	CE-019-ST-0033	Verify	Mix Design ITP	**HP***	FH Engineer / Superintendent	**N/A**		N/A	
2	**Construction Works**											
2.1	Weather Monitoring	Prior to start	Placing of concrete shall not occur while ambient air temperature is <5°C or > 35°C without permission of the Superintendent	CE-019-ST-0033 CL 4.7.10	Verify	This ITP signed off	**HP**	Fulton Hogan Engineer / YT Superintendent			N/A	
2.2	Surface Preperation	Prior to start	Crush rock surfaces shall be moist and thouroughly cleaned of all foreign and loose matter prior to pour	CE-019-ST-0033	Verify	This ITP signed off	**IP**	Fulton Hogan Engineer / Foreman	N/A		N/A	
2.3	Setting Out	Prior to start	Set out work in accordance with drawings, concrete shall be constructed accurately to these specifications. No survey/level pegs to be removed by any persons until completion of works. Screed heights shall be set out to achieve the design levels specified in the drawings, and the correct pavement layer thickness	CE-019-ST-0033	Verify	This ITP signed off	**IP**	Fulton Hogan Engineer / YT Superintendent	N/A		N/A	

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2.4	Formwork	Prior to start	Formwork shall be straight, free from kinks and bends, and shall be secured to eliminate possibility of movement during concrete placement. The formwork shall be placed true to shape, alignment, grade and level to the concrete shown in the construction drawings. Forms shall not be stripped until the concrete has hardened to the satisfaction of the Superintendent.	CE-019-ST-0033 CL 4.7.9	Verify	This ITP signed off	**WP**	Fulton Hogan Engineer	N/A		N/A	
2.5	Reinforcement	Where Required	•Ensure that all reinforcement is placed as specified by construction drawings. •All placed reinforcement shall be clean and free from grease, tar, oil, paint, mud, loose or thick rust, etc. •Reinforcing fabric sheets shall be handled so that they remain free from distortion. They shall be lapped and tied with wire at a maximum spacing of 500 mm. •Reinforcement shall be terminated 75 to 80 mm from dowelled contraction joints. Reinforcement shall terminate at least 40 mm and not more than 80 mm from longitudinal construction joints, or pavement edges.	CE-019-ST-0033 CL 4.7.7	Verify	This ITP signed off	**IP**	Fulton Hogan Engineer	N/A		N/A	
2.6	Dowels	Where Required	•Ensure that all dowels are placed as specified in the construction drawings •All dowels shall be one-piece, straight, plain round steel bars complying with the requirements of AS 1302 and of the size shown on the drawings •Dowels shall be clean and free from mill scale, loose rust or oil. •Ensure that all dowels are securely held in their correct position until the concrete has set.	CE-019-ST-0033 CL 4.7.8	Verify	This ITP signed off	**IP**	Fulton Hogan Engineer	N/A		N/A	
2.7	Pre Pour Inspection	Prior to start	• Verification of track gauge calibration; a site test shall be conducted by checking measurement accuracy in a 180 degree diference in gauge placement • Verification of track geometry, heights and levels shall be ascertained by inspection of track and underlying structure • Contractor and Superintendent shall verify dimensions, levels and alignments of all formworks, reinforcement, rail levels, rail joint welding, track bonding, track drainage are satisfactory	CE-019-ST-0033	Inspection / Test Method	FH Track Inspection	**HP**	Fulton Hogan Engineer / YT Superintendent			N/A	

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2.8	Carry out sampling of concrete	Each concrete pour	**Slump:** Concrete Slump shall be 100mm +/-20 **Compressive Strength:** Shall be measured in accordance with CE-019-ST-0033 • Testing frquency = - 0-50m^3, 1 sample - 50-100m^3, 2 samples - 100m^3+, 3 samples Each sample shall consist of 4 cylinders Test Results will be provided to the Superintendent	CE-019-ST-0033 CL 4.7.5 & 4.7.18.4	Verify	Concrete supplier test sheet	**TP**	Fulton Hogan Engineer/ Superintendent			N/A	
2.9	Concrete Placement	Each Lot	• Ensure formwork is clean • Concrete shall be entirely discharged 60 minutes after batching, • Ensure that pouring does not occur from a height greater than 1200mm • Concrete shall be placed outside each of the tracks before placing the concrete between the tracks. Each part shall be poured as a monolithic section in one continuous operation •The Contractor shall ensure that there is a minimum of 125 mm under the foot of the rail for the placement of new concrete. If this cannot be achieved, then SL82 reinforcement shall be placed under the foot of the rail with at least 50 mm coverage. •There shall be no addition of water or any other material to the concrete at the site without the approval of the Superintendent.	CE-019-ST-0033 CL 4.7.6	Visual Inspection	This ITP signed off	**WP**	Fulton Hogan Engineer	N/A		N/A	
2.10	Compaction	Each Lot	• Immediately after concrete placement, compaction shall take place with an approved vibrator • Vibration shall take place until exposed concrete surface is free from air voids	CE-019-ST-0033 CL 4.7.16	Visual inspection	This ITP signed off	**IP**	Fulton Hogan Engineer	N/A		N/A	
2.11	Record location of each batch	Each concrete pour	Batch location recorded and noted on CL001D Load Batch Traceability	CE-019-ST-0033	Checklist	This ITP signed off	**IP**	Fulton Hogan Engineer	N/A		N/A	
2.12	Curing	Each concrete pour	Special 50 MPa Concrete' is to be cured a minimum of five hours after last load placed, prior to tram services resuming concrete less than 4 hours old shall be protected by covering with waterproof covers where appropriate (concrete to surface).	CE-019-ST-0033 CL 4.7.5	Checklist	This ITP signed off	**IP**	Fulton Hogan Engineer	N/A		N/A	
2.13	Tolerances	Each concrete pour	All concrete shall finish true to the dimensions, the following tolerances apply: •Plan dimension of slab +10,-10mm •Thickness of slab +10,-10mm •Cover to reinforcement +5,-3mm •Finished level of slab +3,-3mm •Foundation level of slab +0,-20mm	CE-019-ST-0033 CL 4.7.16	Checklist	This ITP signed off	**IP**	Fulton Hogan Engineer	N/A		N/A	

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2.14	Slab finish	Where appilcable - if track is Type 1 structure	Slab surface shall be uniformly level, flat and free from bumps, hollows and other irregularities. All exposed concrete surfaces shall be true, even and free from stone pockets, depressions and projections. A groove shall be formed along the running edge of each rail in accordance with Standard Drawing STD_T9010 Rev. C. The slab surfaces shall be broomed to provide a non-slip finish.	CE-019-ST-0033 CL 4.7.17	Checklist	This ITP signed off	**IP**	Fulton Hogan Engineer	N/A		N/A	
2.15	Post Pour Inspection	Each Lot	• Ensure finished surface of concrete is of high standard, with a uniform and level surface in accordance with pavement thickness and levels specified in the drawings • Ensure no defects are present in slab • Complete Fulton Hogan Post Pour Checklist	CE-019-ST-0033	Visual Inspection	Post pour checklist	**IP**	Fulton Hogan 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			