Fulton Hogan	Inspection and Test Plan - Control and Supervision of the Works	FHC-ITP-008 Revision : 1 Date : 23/01/2024

Client:	**MRPA**	**Construction Process:**	Prepared by:	Reviewed by :	Approved by :
Project:	**FITZGERALD ROAD CARPARK**	***Stormwater Drainage***	Name: **Fynn Riddick**	Name: Justin Sciacca	Name:
Job No:		**Specifications:** VicRoads Specification Section 701, 705 and Drawings			
		Structure / Component: Drainage	Signed :	Signed :	Signed :
		Location: Fitzgerald Road Level Crossing Removal Project	Date : 23/01/2024	Date : 25/01/24	Date :

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			
1.2	Implementation of all measures and controls	Prior to commencing any activity	All necessary measures and controls are being implemented, that is: PSP, EMP, TMP, JSEA, SWMS & WP	PSP, EMP, TMP, JSEA, SWMS, WP	Visual Inspection	This ITP signed off	**HP***	Site Engineer / Site Foreman	N/A			
1.3	Precast Concrete Pipes acceptance	Each Delivery	Precast reinforced concrete pipes shall be accepted on the basis of full compliance with the requirements of this section and AS/NZS 4058.	Cl. 701.05e	Visual Inspection	This ITP signed Receival and Inspection Checklist	**IP**	Site Engineer	N/A			
1.4	Precast Drainage Pit Compliance	Prior to Commencing	All concrete shall be manufactured to the concrete mix design registered by VicRoads and comply with the requirements of Section 610.	VicRoads Spec. Cl.610 Cl. 705.04 AS5100	Document Review	Receival & Inspection Checklist Manufacturer cetificate or accreditation	**IP**	Site Engineer	N/A			
1.5	Bedding material classification	Prior to start	Materials used for bedding and selected backfill shall be free from perishable matter and lumps and shall conform with the requirements of Table 701.091 and Table 701.092.	701.09(d) 701.091 701.092	Verify	Test Reports from supplier	**TP**	Site Engineer	N/A			
1.7	Backfill material Classification	Prior to start	Ordinary backfill shall be free from perishable matter and shall conform with the requirements of Table 701.091.	701.09(d) 701.091	Verify	Test Reports from supplier	**TP**	Site Engineer	N/A			
1.8	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 40 Mpa	610.33	Verify	Test Reports from supplier	**TP**	Site Engineer	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			
2.2	Set out drainage	Prior to backfilling	The position of all drainage lines are to be confirmed with the superintendent	Drawings 701.10	Visual Inspection	ITP Signed	**HP**	Site Engineer/ Superintendent				
2.3	Excacation (pipes)	Each Trench	Horizontal clearance (between the walls of trench to the side of pipe shall be 300mm – 600mm for pipes, and 0.5 to 1 times the overall height of the culvert for box culverts. Trench walls to be vertical where practical Depth of trench: • > 100mm below underside of pipe (for pipe width < 1500 mm) • > 200mm below underside of pipe (for pipe width > 1500 mm)	701.151 701.15	Visual Inspection	ITP Signed	**IP**	Site Foreman	N/A			
2.4	Excacation (pits)	Each Pit	A minimum clearance of 400mm is required around the external faces of precast pits.	705.05b	Visual Inspection	ITP Signed	**IP**	Site Foreman	N/A			
2.5	Compact base of trench	Each Trench	Compacted to refusal using mechanical plant.	701.15	Visual Inspection	ITP Signed	**IP**	Site Engineer	N/A			
2.6	Place bedding material & compact	Each Trench	Bedding and backfill materials shall be placed and compacted in layers not exceeding 150 mm loose thickness. Bedding shall be compacted to refusal using hand held mechanical equipment. Bedding 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.	701.20 701.20a	Visual Inspection	ITP Signed	**IP**	Site Engineer	N/A			
2.7	Place pipes & precast pits	Each Line/Pit	Pipes & pits placed as shown on the drawings. No laying to occur until bedding lines and levels and compaction requirements have been satisfied	Drawings	Visual Inspection	ITP Signed	**IP**	Site Engineer / Site Foreman	N/A			
2.8	Jointing pipe sections	Each Line	All interlocking (flush) joint reinforced concrete pipes shall be mortar jointed, or wrapped with a 200 mm wide external joint rubber band.	701.18	Visual Inspection	ITP Signed	**IP**	Site Engineer / Site Foreman	N/A			
2.9	Sealing - for joining culvert sections and pipe penetrations in pits	Each Pit	Contact areas between top and bottom sections of box culverts to be mortared. The joints between various components such as drainage pits, access chambers and pipes shall be made watertight using a cementitious mortar in accordance with the requirements of Clause 610.32.	610.32 701.17c	Visual Inspection	ITP Signed	**WP**	Site Engineer / Site Foreman	N/A			

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2.10	Survey of laid pipe or pit	Prior to backfilling	The location of each run of drainage has been verified prior to backfilling and conforms to the following tolerances: (a) offset of entry pits required to match lines of kerbs or barriers ±20 mm (b) plan location of pits other than offsets to kerb lines or barriers ±100 mm (c) invert level of pipes at pits ±50 mm (d) departure from design grade of pipe runs ±10 mm in 10 m provided minimum grade is not less than 1:250	701.10	Survey Conformance Point	ITP Signed	**SCP**	Site Engineer/ Surveyor	N/A			
2.11	Haunching & compaction of bedding material	each lot	Height of additional bedding material = 30% of nominal pipe diameter or culvert height. Loose layer thickness <=150mm Compacted to refusal using hand held mechanical equipment. 1 lot = 150mm layer	701.16 701.20	Visual Inspection	ITP Signed	**WP**	Site Engineer / Site Foreman	N/A			
2.12	Place & compact backfill material over pipes	each lot	**Backfill under paved area:** fill trench with selected back fill material to subgrade level **Backfill under area not paved:** Back fill trench with selected back fill to a level 0.3 m above the top of pipe or culvert, and ordinary back fill above that level Loose layer thickness <= 150mm. 1 lot = 150mm layer	701.19 701.20	Visual Inspection	ITP Signed	**IP**	Site Engineer / Site Foreman	N/A			
2.13	Place & compact backfill material around pits	Each Pit	Loose layer thickness <= 300mm. Compacted to refusal using hand held mechanical equipment.	705.18	Visual Inspection	ITP Signed	**IP**	Site Enginer	N/A			
2.14	Backfilling with cement stabilised sand	Each culvert	Where approval is given from superintendent, culverts in trenches may be backfilled to half the pipe diameter or box culvert height with 3% stabilised sand with a water content sufficient to ensure penetration beneath the pipe or box culvert invert without leaving free surface water.	VicRoads Spec. Cl. 701.19(a)	Site Inspection	Superintendent approval ITP signed	**AP**	Project Engineer / Superintendent	N/A			
2.15	Install step irons	Each Pit	For pits > 1m deep.	705.12	Visual Inspection	ITP Signed	**IP**	Site Enginer	N/A			
2.16	Pit base shaped with concrete to match pipe invert	Each Pit	As shown on Standard VicRoads drawing - Pit & Pipe Invert levels SD 1002	Standard VicRoads drawing SD 1002	Visual Inspection	ITP Signed	**IP**	Site Enginer	N/A			
2.17	Place pit covers	Each Pit	Covers must be set to within ±10mm of the design levels shown on the drawings	705.17	Visual Inspection	ITP Signed	**IP**	Site Engineer / Site Foreman	N/A			
2.18	Repairs to damaged pipes and box culverts	Each damaged pipe or culvert	No repairs shall be undertaken without the superintendents approval of the repair materials and procedures All repair procedures undertaken in accordance with Cl 701.25	701.31a	Verify	ITP Signed	**HP**	Site Engineer/ Superintendent				
3	**Testing & Completion**											
3.1	Compaction and moisture content of backfill & bedding material	at least 20% of all lots	Backfill material shall be compactied to a mean density ratio of 97% using standard compactive effort. Bedding shall be compacted to refusal using hand held mechanical equipment. Bedding 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.	701.20a 701.20b	Verify	Test Reports	**TP**	Site Engineer	N/A			
3.2	CCTV inspection	each lot	All drainage lines constructed shall be inspected, after completion of earthworks to subgrade level and prior to construction of pavement layers, by an independent testing organisation using closed circuit television (CCTV) to verify that the flow of water is not obstructed by waste construction material left inside and to check for visible signs of defects.	701.30	Visual inspection	CCTV Report	**HP**	Site Engineer/ Superintendent				

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3.3	Flushing of pipes	Each line	All pipes to be flushed clean upon completion	701.28	Verify	ITP Signed	IP	Site Engineer	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			