Fulton Hogan	Inspection & Test Plan - Rocker-roller Bearing Replacement	Document # FHC-ITP-01 Revision: 00 Date: 08.11.2024

Client: Metro Trains Melbourne	**Specifications & Standards:**	**Prepared by:**	**Reviewed by:**	**Approved by:**
Project: Cremorne Rail Bridge	DTP 630 - Fabrication of Steelwork (2023)	**Name:** Leo Watson	**Name:** Mike Freeman	**Name:** Richard Elmurr
Project No: 8B5200	DTP 631 - Protective Coating of Steelwork (2017)			
Structure / Component: Bridge Super-structure	AS/NZS 5131 Structural steelwork - Fabrication & Erection (2016)	**Signed:**	**Signed:**	**Signed:**
Location: Pier …..	AS 2312.1 Protective Coatings, Part 1 - Paint Coatings (2014)	**Date:** 8.11.2024	**Date:** 14.11.2024	**Date:**

Lot No: **Lot Details:** Bearing No. …… **Lot Size / Quantity:** 1 no. Bearing

Item No.	Task/Activity Description	Inspection / Controls & Verification Detail					HP/ WP/ AP/ IP/ TP/ SCP	Responsibility	Checked by:			
		Frequency	Acceptance Criteria	Reference Documents	Inspection / Test Method	Record of conformity		Project Engineer Site Engineer Superintendent Surveyor Foreman	Client	Fulton Hogan	FH's Sub-contractor	Date
1.0	**Preliminaries**											
1.1	Check for Correct Documentation	Prior to starting Works and at regular intervals	Ensure that all employees and subcontractors are: i. using the correct and complete set of drawings ii. all drawings are the latest revision	IFC Drawings Drawing Register	Document Review	This ITP	**HP***	Fulton Hogan Engineer	N/A		N/A	
1.2	Structural Steel Components	Where applicable, once, for each component	Fabricator is required to provide the Manufacturer's Data Record (MDR) for each component. This consists of, but is not limited to: i. Certificate of Compliance ii. Material Certificates and traceability iii. Quality Assurance check sheets iv. Coating certificate(s) v. As-built Drawings to demonstrate compliance with dimensional tolerances of AS5131, Appendix F2 Collate: Structural Steel Quality Assurance Documentation so it can be uploaded as a separate attachment (do not attach it here)	IFC Drawings Shop Drawings	Document Review	This ITP	**HP***	Fulton Hogan Engineer	N/A		N/A	
1.3	Bearing Plate Structural Epoxy Grout, Mortar or Adhesive Product Selection	Where applicable, once, for each product, prior to use	Product to be selected based on the following criteria: i. Have a minimum compressive strength equal to or greater than substrate (if unknown use 40MPa) ii. Thickness constraints suitable to the end use iii. Compressive strength gain suitable to the end use Either, Attach: TDS & Approval, or Enter: RFI No.	IFC Drawings RFIs Product TDS	Document Review	This ITP	**HP***	Fulton Hogan Engineer	N/A		N/A	
1.4	Bearing Plate Pin Epoxy Resin Product Selection	Where applicable, once, for each product, prior to use	Product to be selected based on the following criteria: i. Have a minimum bond strength equal to or greater than substrate's (if unknown use 1.5MPa) ii. Compressive strength gain suitable to the end use Either, Attach: TDS & Approval, or Enter: RFI No.	IFC Drawings RFIs Product TDS	Document Review	This ITP	**HP***	Fulton Hogan Engineer	N/A		N/A	
2.0	**Pre-replacement**											
2.1	Indentification of Defective Bearings	Each replacement bearing location, when accessible	Ensure that the correct bearings are clearly identified and named using the Temporary Works Design Drawings.	Temporary Works Design	Document Review Visual	This ITP	**HP***	Fulton Hogan Engineer	N/A		N/A	
2.2	Survey of Existing Bearing Plate Heights	Each replacement bearing location, when accessible	Survey the existing bearings in reference to each other using an arbitrary datum on each pier. Note: a minumum of 2 points to determine RLs.	Detailed Works Methodology	Measure	This ITP	**SCP** **HP***	Fulton Hogan Engineer	N/A		N/A	

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2.0	**Pre-replacement (Continued)**											
2.3	Existing Conditions for Temporary Works	Each replacement bearing location, when accessible	Supervisor to inspect of the area where the Temporary Works will be located to ensure that it meets or exceeds the conditions defined in the Temporary Works Design. Photograph/Record: The existing conditions, noting any damage to the piers, including coatings Complete: Temporary Works Permit to Construct	Temporary Works Design Permit to Construct, Apply Load & Remove	Visual Measure	This ITP	**HP***	Fulton Hogan Engineer	N/A		N/A	
2.4	Establishment of Temporary Works	Each pair of steel girders at each replacement bearing location	All structural steel packers, shims, supports and hydraulic cylinders / jacks are the correct size, grade and locational tolerance nominated on the Temporary Works Design and fixed accordingly. Complete: Temporary Works Permit to Apply Load	Temporary Works Design Permit to Construct, Apply Load & Remove	Visual Measure	This ITP	**HP***	Fulton Hogan Engineer	N/A		N/A	
2.5	Survey of Existing Track Heights	Prior to Jacking Operations	Measure both track heights at 5m intervals, staggered 2.5m above all planned the bearing replacement locations. Record: Pre-lift Track Heights	Detailed Work Methodology	Verify	This ITP	**SCP** **HP***	Surveyor Fulton Hogan Engineer	N/A		N/A	
3.0	**Replacement**											
3.1	Jacking Operations - Raising	Each pair of jacking points	Hydraulic jacks to be raised simultaneoulsy in a steady, controlled manner until the maximum height of 25mm is reached. Locking collars to be engaged and hydraulic lines to be disconnected and capped with dust caps. Record: Maximum height and pressure gauge readings for information Record: Any movement or damage to the crossheads Attach: Shore HIre's Jacking Operations ITP	Shorehire ITP Detailed Work Methodology	Visual Measure	This ITP	**IP**	Shore Hire Fulton Hogan Engineer	N/A			
3.2	Survey of Existing Track Heights	Post-jacking Operations, Occupation #1 Only	Measure both track heights at 5m intervals, staggered 2.5m above all planned the bearing replacement locations. Record: Post-lift Track Heights Check: The readings are within 25mm from initial survey	Detailed Work Methodology	Measure	This ITP	**SCP** **HP***	Surveyor Fulton Hogan Engineer	N/A		N/A	
3.3	Removal of Existing Bearing Componentry	Each defective bearing	Disassemble bearing componetry and safely relocate outside of the Work area. Bearing plate pins to be removed by prizing, levering or other suitable means to minimise damage to the crosshead. Clean the area to remove any loose particles, dust and contaminants. Note: Bearing plates may need to be flame-cut to reduce size and weight.	Detailed Work Methodology	Visual	This ITP	**IP**	Fulton Hogan Engineer	N/A		N/A	
3.4	Existing Bearing Plate Pin Holes	Each bearing plate pin location	Inspect the existing hole depth and locations to ensure compliance with the IFC Drawings - dry-fitting the replacement pin (M30 threaded rod) is recommended. Where necessary, drill or core holes to achieve the required depth. Flush the hole and surrounding area to remove newly created contaminants.	Detailed Work Methodology	Visual Measure	This ITP	**IP**	Fulton Hogan Engineer	N/A		N/A	

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3.0	**Replacement (Continued)**											
3.5	Placement of New Bearing Componentry	Each bearing	Manoeuvre new bearings into position, measuring height and level against pre-determined survey marks using shims where necessary. Raise the bearing, mix and place epoxy bedding mortar onto the concrete surface of the crosshead and lower the bearing into the bedding epoxy mortar. Where bearing components require assembly, place and tighten bolts to snug tight conditions.	Detailed Work Methodology Product TDS	Visual Measure	This ITP	**HP***	Fulton Hogan Engineer	N/A		N/A	
3.6	Placement of Bearing Plate Pins	Each pin	While the bearing epoxy bedding mortar is wet, mix and inject epoxy bonding resin into each holes. Insert the replacement bearing plate pins into the awaiting holes until the washer seats onto the top surface of the bearing plate. Clean any residue from the plate before it sets.	Detailed Work Methodology Product TDS	Visual	This ITP	**IP**	Fulton Hogan Engineer	N/A		N/A	
4.0	**Post-replacement**											
4.1	Removal of Temporary Works	Each pair of steel girders at each replacement bearing location	Inspect any epoxy bedding mortar to determine if sufficient time has elapsed for it to have achieve the same strength of the crosshead (if unknown, use 40MPa). Where a skim coat for levelling purposes has been applied, check that it has hardened. Complete: Temporary Works Permit to Remove	Temporary Works Design Permit to Construct, Apply Load & Remove	Visual	This ITP	**HP***	Fulton Hogan Engineer	N/A		N/A	
4.2	Jacking Operations - Releasing	Each pair of jacking points	Hydraulic jacks to be lowered simultaneoulsy in a steady, controlled manner until the new bearings are supporting the super-structure and the pressure gauges read 0MPa. Complete: Shore Hire's Jacking Operations ITP Photograph/Record: The new conditions, noting any damage to the piers, including coatings	Shorehire ITP Detailed Work Methodology	Visual Measure	This ITP	**IP**	Shore Hire Fulton Hogan Engineer	N/A			
4.3	Survey of Existing Track Heights	Post-bearing replacement	Measure both track heights at 5m intervals, staggered 2.5m above all planned the bearing replacement locations. Record: Post-bearing Replacement Track Heights Check: The readings are within 25mm from initial survey.	Detailed Work Methodology	Measure	This ITP	**SCP** **HP***	Surveyor Fulton Hogan Engineer	N/A		N/A	
4.4	Protective Coating Touch-up	Where required	Where required, apply a tocuh-up to the bearing's protective coating following the coating specification.	Coating Specification	Visual	This ITP	**IP**	Fulton Hogan	N/A		N/A	
4.5	Client Inspection	Before the end of the occupation	Prior to the occupation being closed, a joint inspection is to occur with the Client to ensure that the replacement bearings are fit for purpose and any damage to the crossheads of coatings is complete.	Detailed Work Methodology	Visual	ConQA Hold Point Release	**HP**	Client		N/A	N/A	

Final Inspection

The signature below verifies that this ITP has been completed in accordance with Fulton Hogan's Quality Management Plan and verifies lot compliance with the IFC Drawings, nominated specifications & standards.

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			