




Client: Metro Trains Melbourne Project: Cremorne Rail Bridge Project No: 8B5200 Structure / Component: Bridge Super-structure Location: Pier	Specifications & Standards: DTP 630 - Fabrication of Steelwork (2023) DTP 631 - Protective Coating of Steelwork (2017) AS/NZS 5131 Structural steelwork - Fabrication & Erection (2016) AS 2312.1 Protective Coatings, Part 1 - Paint Coatings (2014)	Prepared by: Name: Leo Watson Signed:  Date: 26.11.2024	Reviewed by: Name: Mike Freeman Signed:  Date: 26.11.2024	Approved by: Name: Mike Freeman Signed:  Date: 26.11.2024
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Lot No:	Lot Details:	Bearing No.	Lot Size / Quantity: 1 no. Bearing
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Item	Task/Activity Description	Inspection / Controls & Verification Detail					HP/ WP/ AP/ IP/ TP/ SCP	Responsibility	Checked by:			
No.		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 (<u>do not</u> attach it here)	IFC Drawings Shop Drawings	Document Review	This ITP	HP*	Fulton Hogan Engineer	N/A		N/A	
1.3	Bearing Plate Epoxy Grout / Mortar or 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 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 Grout / Mortar or 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 <u>simultaneously</u> 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 immediate Work area. Bearings on concrete piers: bearing plate pins to be removed by prizing, levering or other suitable means to minimise damage to the crosshead. Bearings on steel piers: bearing plate bolts to be loosened with lubricant or heat and worked free, ensuring that the bolt does not shear. Clean the newly exposed area to remove any loose particles, dust, rust 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	

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3.0	Replacement (Continued)											
3.4	Existing Bearing Plate Pin or Bolt Holes	Each bearing plate pin or bolt location	<p>Inspect the existing hole depth and locations to ensure compliance with the IFC Drawings.</p> <p>Bearings on concrete piers: 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.</p> <p>Bearings on steel piers: clean and lubricate the threads for ease of inserting the replacement bolts.</p>	Detailed Work Methodology	Visual Measure	This ITP	IP	Fulton Hogan Engineer	N/A		N/A	
3.5	Placement of New Bearing Componentry	Each bearing	<p>Manoeuvre new bearings to be within ± 3mm.</p> <p>Bearings on concrete piers: measuring location, height and level against pre-determined survey marks using shims for height where necessary.</p> <p>Bearings on steel piers: insert replacement bolts and tighten to snug tight condition.</p> <p>If bearing components require assembly, place link bars and tighten bolts to snug tight condition.</p>	<p>Detailed Work Methodology</p> <p>Product TDS</p>	Visual Measure	This ITP	HP*	Fulton Hogan Engineer	N/A		N/A	
3.6	Epoxy Grout / Mortar Mixing	Each bearing on concrete	<p>Size of mixer should match the application.</p> <p>Volume of components accurately measured (if in parts), matching the required amount for the required consistency and accurately measured. Product poured into the mixer slowly. Mixing time as per TDS so that a smooth, even consistency is obtained.</p>	<p>Detailed Work Methodology</p> <p>Product TDS</p>	Visual Measure	This ITP	IP	Fulton Hogan Engineer	N/A		N/A	
3.7	Epoxy Grout / Mortar Testing - Compressive Strength Cubes	Each bearing	<p>Cube moulds to be 75mm x 75mm maximum. Where shrinkage compensating products are used, moulds shall be made from rigid steel and require lids due to the product's expansive nature.</p> <p>Testing is to be in accordance with the following frequencies:</p> <p>First batch = 1 no. 28 day strength per bearing Every 100kg of product thereafter = 1 no. 28 day strength per bearing.</p>	<p>Detailed Work Methodology</p> <p>Product TDS</p>	Test	This ITP	IP	Fulton Hogan Engineer	N/A		N/A	
3.8	Epoxy Grout / Mortar Placement	Each bearing & pin	<p>Baseplate Pin Product: pour the product into the awaiting prepared holes. Insert the new M30 pins until the nut is directly resting on the baseplate, agitating the pin as it is inserted to allow any entrapped air to escape.</p> <p>Allow to harden before proceeding to the second product.</p> <p>Baseplate Product: where required, seal the perimeter of the new baseplate with a silicon sealant to create a bund for the product to stand while it sets. Pour the product within the bund, topping up as necessary.</p> <p>Allow to set for the longer of; a minimum of 4 hours at 20°C to achieve 25MPa or the strength gain over time table on the TDS.</p>	<p>Detailed Work Methodology</p> <p>Product TDS</p> <p>RFIs</p>	Visual	This ITP	IP	Fulton Hogan Engineer	N/A		N/A	

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		Frequency	Acceptance Criteria	Reference Documents	Inspection / Test Method	Record of conformity	Client			Fulton Hogan	FH's Sub-contractor	Date	
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	
4.6	Compressive Strength Test Results	Each cube	28 day compressive strength per sample comply with the design strength. Attach: Compressive Strength Test Results	IFC Drawings Product TDS	Document Review	This ITP	IP	Fulton Hogan	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: / /					