Network Rail TRU Project W3 (Huddersfield to Westtown (Dewsbury))

Huddersfield Viaduct (MVL3/92): Schedule of Materials

Network Rail

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Contents

1. INTRODUCTION

1.1 Background

1.1.1 The Trans-Pennine Route Upgrade (TRU) (herein referred to as the 'Programme') is a programme of works which will improve the Trans-Pennine railway between Manchester, Huddersfield, Leeds and York and improve connections between key towns and cities across the north of England. The TRU Programme is split into a number of different sections across the extent of the route, each delivered as separate schemes.

1.1.2 The section of the Programme comprising improvements between Huddersfield and Westtown (Dewsbury) is being delivered through The Network Rail (Huddersfield to Westtown (Dewsbury) Improvements) Order (herein referred to as the 'Order Scheme') (Planning Direction was received from the Department for Transport referenced TWA/21/APP/03, dated 13 October 2022 and the TWAO came into force on the 3 November 2022).

1.1.3 Listed Building Consent for works to Huddersfield Viaduct (MVL3/92) was granted on 27 June 2022 referenced 2021/65/91329/W. Since the submission of the Order application, the progression of the detailed design for proposed works to Huddersfield Viaduct has highlighted additional requirements and criteria the implemented design will need to meet. As such, this new listed building consent application will encompass the planned works and will capture changes made during the design development process. This application includes many of the works approved by extant permission 2021/65/91329/W, but also encompasses some amendments to previously approved works and additional elements.

1.1.4 This Materials Schedule supports this new Listed Building Consent application for the proposed works to Huddersfield Viaduct, comprising the re-construction of Span 1 (John William Street bridge), strengthening works to the abutment of Span 4 (Fitzwilliam Street), infill of the partial Span 5, re-construction of part of Span 29 (Bradford Road), provision of parapet handrails, spandrel wall strengthening and installation of overhead electric line equipment and a signal gantry.

1.2 Summary of proposal

1.2.1 To achieve the TRU Programme objectives of increasing capacity and reducing journey times, the Scheme requires alterations to be made to the railway along the length of Huddersfield Viaduct (MVL3/92). It is necessary to provide additional tracks for the length of the viaduct and to install Overhead Line Equipment (OLE) along the structure.

1.2.2 Consequently, it is proposed to undertake a number of works to the Grade II Listed viaduct. These are summarised in paragraph 1.4.2 of the Heritage Statement[1] submitted in support of the Listed Building Consent application, and include replacement or strengthening of sections of multiple spans of the viaduct, installation of OLE along the structure and strengthening of the viaduct's spandrel walls. These proposals and their impact upon heritage assets is discussed in more detail in Sections 3 and 4 of the Heritage Statement accompanying the application[2].

[1] Network Rail, 2023. *Network Rail (Huddersfield to Westtown (Dewsbury) Improvements) Order: Huddersfield Viaduct (MVL3/92) - Heritage Statement*. 8-9.

[2] Ibid. 32-57.

1.3 Information Included in this Document

1.3.1 This document details a Materials Schedule for the proposed works to the Grade II Listed Huddersfield Viaduct (MVL3/92). This comprises a schedule of the materials to be used on all external elevations of the structure.

1.3.2 We do not anticipate any need to depart from the information provided, however there may be unforeseen circumstances which require us to revise proposals. In such circumstances Kirklees Council will be notified as soon as possible, and their agreement sought on the required change in materials through the established TRU Heritage Working Group.

1.3.3 It is recognised that there are locations where the final definition of materials to be used cannot be fully determined at this time, for example where there are aspirations for material reuse, dependant on condition, such as at John William Street bridge (Span 1). In these cases, the approach to materials will be confirmed via the Conservation Implementation Management Plan (CIMP), which will be secured via a condition of the Listed Building Consent (discussed further in Section 4.2 of the Heritage Statement submitted in support of this application). Where this is the case, specifications and samples of the materials to be used would be shared with Kirklees Council for approval via the regular TRU Heritage Working Group. The Materials Schedule in this document below (Table 2-1) notes where this is the case.

2. HUDDERSFIELD VIADUCT (MVL3/92) - SCHEDULE OF MATERIALS

2.1.1 Table 2-1 below outlines the Schedule of Materials to be used in the proposed works on Huddersfield Viaduct (MVL3/92).

Table 2-1 Huddersfield Viaduct (MVL3/92) – Schedule of Materials

Item	Location	Proposal	Colour	Additional Requirements
John William Street Bridge (Span 1)				
Replacement metalwork	External parapet – both sides of deck	Remove, refurbish (condition dependent) & reinstate existing decorative cast iron parapet panels and posts. New elements - fabricated from steel.	External face: Crimson Lake RGB (150, 10, 20), 'Lead' White RGB (250,240,230), Historic Black RGB (10,10,10). Internal face: Historic Black RGB (10,10,10)	New elements to match existing as far as practical. Painted to match the historic London, Midland and Scottish Railway colour scheme from the route in existing pattern. Note, colour names are not standardised
Cill beam	Precast concrete cill – both ends, above existing stonework	Precast concrete cill unit	N/A (Concrete without colouration)	
Cill beam – anchor blocks	Northern abutment – both ends	2No. Metal plates ~2m x 1m with anchors embedded into the structure	New metalwork: Historic Black RGB (10,10,10)	
Deck	Underside of bridge deck and bracing	Majority of soffit - Weathering steel. Bottom flange - painted in current colour (black)	Weathering steel – Natural Rust Painted sections - Historic Black (RGB 10,10,10)	

Item	Location	Proposal	Colour	Additional Requirements
Replacement stone	Both ends, all corners (where required)	Local sandstone	Match existing stonework.	Local sandstone of similar size to adjacent units. Spare stone from site used where possible Replacement stone (where required) to be sourced from Crosland Hill Quarry, Huddersfield, West Yorkshire. HD4 7AB Or equivalent where approved and agreed by LPA via CIMP. Locations where required to be confirmed via CIMP
OLE	1No. portal skewed from the north-western corner abutment to the south-eastern corner abutment.	Galvanised steel	Zinc Grey (unpainted)	As per standard OLE componentry
Bedding mortar and Pointing mortar	Underneath and between cill units	Bedding mortar (for new elements) - Cementitious grout Pointing mortar (stonework) - Lime mortar (NHL5)	N/A (natural colour)	Bedding Required for connecting precast cill units to one another and to the existing abutment.
Rainwater Goods – Hopper/Downpipes	TBC (where required)	Cast metal rainwater goods - new hoppers to be of similar appearance to existing.	Black	Existing drainage works to be amended, if / where required. Details of proposed works to be confirmed via CIMP.

Item	Location	Proposal	Colour	Additional Requirements
Signals	1xCentre of northern abutment 1xwestern deck	New signal gantry and sign in metallic materials	Signal - Galvanised metal (unpainted) Sign - metal	Sign to meet standard Network Rail detail
Bird Mesh	Soffit	New anti-bird mesh netting	Black	To be fixed to soffit of new span
Fitzwilliam Street (Span 4)				
Parapet	Northern side of deck	Remove, refurbish (condition dependent) & reinstate existing decorative cast iron parapet panels and posts. New elements - fabricated from steel.	External face: Crimson Lake RGB (150, 10, 20), 'Lead' White RGB (250,240,230), Historic Black RGB (10,10,10). Internal face: Historic Black RGB (10,10,10)	New elements to match existing as far as practical. Painted to match an historic colour scheme the historic London, Midland and Scottish Railway colour scheme from the route in existing pattern. Note, colour names are not standardised
Cill beam	Both ends	New concrete cill units installed in area of removed masonry.	N/A (Concrete without colouration)	
Replacement stone	Both ends (where required)	Reuse existing stonework where possible. Replacement (if required) - Local sandstone	Match existing stonework.	To allow construction, the stonework will need locally displaced/removed at the edge of the deck. The masonry will be re-built around new cills and up to existing metalwork. Local sandstone of similar size to adjacent units.

Item	Location	Proposal	Colour	Additional Requirements
				Replacement stone (where required) to be sourced from Crosland Hill Quarry, Huddersfield, West Yorkshire. HD4 7AB Or equivalent where approved and agreed by LPA via CIMP. Locations where required to be confirmed via CIMP
Replacement metalwork	Main box girder	Strengthening and main girder - painted steelwork. New strengthening to other elements - painted metal	External face: Crimson Lake RGB (150, 10, 20), 'Lead' White RGB (250,240,230), Historic Black RGB (10,10,10). Internal face: Historic Black RGB (10,10,10) Other strengthening: Light grey to match soffit	Painted to match an historic colour scheme from the route in existing pattern. Box girder means most of the proposed strengthening is not visible. Full height web strengthening on the external face will be painted Crimson Lake red to match existing. Strengthening and main girder steelwork will tie-in to decorative parapets Note, colour names are not standardised

Item	Location	Proposal	Colour	Additional Requirements
OLE	1No. portal at south-eastern corner abutment.	Galvanised steel	Zinc Grey (unpainted)	As per standard OLE componentry
Bedding mortar and Pointing mortar	Underneath cill units	Bedding - Cementitious mortar Pointing - Lime mortar (NHL 5)	N/A (natural colour)	Bedding required for connecting precast cill unit to the existing abutment. Pointing for reinstated stonework
Rainwater Goods – Hopper/Downpipes	TBC (where required)	Cast metal rainwater goods - new downpipes or hoppers to be of similar appearance to existing.	Black	Existing drainage works to be amended, if / where required. Details of proposed works to be confirmed via CIMP.
Replacement utility services	Troughing to run on top of box girder	Standard GRP troughing	Light grey	Troughing alignment as per existing
Bird Mesh	Soffit	New anti-bird mesh netting	Black	To be fixed to soffit of new span
Span 5				
Arch infilling (e.g. granular fill, foam concrete, masonry wall)	Under and throughout the underside of the structure	Foamed concrete	N/A	800kg/m^3 wet density, 700kg/m^3 dry density lightweight foamed concrete. Foamed concrete infill will not be visible and will be concealed by masonry façade/walling system.
Infill finish/façade	Western face of infill	Natural sandstone	Similar to existing structure.	Local sandstone of similar size to adjacent units. Stone to be sourced from Crosland Hill Quarry, Huddersfield, West Yorkshire. HD4 7AB

Item	Location	Proposal	Colour	Additional Requirements
				Or equivalent where approved and agreed by LPA via CIMP.
Northgate / Bradford Road (Span 29)				
External Parapet	Both replacement decks - exterior face	Concrete parapet with rebated rectangular panel finish	Natural concrete	Rebated rectangular panel finish on exterior face to mirror web splice positions on existing metallic deck
Internal Parapet	Both replacement decks - interior face	Concrete parapet with smooth finish.	Natural concrete	Not visible from public realm.
Exterior of abutment	Both abutments	All concrete surfaces excluding cill beams and OLE corbels to be clad with natural sandstone.	Natural sandstone	Local sandstone of similar size to adjacent units. Stone to be sourced from Crosland Hill Quarry, Huddersfield, West Yorkshire. HD4 7AB Or equivalent where approved and agreed by LPA via CIMP.
Underside of deck	Soffit of replacement decks.	Concrete - smooth finish to flanges of beams.	Natural concrete	Diaphragms at decks ends supported on bearings over cill beams.
Replacement stone	Abutments (where required)	Local sandstone	Natural	To match existing Replacement stone (where required) to be sourced from Crosland Hill Quarry, Huddersfield, West Yorkshire. HD4 7AB Or equivalent where approved and agreed by LPA via CIMP.

Item	Location	Proposal	Colour	Additional Requirements
				Locations where required to be confirmed via CIMP
OLE	Steel bracket on south-western corner abutment and north-eastern abutment.	Galvanised steel	Grey	As per standard OLE componentry
Bedding mortar and Pointing mortar	New stonework	Colour to match existing. Lime mortar, NHL 5	Light grey	
Rainwater Goods – Hoppers / Downpipes	Drainage to all four corners of span and adjacent abutment.	Like for like replacement of downpipes and hoppers in cast metal to match existing. New downpipes and hoppers as required in matching cast metal. Visible feeder pipes in metal	Black	Existing drainage works to be amended, if / where required. Details of proposed works to be confirmed via CIMP.
Replacement utility services	Topside - New cable route	New cable route in standard GRP trough.	Light grey	Part buried in ballast not visible by public.
Bird mesh	Gap between abutment bearing shelf and deck end diaphragm above	Removeable metal mesh panels to fill 700mm high gap	Black	
Masonry Spans				
Replacement Bricks	Widespread – arch barrel soffits + spandrel walls	New masonry to match existing	To match existing	Locations where required to be confirmed via CIMP. Any repair/replacement to meet Network Rail standards. Specifications to match repairs previously agreed with Kirklees

Item	Location	Proposal	Colour	Additional Requirements
				Council and undertaken where reasonably practicable.
Replacement mortar	Widespread – arch barrel soffits + spandrel walls	New mortar to be of similar appearance and properties (lime mortar) to existing	To match existing	Locations where required to be confirmed via CIMP. Any repair/replacement to meet Network Rail standards. Specifications to match repairs previously agreed with Kirklees Council and undertaken where reasonably practicable.
New handrail	Masonry span locations where the existing parapet or handrail (where present) is either too low or of insufficient strength	GRP, key clamp type	Black	
Drainage hoppers	TBC (where required)	Any new hoppers to be of similar appearance to existing in cast metal	Black	Existing drainage works to be amended, if / where required. Details of proposed works to be confirmed via CIMP.
Downpipes	TBC (where required)	Any new downpipes to be of similar appearance to existing in cast metal	Black	Existing drainage works to be amended, if / where required. Details of proposed works to be confirmed via CIMP.
Overhead Line Equipment (OLE)	Widespread	Galvanised steel	Grey (unpainted)	As per standard OLE componentry

Item	Location	Proposal	Colour	Additional Requirements
New DNO cable trunking	Masonry span western elevation face above pier 16	Steel and/or GRP	Steel - Grey (unpainted) GRP - Black	Where GRP trunking to be used, this would be painted black. Details to be confirmed via CIMP.
Strengthening measures – pattress plates	Widespread	Metal circular plates	Historic Black – RGB 10,10,10	Two pattress plate ties per span in areas currently understrength. Anticipated as being predominantly on eastern Locations where required to be confirmed via CIMP

3. CONCLUSION

3.1.1 As stated, this document is submitted in support of the application for Listed Building Consent for the proposed works to the Grade II Listed Huddersfield Viaduct (MVL3/92), north of Huddersfield town centre.

3.1.2 The works will be implemented with the materials used as agreed via this documentation. As detailed above in paragraph 1.3.2, any unforeseen circumstances leading to changes in the materials used will be communicated to Kirklees Council and changes in materials agreed accordingly via the Heritage Working Group and detailed in the subsequent CIMP(s).

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