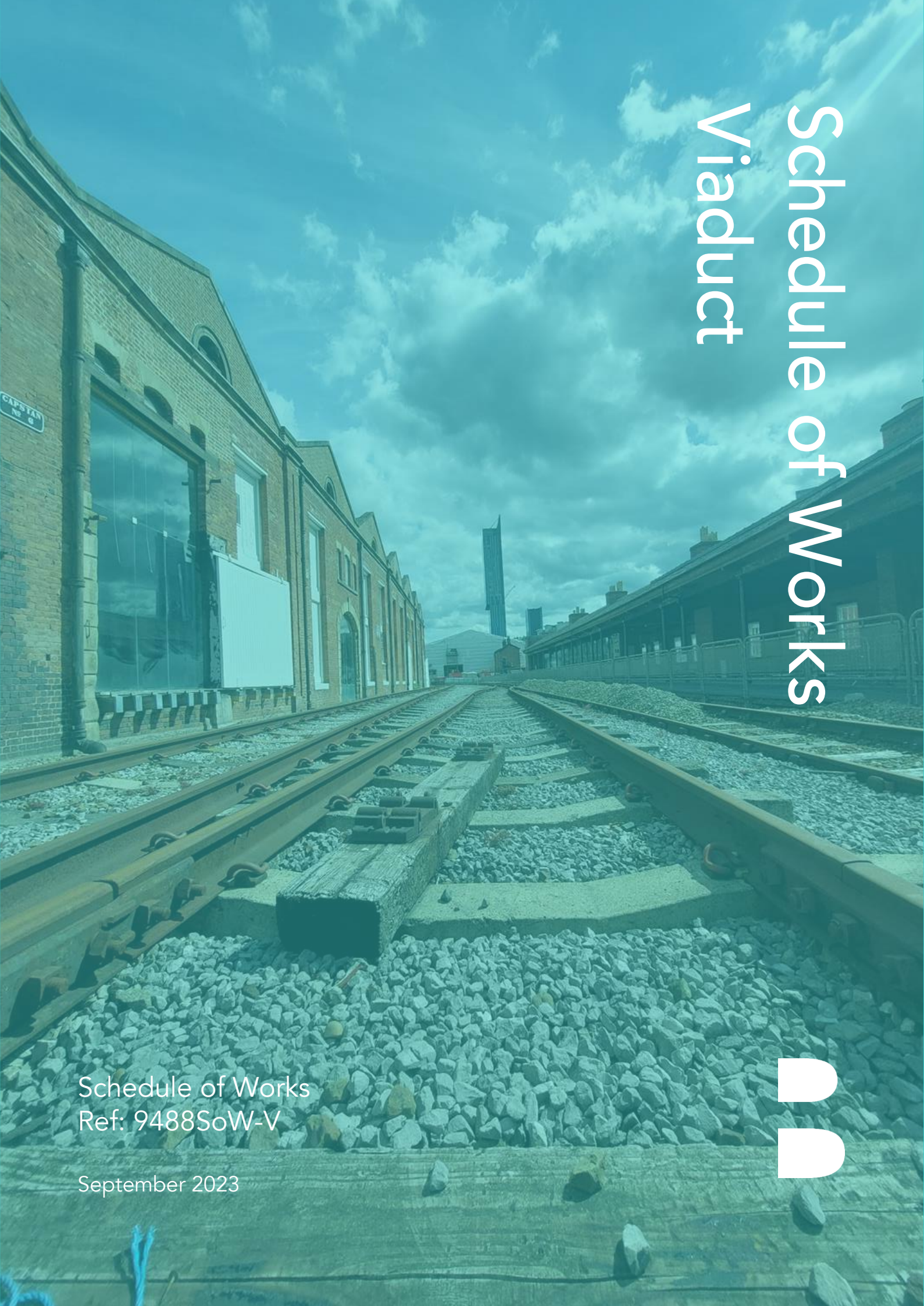

Schedule of Works
Viaduct

Schedule of Works
Ref: 9488SoW-V

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1.0 Introduction

This document contains a description of the 'work items' that are to be undertaken as part of the project and it is to be read in conjunction with the Preliminaries and Specification.

A ***Work Item*** is either; a single operation, a series of operations or a complete element of the project and the cost for each 'work item' is to be entered in the Schedule of Works.

The ***Schedule of Works*** quantifies many of the 'work items' contained in this document; reference should be made to separate accompanying pricing document.

The ***Drawings*** that accompany the LBC / tender documentation have, where appropriate, been annotated with the 'work item' references used in this document.

1.1 Definitions

EMPLOYER'S REPRESENTATIVE means the person nominated in the Contract as Employer's Representative, Architect, Contract Administrator or Project Manager.

CA means both Contract Administrator/Accredited Professional. Inspections and approvals are to be dealt with by said representative individual.

REMOVE means disconnect, dismantle as necessary and remove the stated element, work or component and all associated accessories, fastenings, supports, linings, and bedding materials, and dispose of unwanted materials. It does not include removing associated pipework, wiring, ductwork, or other services.

KEEP FOR REUSE means during removal prevent damage to the stated components or materials and clean off bedding and jointing materials. Stack neatly, adequately protect and store until required by the Employer or for use in the Works as instructed.

REPLACE means remove the stated existing components, features, and finishes. Provide and fit in lieu new components, features or finishes which, unless specified otherwise, must match those which have been removed. Make good as necessary.

REPAIR means carry out local remedial work to components, features and finishes as found in the existing building, resecure or refix as necessary and leave in a sound and neat condition. It does not include:

- Replacement of components or parts of components.
- Redecoration.

MAKE GOOD means carry out local remedial work to components, features and finishes which have been disturbed by other, previous work under this Contract and leave in a sound and neat condition. It does not include:

- Replacement of components or parts of components.
- Redecoration.

The meaning of the term shall not be limited by this definition where used in connection with the defects liability provisions of the Contract.

EASE means make minor adjustments to moving parts of the stated component to achieve good fit in both open and closed positions and ensure free movement in relation to fixed surrounds. Make good as necessary.

TO MATCH existing means, use products, materials and methods to match closely all visual characteristics and features of the existing work, with joints between existing and new work as inconspicuous as possible, all to approval of appearance.

APPRAISE means the contractor is to appraise and carry out own independent assessment of the works detailed here within and update the scope of works as is necessary through consultation with the Architect.

SALVAGED refers to materials that have been *removed* and *kept for reuse* on this job: no second-hand or reclaimed material are to be used on this project.

CONSOLIDATION means the contractor is to make something physically stronger and solid. Returning / combing items into a single / coherent whole. Rake out and repoint / build with an NHL mortar. Return to match original profiles. Rebuild in association with structural ties / wall core gravity grouting etc

1.2 Precedence

General: Where, and to the extent that, documents conflict the following orders of precedence apply:

Preliminaries override contract drawings, which override the Reference specification.

Any conflicts found within the documents: Give notice to the Employer's Representative.

2.0 General

2.1 Project Background

2.1.1 The combined project focuses on a number of areas within Science & Industry Museum complex. The Science and Industry Museum is located to the north-west of central Manchester, to the east of the River Irwell and within the Castlefield Conservation Area.

2.1.2 This schedule of works, focuses on the Viaduct capping and interfaces with the Station Building and 1830s Warehouse.

2.1.3 The Station Building and 1830s Warehouse are both Grade I Listed and are situated to the west end of the site.

2.1.4 The site is within close proximity to Deansgate, Spinningfields and the Castlefield Basin. The site is well connected with Deansgate train station and Metrolink approximately 550m away. Refer to separate Design and Access Statement for detailed location information.

2.2 Familiarisation

2.2.1 The contractor must fully familiarise themselves with the buildings / assets and their construction, as well as site wide access and logistics, prior to submitting their tender.

2.3 Preliminaries and General Particulars

2.3.1 The contractor must include for all necessary scaffolding (temporary roof), temporary public access, building / asset protection (finishes, exhibits & collections items internally and externally), perimeter hoarding to all scaffold / storage and welfare facilities. Include for protection of historic features and fabric. Include for all necessary internal scaffolding and access provisions, taking into account that the site complex is a live environment and may require alteration to said access components at any given time. Prior to submitting a price, the contractor must have visited the site to assess the logistics and access requirements.

2.4 Drawings

2.4.1 All dimensions are in millimetres unless noted otherwise.

2.4.2 The existing general arrangement base drawings (plans, sections, and elevations) are based upon 2010 data and in some instances, may not reflect the current arrangement. Dimensions and arrangements must be checked for accuracy onsite by the contractor, prior to any works commencing, ordering or manufacture / fabrication of any elements or components.

2.4.3 Any discrepancies / irregularities must be reported to the CA immediately. No work shall commence until any such discrepancies have been resolved.

2.4.4 In any project involving fabric repairs, the tendered drawings may have been prepared well in advance of the contract period and are reflective of the condition / arrangement at the time of survey.

2.4.5 The marked-up drawings are based upon surveys from ground level and other accessible vantage points only.

2.4.6 The contractor and/or subcontractor must allow a period of two weeks in their programme, to reappraise the drawings and confirm the scope of works to each identified area, once appropriate and safe access has been provided.

2.4.7 All areas for repair are to be marked up from the drawings onsite by the contractor and agreed with the Architect, prior to commencing any works.

2.4.8 Quantities / areas identified are for tender purposes only.

2.4.9 Specific drawing references are provided against each of the work items throughout this schedule, however the contractor

must read and appraise all drawings, schedules and specifications provided, against those specifically referenced. If the contractor believes that they are not in possession of the correct and/or relevant information, they must advise and report to the CA immediately.

2.5 Limitations

2.5.1 The drawings are based upon existing data and no concealed and / or hidden spaces have been exposed and / or opened up for inspection, unless specifically highlighted. Therefore, the arrangement and interfacing illustrated across details are purely indicative / approximate only. The accuracy of the survey data graphically presented cannot be confirmed. These drawings are for tender purposes only.

2.5.2 Limited and focused opening up works have been undertaken, to inform build-ups as existing. All detail arrangements and build-ups beyond external visible surfaces are purely indicative / approximations only with suggested construction and interfacing arrangements. The contractor must check all existing build-ups once appropriate safe access has been provided and will advise the Architect of any discrepancies.

2.5.3 No hidden or concealed spaces have been assessed or opened up, unless otherwise noted.

2.6 Fabric Repairs Generally

2.6.1 The schedule of works must be read in conjunction with separate Architectural Restoration Specification ref-9488RS, the content of which are summarised by the following headings and document references:

1. Introduction
2. General
3. Specific Requirements
4. Access Scaffolding
5. Asbestos / Hazardous Materials
6. Demolition & Removal
7. Opening up & Building / Asset Protection
8. Masonry Cleaning: General
9. Masonry Cleaning: Removal of Organic Growth
10. Hydraulic Lime Mortar
11. Stone Repairs
12. Brick Repairs
13. Pointing of brickwork
14. Ceiling Repairs
15. Glazing Repairs
16. High Quality Joinery

17. Joinery Repairs

18. Paint, Decorating & Powdercoating

19. Renewal of Rainwater Goods

20. Restoration of Historic Ironwork

21. Roof Repairs – Carpentry/Timber Framing

22. Roof Repairs – Slating

23. Roof Repairs – Leadwork

24. Hotworks

2.7 Internal 'dilapidation' inspection of work areas

2.7.1 In order to record the condition of each internal work area:

2.7.2 Immediately prior to the work commencing in an area, undertake an inspection with the CA in order to record the existing condition of the areas. The inspection is to be limited to the space in and around the work area and the routes to and from the work area.

2.7.3 Provide a report of any significant defects together with a photographic record for each area.

2.7.4 Confirm the scope of work within each area with the CA and agree how any anomalies will be dealt with e.g. occupiers' fixtures and fittings, partition abutments, etc.

2.8 External 'dilapidation' inspection of work areas

2.8.1 Prior to the commencement of any work on site including the erection of scaffolding the contractor is to allow to undertake an inspection with the CA in order to record the existing condition of the existing building (areas not subject to change in particular) including roofs, footpaths, road and other external paved areas.

2.8.2 The contractor is to provide report of any significant defects together with a photographic record of the external areas.

2.9 Photographs

2.9.1 Provide a photographic record of each individual repair with at least one photograph before, during and after. Complex areas such as major rebuilding works will require a series of photographs to record the work properly and fully.

2.9.2 Photographs do not need to be presented in a document; however, each file should be renamed to have a prefix that corresponds with the unique reference number provided on the drawing.

2.10 Cleaning upon completion of works

2.10.1 All parts of the elevations, working areas are to be thoroughly cleaned down on completion of the works. Prior to dismantling the scaffold ensure that it is cleaned and clear of any debris that could damage the face of the building. As the scaffold is dismantled remove debris and brush clean all sills, ledges, and the like.

2.10.2 Clean down all paintwork and windows.

2.10.3 This item is specifically for cleaning upon completion. Cleaning during the works as required for good housekeeping is to be costed elsewhere within the preliminaries.

2.11 Samples / trial works

2.11.1 Prior to the commencement of any works, there may be a requirement to provide samples / trial works in advance of progressing full packages of works.

2.11.2 These must be provided in a timely manner, as outlined within the separate Architectural Restoration Specification.

2.12 Sub-consultants, specialists

2.12.1 General: The schedule of works must be read in conjunction with all available sub consultant / specialists' information, including drawings, schedules, specifications, and reports. Any discrepancies / anomalies identified are to be brought to the attention of the Architect as soon as they become evident.

2.13 Dimensions

2.13.1 Dimensions: Do not rely on scaled dimensions.

2.13.2 All dimensions relevant to the existing buildings and any other assets or features must be confirmed by the contractor before, order, manufacture, and installation.

2.13.3 The contractor must undertake a survey(s) in order to ascertain sufficient information about the structures and their surroundings, prior to undertaking any works.

2.14 Work Items

2.14.1 Work item headings and sub-headings.

- 100 Viaduct – removals & demolition
    - 101 Viaduct inclusive of station platform
    - 102 Station Building – Exterior
    - 103 Station Building – Interior
- 200 Viaduct – Proposals
    - 201 Viaduct inclusive of station platform
    - 202 Station Building – Exterior
    - 203 Station Building – Interior

3.0 Schedule of Works

Work Item	*Description*	*£*

100 Viaduct – removals & demolition

101 Viaduct inclusive of station platform

The below works are to extend across the entire Viaduct footprint, interfaces and abutments with buildings and assets, up to and including the station platform.

- Read in conjunction with drawing(s): (01) 002, 003, 004, 005, 006, 007, 008, 009, (03) 001, 002, 101, 102, (23) 001, 002, 003, 004, 005, 006, 007, 101, 102, 103, 104, 105, 106, 107
- See **work item 201** for proposed works.
- Refer to **Structural consultant's** pack for scheduled structural related works.

a. Tag and record position of all railway tracks and sleepers (timber & concrete), carefully lift, remove and store onsite for future reinstatement, including all associated elements and components.

b. Carefully lift and store ballast onsite for future reinstatement. Remove and dispose of all vegetation growths, miscellaneous items etc.

c. Clear all silt and detritus from across all concrete surfaces, including the slabs and drainage channels.

d. Remove and dispose of any stagnant water, contained across the slab / drainage channels.

e. Remove all previous remnants of waterproofing systems, mastics, residue, and sealants etc across all concrete surfaces.

f. Carefully lift concrete covers / lids across the entire length of the north trough / drainage channel. Stack and store onsite for future reinstatement. Tip damaged / defective covers.

g. Carefully remove concrete screed at the interface with the 1830s Warehouse and north trough, along the entire length of the asset. Width and depth vary.

h. Remove and dispose of all modern composite cills, timber boarding and supporting timberwork across infills between structure glazing and the north trough interface, including removal of flashings, waterproofing system, and residue across all surfaces.

i. Carefully lift concrete covers / lids across the entire length of the transverse trough / drainage channel. Stack and store onsite for future reinstatement. Tip damaged / defective covers.

j. Carefully remove any temporary hoarding.

k. Carefully remove all existing land drain mesh covers across both the north, south and

Work Item	*Description*	*£*

transverse troughs at the interface with the slab. Exact fixing and interface detail is unknown.

l. Carefully break out and remove all macadam including subbase material down to slab level across the platform.

m. Carefully remove all existing metal post and rail balustrading (incl any access gates) across the viaduct and parapet edges, including all associated elements and components, set aside for future reinstatement.

n. Carefully remove all embedded railway tracks along the station platform edge at the abutment with the Station Building. Tag and record, set aside for future reinstatement. Clean up and remove snots, residue across tracks, girders.

o. Lift and remove all modern timber planks across entire length of station platform.

p. Carefully break out and remove cast insitu concrete kerbs / upstands across the entire length of the south trough / drainage channel, to allow for the removal of hidden concrete covers / lids.

q. Carefully remove brick header / border which runs the entire length of the Station Building.

r. Carefully lift concrete covers / lids across the entire length of the south trough / drainage channel. Stack and store onsite for future reinstatement. Tip damaged / defective covers.

s. Carefully lift existing stone cobble setts to the east of the station platform and set aside for future reinstatement. Clean up and remove snots, residue across all cobble setts.

t. Carefully lift bullnose masonry capping's / weathering's across the southeast and northwest parapets and side aside for future reinstatement.

u. Tag and record layout of existing random stone pavers to the west of the platform, lift, and store onsite for future reinstatement. Remove and dispose of all subbase material down to concrete slab level. Clean up and remove snots, residue across all paving stones.

v. Carefully remove existing asphalt flashings at the abutment with the north trough / 1830s Warehouse and Station Building ticketing office. Care taken to limit damage to masonry behind.

w. Allow for the temporary removal of lower section of cast iron downpipes along entire length of the 1830s Warehouse to provide unrestricted access to remove previous waterproofing systems. Tag and record positions and carefully remove lower sections of downpipe including all associated elements and components. Store onsite for future reinstatement.

102 Station Building – covered platform

The below works are to extend across the entire covered platform area, which resides within the Station Building.

- Read in conjunction with drawing(s): (01) 006, 007, 008, 009, (03) 001, 101, (04) 002, 003, 004, 005, 006
- See **work item 202** for proposed works.
- Refer to **Structural consultant's** pack for scheduled structural related works.

a. Tag and record layout of existing timber planks across the covered platform of the Station Building. Carefully work free and lift existing planks, set aside and store onsite for future reinstatement within sheltered location. Care taken at interface with modern glazed screen and perimeter masonry walls. Dispose of decayed, defective timber planks.

b. Lift and dispose of all existing timber battens, substrate material to underside of timber planks across entire timber planked area.

c. Lift and remove all existing waterproofing systems including all associated elements and components installed across concrete screed to covered platform.

d. Carefully break out and remove existing concrete screed across entire surface area of covered platform to expose concrete floor planks below. Note: column fixing plates are likely to be exposed along the station platform edge. Exact fixing arrangement is unknown.

e. Carefully form neat hole through the base of ferrous column with integral downpipe. Note: across dual purpose / rainwater piped columns only.

f. Allow for the temporary removal of timber cladding panels fixed to partition to underside of covered area, to facilitate access to carry out the waterproofing works at platform level. Tag and record locations, store onsite for future reinstatement.

103 Station Building – Interior

The below works are to extend across the covered platform area within the 'Carriage Works' including focused areas of the ground floor plate, within the Station Building.

- Read in conjunction with drawing(s): (01) 004, 005, 006, 010
- See **work item 203** for proposed works.
- Refer to **Structural consultant's** pack for scheduled structural related works.

a. Temporarily lift existing internal finishes across the 'Carriage Works' at platform level, including MEP equipment to facilitate access to carry out waterproofing works across the interiors of the glazed screens. Remove defective, decayed timber sub structure.

b. Allow for temporary removal of glazed door sets, frames, and ironmongery to facilitate access to carry out waterproofing works across covered platform area ('Carriage Works'). Set aside for future reinstatement.

c. Carefully take down and remove modern softwood t&g boarded ceiling and bulk heads across room SB G05 (ground level) including supporting structure, visqueen and mineral wool insulation to expose concrete plank soffit above. Allowance for removal of full ceiling following further inspection.

d. Remove and tip existing internal water catchment troughs from within room SB G05.

Work Item	*Description*	*£*

200 Viaduct – proposals

201 Viaduct inclusive of station platform

The below works are to extend across the entire Viaduct footprint, interfaces and abutments with buildings and assets, up to and including the station platform.

- Read in conjunction with drawing(s): (04) 002, 003, 004, 005, 006, (06) 001, 002, (23) 201, 202, 203, 204, 205, 206, 207
- Refer to **Structural consultant's** pack for scheduled structural related works.

a. Prepare all concrete surfaces for the application of waterproofing system. Remove residue, detritus. Undertake concrete repairs as directed by the structural engineer. Undertake remedial works across drainage as directed by the civils engineer. Form chamfers across all concrete corners and edges as directed by waterproofing contractor.

b. Create and form new concrete cast insitu kerbs / ledges for concrete covers and lids to the south trough / drainage channel.

c. Install new waterproofing system across all concrete surfaces, including abutments, interfaces and all associated elements and components, incorporating movement joints as directed by the structural engineer.

d. Form new flashing at abutments with the 1830s Warehouse and Station Building ticketing area, including all other masonry / concrete abutments and interfaces. Height of flashing upstand to match existing. Supply and install new lead cover flashing to mask waterproofing system. Lead flashing to be taken into brick coursing and pointed up with a mastic.

e. Where waterproofing system is exposed to the north trough, aggregate scatter to be applied, colour matched to the concrete covers.

f. Reinstate concrete covers / lids to the north trough. Supply new covers where existing were deemed to be unusable / defective. Allow for fettling of edges / jambs across all covers to ensure covers fit within existing locations. Form neat new holes for rainwater goods where required.

g. Reinstate concrete covers / lids to the transverse trough. Supply new covers where existing were deemed to be unusable / defective. Allow for fettling of edges / jambs across all covers to ensure covers fit within existing locations.

h. Reinstate all lower portions of 1830s Warehouse rainwater pipes and all associated elements and components, which were temporarily removed to facilitate waterproofing works. Touch up and redecorate. Ensure water is free flowing.

i. Install new drainage / filtration layer across all concrete surfaces.

Work Item	*Description*	*£*

j. Install new drainage / filtration layer at platform level, to allow any trapped water to migrate from covered platform, into south trough / drainage channel.

k. Supply and install new concrete covers / lids across the south trough / drainage channel with gullies / outlets. Covers are to be removable, allowing for future maintenance of drainage channel below, allow for smaller access covers where access required to maintain outlets to ferrous columns.

l. Supply and install metal edge trim, to run the entire length of the platform, separating the new concrete covers and the original timber planks to the covered platform.

m. Reinstate existing stone random paving slabs within existing locations, including all required subbase, and bedding material.

n. Reinstate cobble setts within existing locations, including all required subbase, and bedding material.

o. Reinstate macadam including all required subbase and bedding material.

p. Reinstate all metal balustrade panels (incl gates) within existing locations. Allow for wholesale redecoration.

q. Fabricate and install new stainless steel land drain mesh covers, to restrain ballast, across all existing land drain locations.

r. Reinstate ballast, sleepers, and tracks within existing locations, including all associated elements and components. Ensure tracks are fully operational and serviced.

s. Carry out flood tests across all newly waterproofed areas, ensuring no leaks and water is free flowing towards outlets.

202 Station Building – covered platform

The below works are to extend across the entire covered platform area, which resides within the Station Building.

- Read in conjunction with drawing(s): (04) 002, 003, 004, 005, 006, (06) 001, (23) 201, 202, 203, 204, 205, 206, 207
- Refer to **Structural consultant's** pack for scheduled structural related works.

a. Prepare all concrete surfaces for the application of waterproofing system. Remove residue, detritus. Undertake concrete repairs as directed by the structural engineer. Undertake remedial works across drainage as directed by the civils engineer. Form chamfers across all concrete corners and edges as directed by waterproofing contractor.

b. Prepare existing concrete planks across covered platform floor plate. Lay new concrete screed laid to falls, to disperse into south trough / drainage channel.

c. Install new waterproofing system across all concrete surfaces, including abutments, interfaces and all associated elements and components, incorporating movement joints as directed by the structural engineer.

d. Waterproofing system to extend vertically at interfaces / abutments with glazing and masonry but be kept just below platform level. Appropriately sealed at the interface.

e. Waterproofing system to extend vertically with glazing, including for the installation of EPDM layer with allow waterproofing hidden and concealed below platform level.

f. Supply and install new composite battens for the fixing of timber planks. Drill holes at regular centres along entire length of composite battens to provide cross ventilation. Planing and modification of battens may be required.

g. Supply and install small gauge mesh to underside of timber planks to reduce the transfer of detritus to the underside.

h. Reinstate existing timber planks across the covered platform, within original locations. Allow for fettling of edges, planing down of surfaces to ensure and maintain ventilation gaps, between each of the planks. Fix timber planks to composite battens below.

i. Reinstate timber wall cladding within existing locations within covered platform area.

j. Carry out flood tests across all newly waterproofed areas, ensuring no leaks and water is free flowing towards outlets.

203 Station Building – Interior

The below works are to extend across the covered platform area within the 'Carriage Works' including focused areas of the ground floor plate, within the Station Building.

- Read in conjunction with drawing(s): (01) 010
- Refer to **Structural consultant's** pack for scheduled structural related works.

a. Reinstate glazed doorsets including all elements and components across the 'Carriage Works'. Ensure all fully operational and serviced.

b. Reinstate all temporarily removed floor finishes, surfaces and all associated elements and components across the interior of the 'Carriage Works'. Install new treated timber substrate where required.

c. Supply and install new soffit slab (insulation) boarding to underside of concrete planks. Allowance for installation across full ceiling area across room SB G05.

d. Supply and install new t&g boarded ceiling including battens and cross battens. Arrangement to mask existing layout, size, and profile. Allowance for installation across full ceiling area across room SB G05. Make good all disturbed plastered surfaces and decorate to match existing.

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