Network Rail / John McAslan + Partners / Arup

King's Cross Station - Platform Y
Final Report

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Contents

Executive Summary

Architectural Project Team

1.0 Introduction

2.0 Scope of Work

3.0 Listed Building Justification Statement

3.1 Project Context
3.2 Operational Requirement
3.3 Constraints on Routing of the Platform Y Track
3.4 Alignment and Clearances of Sidings
3.5 Manholes and Drainage
3.6 Emergency Escape
3.7 History and Current Condition of Bothy Building
3.8 Future Appearance of Cab Road and Cobbled Ramp

4.0 Technical Design Proposals

4.1 Structural Engineering Considerations
4.2 Mechanical & Electrical Engineering
4.3 Public Health

APPENDICES

Appendix I Listed Building Application Drawings

King's Cross Station Platform Y

Final Report

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Executive Summary

Introduction

This report summarizes the work undertaken by the Architectural Project Team since August 2003. The aim of this project is to develop the proposals for the new Platform Y at Kings Cross Station to Level 4 and Listed Building application stage. The proposals were developed in collaboration with White Young Green (railway engineers), John McAslan + Partners and Faithful & Gould (quantity surveyors).

Scope of Work

The scope of the Platform Y works is generally defined by the extent of the East Range building at ground floor level and the external area to the north. This includes works to the mezzanine level and mezzanine glazing, the internal wall facing York way and brick piers facing Platform 1. Externally, modifications are required to the cobbled ramp and buildings to the north, including the Bothy building.

Project Context

The new Platform Y will provide increased capacity and performance benefits to trains on the East Coast Main Line (ECML). The new platform will be for electric use only, with diesel trains still being able to use the other platform at Kings Cross. The new platform will also meet current interopearbility standards, which require a platform length of 300m in order to allow to operations of trains across the whole of the trans-European high-speed rail network. There are very limited possibilities to provide 300m long platforms elsewhere at Kings Cross Station.

The existing east sidings will be relocated further east in order to provide the route for the new track.

Operational Requirement

At peak times, all platforms at Kings Cross are fully occupied and there is a pressing need to provide for additional services and facilities for longer London Commuter trains. The new Platform will also provide additional platform capacity and improve the recovery times from delays.

Routing of the Platform Y Track

The routing of the new track, as proposed by White Young Green, is constrained by the turnout for the proposed east sidings, the existing signal gantry stanchion, the North Portal leading into Cab Way and clearances below the Eastern Range building. The proposed solutions does not require alterations to the existing North Portal and is aligned parallel with the east flank wall of Cab Way.

The re-located east sidings avoid disturbing the surge chambers to the Camden sewer and the need to demolish part of the York Way platform.

Fire Strategy

Currently, means of escape for passengers on Platform 1 and occupants of the East Range building is either to the south or to the north of the station. The construction of the new track will remove the existing secondary escape route to the north up the cobbled ramp and onto York Way.

However, Platform Y will adopt the existing fire escape procedure for the rest of Kings Cross, with people escaping south, along the platforms out into the Southern square. An alternative escape is provided at the northern ends of the platforms along the track walkways.

A two hour fire protection for the load bearing structure of the East Range building is proposed. This additional protection is proposed because the East Range forms part of the support structure for the main train shed roof. The mezzanine windows facing the main train shed will be replaced with temperature rated glazing to prevent fire spreading from Platform Y to the East Range building. Smoke is vented directly into the main train shed and the existing openings at the north end allow smoke to vent directly to the outside.

History and Current Condition of Bothy Building

At the northern end of the East Range building, the 'Bothy' building stands at the point where the Battle Bridge Road viaduct crossed the tracks. Two cobbled ramps provide access to the station Cab Road to the south and to the former York Road Station to the north (now demolished).

Later additions to the Bothy building have limited architectural interest. To allow construction of the new track and platform, the buildings, including the Bothy, have to be demolished. The southern part of the cobbled ramp will be narrowed and provide emergency access to the new track.

Future Appearance of Cab Road and Cobbled Ramp

New finishes will be provided to the platform and soffit and the existing exposed surfaces cleaned and repaired. The sotfit finish to the underside of the East Range mezzanine and first floor levels will consist of a slatted finish to provide a continuous textured appearance. Individual elements can easily be replaced and provide enough open area for acoustic absorption.

The new platform stone finish will be co-ordinated with the proposals for the new western concourse, landscaping to the external areas and the platform renewals works. Tactiles will be provided along the platform edge.

The internal elevation of the York Way wall and brick piers on the west towards Platform 1 will be cleaned and repaired. A new casing will be installed to the brick piers to provide a route for services and enclose the fire protection required to the mezzanine supports. Platform lighting will be fixed on arms extending from the column casings. The lighting will be installed at a constant height along the platform below the mezzanine and first floor soffit. Uplighters will provide general illumination to the flank wall along York Way. Platform speakers will be recessed behind the column casings.

Stakeholder Consultations

During design development, consultations have taken place with the following bodies:

- Strategic Rail Authority (SRA)
- Network Rail (NR)
- English Heritage (EH)
- London Borough of Camden (LBC)
- London Fire and Emergency Planning Authority (LFEPA)
- Her Majesty's Railway Inspectorate (HMRI)

Discussions with English Heritage and London Borough of Camden have focused on the Platform Y proposals and their effect on the Grade I Listed station building and surrounding area.

The fire strategy has been discussed with LFEPA and HMRI. A joint meeting will be held in the near future in order to reach formal agreement on the proposed strategy.

Tenant Relocation

A number of tenants currently occupying part of Cab Way and the external area to the north of the East Range Building have to be relocated before construction of Platform Y. A schedule with current, proposed temporary, and final location as part of the overall Kings Cross Masterplan is included with this report. The tenant relocation is currently subject to discussion between Network Rail and the various parties.

King's Cross Station
Platform Y

Final Report

Network Rail
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Architectural Project Team

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1.0 Introduction

This report summarizes the work undertaken by the Architectural Team to develop the proposals for the new Platform Y to Level 4/Listed Building Consent Application.

During the six months of design development, the Architectural Team has worked closely with the railway engineering consultant, White Young Green.

This report contains the Listed Building Justification Statement, the Listed Building Application Drawings and the Technical Drawings.

During the course of the study, a series of four-weekly reports has been issued to summarize design development of each stage.

King's Cross Station
Platform Y

Final Report

Network Rail
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2.0 Scope of Works

The Platform Y project extends from the south end of the original station building to its north end and from the western line of piers of the East Range to the external wall facing York Way. Included is also the external area, stretching north to the Gasworks Tunnel, which forms part of the Listed Building Consent application.

Vertically, the extent of the project can be described to extend to the underside of the East Range mezzanine and first floor levels. Although the mezzanine level is not part of the scope of this project, limited options for improvements have been investigated where this directly relates to the platform operation (e.g. switch gear) or where the removal of certain elements would improve circulation at platform level.

Included in the Scope are works to improve the fire rating of elements of the East Range building. This includes the replacement of the mezzanine windows.

Further included is the relocation of facilities/tenants that currently occupy part of Cab Way.

Scope of Work Excluded

The following are interface areas excluded from the scope of the project:

- Ground floor offices at the southern end of the East Range.
- External Facade of the East Range Building, with exception of the new openings to York Way.
- Works to the office areas of the East Range Building.
- South Elevation of the East Range

3.0 Listed Building Justification Statement

Contents

1.0 Project Context
2.0 Operational Requirement
3.0 Constraints on the Routing of the Platform Y Track
4.0 Alignment and Clearances of Sidings
5.0 Manholes and Drainage
6.0 Emergency Escape
7.0 History and Current Condition of Bothy Building
8.0 Future Appearance Cab Road and Cobbled Ramp

1.0 Project Context

The project to construct a new platform - Platform Y at Kings Cross Station, is part of the Listed Building/Planning Application carried out at King's Cross requiring close liaison and consultation with the King's Cross CTRL Programme, Network Rail, Managed Stations and Train Operating Companies (TOC's)

Platform Y is required to provide additional capacity at King's Cross Station to support increased capacity of trains on the East Coast Main Line (ECML), to meet both current and future demand. It will also provide a more robust performance to the route by provision of capacity for both long and additional train (interoperability) turn-rounds and recovery from disruptions and delays. Platfrom Y will also assist in providing platform capacity for the major interchange between International and domestic train services and the LUL.

Constructing Platform Y will affect the East Side Offices situated within King's Cross Station, a Grade 1 Listed structure and this work will consequently require consultation and approval by English Heritage and London Borough of Camden.

The proposed work at present is pursuing a single option with outline designs for the following:

- Permanent Way, Civils & Building and M&E
- Signalling
- Overhead Electric Lines (OEL)

The scheme for Platform Y will be for electric train use only, with associated extension of the existing Platform 1. The East Side 'Thunderbird Sidings' will be re-located further east.

The East Coast Main Line (ECML) Route Utilisation Strategy (RUS) is part of the SRA's new framework planning process. The RUS informs both the SRA and the other key Railway stakeholders on the strategic direction of key elements of the ECML. It provides a major input into the future franchise specifications. The RUS also informs the Otfice of the Rail Regulator(ORR) and Network Rail (NR) in regard to decisions that are required for access rights on the ECML.

The requirement for a national Capacity Utilisation Policy is to reflect a number of factors affecting the rail network. The network has not grown materially for over 100 years but the demand for services has. Sustained passenger growth has been experienced at its highest level for 50 years. In addition, demand for Rail Freight has increased in the last 8-10 years. The nature of demand is also changing and the network and train capacity does not currently reflect this. A significant challenge to the industry is the poor train running performance. Lastly, future changes to the network are expensive and not deliverable for some years.

The ECML RUS will be at the heart of this national Capacity Utilisation Policy. For targeted and congested parts of the network, RUS's will be a statement of:

- Priorities for use of capacity for the next 5-10 years
- Definition of current and future opportunities and problems over congested parts of the network
- How any changes from the existing capacity utilisation should be delivered.

The structure of the emerging proposals from the RUS, confirms the need for an additional platform at King's Cross. The platform would offer significant performance benefits and ease congestion. What is also clear is that without the additional platform, there can be no capacity increases at Kings Cross.

Interoperability

The Railways (Interoperability) (High-Speed) Regulations 2001 implement EU Directive 96/48/EC on the interoperability of the trans-European high-speed rail system. Under the Treaty of Rome the UK is obliged to implement the Directive in full.

The first stage towards interoperability was the high-speed rail interoperability Directive 96/48/EC, which came into force in 1996. This directive will apply to high-speed lines on the trans-European rail network (TEN) and all vehicles likely to operate on them. In Great Britain, the high-speed rail lines on the TEN are the Channel Tunnel rail Link (CTRL), the West Coast Mail Line (WCML), the East Coast main Line (ECML), the Great Western Main Line (GWML) between London and Bristol/Cardiff and that part of the Channel Tunnel that falls within UK jurisdiction.

European railways will be required to develop their networks, in terms of infrastructure, rolling stock and operationally, in a way that facilitates the operation of trains across the whole of the trans-European high-speed rail network. The eventual aim is for the harmonisation of technical standards across Europe so that any interoperable train can operate on any TENs rail line.

The Directives requirements will be implemented through the application of mandatory technical specifications for interoperability (TSIs) and supporting European Standards (ENs), which set out in detail the technical requirements that must be complied with in order for interoperability to be achieved.

The UK supports the goals of the Directive provided that interoperability can be achieved safely and cost etfectively.

The main implication arising from interoperability and TENs is the requirement to provide 300m long platforms. At King's Cross Station there are very limited possibilities to provide this

King's Cross Station Platform Y

Final Report

Network Rail
John McAslan + Partners
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August 2006

apart from the Platform 'Y' proposal, which will result in two 300m long platforms, 'Y' and '1'.

The only possible alternative would be to move the entire station northwards, introduce additional sub-surface platforms, and a new 'bore' under the Regent's Canal. All these alternatives have been discounted due to prohibitive cost of associated engineering works and the resulting lack of a business case.

CTRL

The Channel Tunnel Rail Link (CTRL) is the first major railway to be constructed in the UK for over a century. The 108km track will stretch from central London to the Channel Tunnel, connecting Britain directly with Europe's expanding high-speed rail network and significantly reducing journey times for passengers.

This link is being built in two stages. Construction of Section 1 began in October 1998 and consisted of building a new line from the Channel Tunnel towards London through the north and eastern parts of Kent, primarily along the existing M20 motorway corridor. The route also required the development of the 1.2km Medway bridge crossing and the nearby 3.2km North Downs Tunnel.

Section 2 of the project will see the line extended from North Kent, through a 3km tunnel beneath the River Thames and across a new viaduct under the M25 London Orbital motorway as it approaches the outskirts of East London. The line will then travel for 19km underground, passing through Stratford and towards St Pancras. The amount of tunnelling underneath the built-up areas of London means that almost 25% of the entire route will be underground. Section 2 also involves new international terminals at Stratford and Ebbsfleet and substantial redevelopment at St Pancras Station. The existing station will be upgraded into a major interchange between international and domestic train services and the London Underground.

The new line passes through several large areas identified as key sites for potential inward investment opportunities. The land around King's Cross and St Pancras Stations for example, presents one of the largest inner city redevelopment opportunities in Europe and proposals include a mix of new build and renovations of existing properties throughout the area.

Outside the city, new stations in Stratford in East London and Ebbsfleet - in the Thames Gateway area - have also prompted major plans for mixed-use developments in designated 'brown field' regeneration sites. Platform Y will be a significant factor in facilitating all of the above infrastructure and regeneration developments.

2.0 Operational Requirement

Existing Arrangements

Kings Cross Station currently has eleven platforms, eight of which are capable of taking an InterCity train of up to 272 metres (Class 225 2+10). Two of these platforms are also capable of taking trains up to 325 metres (Class 373/2), but these longer trains stand off the platform and it is not possible to open all carriage doors. The other three platforms are capable of standing an 8 car Class 365, under derogation GFR.

At peak times at King's Cross all platforms are fully occupied and there is a pressing need to provide for additional services and facilities for longer London Commuter trains.

Objective

The objective is to provide a new platform of at least 300 metres in length adjacent to platform 1 under the East Side Office complex. In addition, Platform 1 will be extended. To enable the platform to be constructed the East Sidings, known colloquially as the 'Thunderbird Sidings', will need to be relocated.

Kings Cross Operations Specification

Platform Specification

The new Platform Y will be a minimum of 300m long with the capability to be extended at a later date should capacity for Class 373/2 be required.

The platform is to be designed to accommodate electric traction units only. The platform is therefore to have the capability of electrical isolation and is to be capable of taking UK1 gauge trains. Additional watering points are required for Class 225 2+10 trains.

The extended Platform 1 will be a minimum of 300m long with the capability to be extended at a later date should capacity for Class 373/2 be required. The platform is to have the capability of electrical isolation with Platform 2. Watering points will be provided in this extension to cater for Class 225 2+10 trains.

Platforms 1 to 8 are to have the capability of electrical isolation on adjacent lines, for example, platform lines 1 and 2, 3 and 4, etc. Electrical isolation is required to enable locomotive and roofline maintenance to be carried out without the need to take trains out of service.

New operating instructions to Signallers and Drivers and a sign board will be required to inform drivers of diesel trains not to enter Platform Y at the entrance.

Diesel Traction

A platforming study has indicated that the new 2006 timetable and beyond can be implemented without the need to provide for diesel traction in Platform Y and will therefore built for electric traction only. All the other platforms at Kings Cross can be used by diesel trains.

Benefits

Platform Y will bring a significant number of benefits to both performance and capacity of the ECML. These include:

- Accommodate longer trains i.e. 2+10 Class 91/225 trains.
- Accommodate additional trains.
- Meet TENS requirements for European

Interoperability
- Meet ECML RUS requirement for 7/12 service i.e. 7 long distance and 12 suburban train services per hour as opposed to the existing 6/10 service.
- Additional platform capacity.
- Improve Perturbation (delay) recovery times

3.0 Constraints on the Routing of the Platform Y Track

There are a number of constraints, which determine the available options for the alignment of the proposed Platform Y line.

At the north end, the alignment is fixed by the existing tandem turnout and the turnout for the proposed new East sidings.

There are several further constraints of the Platform Y alignment.

- An existing signal gantry stanchion approximately 30m North of the end of the existing Platform 1.
- The existing Portal for entry to the Cab Way.
- Clearance at critical points along the Cab Way.

The alignment needs to be optimised to clear the existing signal gantry and to enter the East at as shallow angle as possible.

Proposed Solution

The design improves previous proposals in a number of areas, using different radii for the new track. This results in the proposed Platform Y line running further East. This has the advantage that the line can be taken through the Cab Way portal at a shallower angle, improving clearances and avoiding alterations to the existing portal.

Alignment within Cab Way

The proposed track is aligned parallel with the East wall through the Cab Way. This gives a better visual appearance compared to previous designs, which used an increasing off-set, and also allows a standard construction detail to the east wall side.

The offset of 1700mm was chosen to allow for the construction of a derailment protection wall and to provide the maximum platform width on the opposite side.

Platform Width at North End of Train Shed

The track alignment achieves the minimum clearance to the Platform Y edge of 2000mm at the north end of the train shed. This meets the requirements of the relevant railway standards without affecting the building structure. In addition, passenger flow in this area will be reduced as the narrow area is towards the north end of the platform and passenger flow is likely to be lower, with an alternative route along Platform 1 available.

Summary

The track alignment from the back of existing points 2029 of the main line station and through to the Cab Way is dictated by:

- the alignment of the Cab Way portal and East wall
- existing signal gantries
- the need to turnout to the proposed east sidings

The final alignment design, which is proposed has a number of advantages over previous proposals. These are:

- The turnout radius for the East sidings is improved from 110 m to 121m
- Clearances through the Cab Way portal are improved and no alterations required to the existing side walls of the Portal.
- Minimun clearances through the Cab Way itself are improved to 1700mm
- The alignment within the Cab Way runs parallel to the east wall, improving aesthetics and simplifying civil engineering design.

4.0 Alignment and Clearances of Sidings

Summary

The proposed alignment for the East sidings has been altered significantly from previous proposals. This is mainly in order to avoid disturbing the existing surge chambers to the Camden sewer, and to avoid any need to demolish part of the York Way plafform.

Constraints

There are a number of physical constraints and operational requirements, which limit the available solutions for the proposed East Sidings:

- The necessary standage area for Platform Y
- The position of existing sewer surge chambers
- Existing OHLE gantry
- Existing York Road Platform
- Proposed new York Road retaining wall north of the Cab Way portal.

The operational requirements are:

- South sidings will have to be capable of holding 2no locomotives with 5m tolerance to the buffer and 5m tolerance to the switch toes (Overall length 50m).
- North sidings/head shunt to be capable of holding 1no locomotive with 5m tolerance to buffer and 5m to clearance point (Overall length 30m).

Proposed solution

The main driver in the proposed design is the need to keep the Northern head shunt clear of the existing surge chambers to the Camden sewer towards the east. These chambers are approximately 1.8m high and 2.6m diameter constructed on top of the sewer.

The proposed solution for the alignment of the new east sidings is to use a reverse curve as close as possible to the back of the turnout from the Platform Y track.

Due to butfer locking considerations it is necessary to design a short straight between the reverse curves. This straight is calculated to be a minimum length of 8.35m

5.0 Manholes and Drainage

The existing rain water pipes of the East Range run vertically down the east and west facades of the building and usually offset around the columns at mezzanine floor level to continue on the inside faces of the York Way wall and brick piers. The pipes then enter sewers running either side of the Cab Way. The design proposed to retain the existing arrangement and make modifications where this is required as a result of the new Platform Y construction.

The drainage along the east side wall will be disturbed by the provision of the new track and impact wall. Because of the restricted space between the impact wall and existing mezzanine supports, the southern part of the drainage needs to run along the top of the impact wall and discharge into the existing outfall at the south end. Maintenance manholes along the inside of the east flank wall will be located between the piers.

The drainage to the platform outside the building will take the form of covered channel drains, similar to that presently on Platform 1.

6.0 Emergency Escape

Means of Escape

Currently, emergency exits from the Eastern Range Building discharge onto Platform 1. Means of escape from Platform 1, for both passengers and office workers, is either to the north of the Eastern Range Building exiting to York Way, or to the south exiting via the concourse. The creation of Platform Y and the addition of new track removes the north exit to York Way. However, Platform Y will adopt the existing fire escape procedure for the rest of the Kings Cross Platforms, via the northern ends of the platforms. Alternatively people will escape south, along the platform and out into the Southern square area.

Fire Service Access and Rendezvous Areas

The fire strategy adapted for fire fighter access to Platform Y is similar to the strategy for access to other station platforms, i.e. rendezvous points to the south of the platforms. In addition, the southern Cab Road exit can be used for fire service access to Platform Y.

However, as part of the alternative means of escape from the northern end of the platform, the issue of fire brigade access is also being examined. At present it is proposed that the existing access ramp (taxi entrance) is partially maintained so that the fire brigade have alternative access to the Platform Y tracks from the north. This would be for fire fighting personnel only.

Structural Fire Protection and compartmentation between Platform Y and Eastern Range

The Eastern Range otfice forms part of the support structure to the roof of the main shed. Failure of which would have a significant impact on heritage values, property and operational continuity of the station. Therefore it is suggested that the minimum life safety requirement is increased so that additional protection is provided that addresses heritage and operational concerns.

It is suggested to have two-hour fire protection for all load bearing elements of the Eastern Range Structure exposed to a fire at Platform Y and a 2 hours fire resisting construction for insulation, integrity and load bearing capacity for compartmentation between Platform Y and Eastern Range.

Internal fire spread through windows of Eastern Range western mezzanine façade

In order to prevent fire spread from a fire on Platform Y penetrating through the windows of the Western mezzanine façade of the Eastern Range Building, temperature rated glazing is required in this façade.

Smoke Control

Smoke from a fire at Platform Y is to be vented into the main train shed, where the existing roof would provide a very large smoke reservoir. Stratification should not occur and smoke from a train carriage fire should accumulate beneath the roof where it will be vented.

Towards the northern end of the platform, openings towards York Way would allow any smoke to be vented direct to atmosphere.

The need to infill the openings in the eastern façade of Platform Y has been discussed. The view is that cross wind effects may increase with an additional number of openings. Therefore if additional openings are to be incorporated then the openings in the eastern façade should be infilled.

7.0 History and Current Condition of Bothy Building

The two storey building that is now known as the engineman's Bothy stands at the point where the Battle Bridge Road viaduct once crossed over the tracks to join York Way with Pancras Road, and at the point of access via ramped roads down to the main station cab road to the south and to the former York Road Station north to the north (opened in 1866, now demolished).

The 'Bothy' was originally a small, possibly single roomed red brick building with slated hipped roof and chimneystack referred to in an early plan as a Policeman's Bothy. It originally stood adjacent to the cobbled road over Battle Bridge and was built on top of the vaulted brick abutments for the iron bridge structure. When the viaduct was demolished, a new much larger two-storey yellow brick building was constructed making use of the three brick vaults at platform level and extending west and north on two floors. The first floor was built across the span of the bridge, possibly making use of the original bridge wall. The original road layout and pavements for the bridge are still visible running up to the east elevation of the extended building.

Other than the platform level vaults and the Bothy building itself, the extended building has limited architectural interest. In recent years the structure has deteriorated and remedial works to it are considered uneconomic.

The Bothy's features are all identified in the English Heritage 'Inventory of Architectural and Industrial Features' (November 1988).

As far as the main line station is concerned, no original drawings have survived which show the north portal of the cab road or the appearance of the York Way elevation when first built. The change in brickwork on the north elevation of the Eastern Range clearly shows the 1895 extension upwards for new offices and the original rustication of the side-walls.

Although there is no firm evidence, it is thought that the cab road entrance portal was originally constructed as a brick arch, possibly with simulated voussoirs (wedge shaped elements), with plain brick banding above, possibly topped by a cornice and matching the south elevation. These features were lost when the north stair was constructed to serve the new offices.

The cab road itself has undergone significant changes over the past 150 years, most significantly through the construction of the offices mentioned above and the installation of the mezzanine. It is also thought that the arcade elevation on to York Road was originally much more permeable, with openings onto York Way at regular intervals along its length, an arrangement which implies that York Way has been raised since the building was first constructed. This elevation is also thought to have housed original water closets at intervals along its length, remembering that early carriages had no onboard services and this was the point of arrival for passengers from the north, many of which would have travelled long distances.

The appearance of the cab road has been degraded over the years by ducting, barriers, cable runs, sundry station furniture and the mezzanine structure. This has reduced the apparent importance of this part of the main line station and it has consequently become something of an eyesore and a 'back-water'. It is nonetheless an important part of the station, particularly because it still retains its original carriageway function and because of the appearance of the round-arched brick arcade and its contribution to the architectural articulation of the main shed.

8.0 Future Appearance Cab Road and Cobbled Ramp

<u>Mezzanine and First Floor Soffit</u>

The only part of the mezzanine, which is original to the station is located at the north end of the East Range building. The original Cab Way had a hipped roof with heavy timber trusses. These were replaced in 1895 by the construction of the East Range offices on the first and second floors, which provided a single soffit above the original arcades. This is still visible between gridlines 31-39 and 28-29. The main part of the mezzanine level was added around 1955-1960.

It is proposed that the underside of the mezzanine and first floor of the Eastern Range will be clad with a slatted soffit finish. This would provide enough open area for sound to be absorbed by the combined acoustic/fire insulation behind. Electromagnetic shielding is provided behind the insulation. The proposed ceiling finish would provide a uniform and slightly textured appearance. Minor discolorations and dirt would be less visible than on a continuous smooth finish.

Individual elements can easily be replaced or removed if access is required to the area behind.

The finish is aligned with the new column casings and beams of the first floor level. Soffit build up below mezzanine level is restricted by the required clearance to the overhead line electrification.

The available depth below first floor is defined by the semicircular arches to the main train shed and York Way wall and consequently does not allow for a continuous soffit below the structural beams. The finish is therefore set between the structural beams, clad with the same material as the column casing. On the vertical faces of the mezzanine level, the soffit finish wraps around and continues up/down to the next level.

Platform Lighting

All lighting and services are located away from the soffit. Platform lighting is located at a constant height on the brick piers on the west side of the platform. This creates a continuous visual appearance and a consistent level of lighting along the platform. Fixing the platform lighting to the brick piers also allows for the same solution to be applied along the entire length of the platform. Calculations by Arup have shown that the platform lighting needs to be mounted on a 1 m extending arm fixed to the column casings in order to achieve required light levels.

Lighting along the York Way wall

Uplighting the inside of the York Way wall is proposed through linear fluorescent luminaires located directly behind the impact barrier between the brick piers. Light fittings will not be visible from the platform. Lighting levels will be lower than the platform lighting to provide general illumination of the space.

Brick Piers between Platform Y and Platform 1

The brickwork of the original masonry piers will be repaired and cleaned. A new full height metal casing will be installed to cover the fire protection of the mezzanine steel supports and will provide routes for services connecting to the platform ducts. At high level, the casings will contain the platform speakers recessed behind acoustically transparent material. Similar casings are proposed along the inside of the York Way wall.

Internal Elevation of York Way wall

Currently, the internal face of the eastern wall contains a number of stores, a boiler room and other structures that have been erected between the brick piers. It is proposed to demolish some of these and enhance the appearance of the internal wall. Paint will be removed from the masonry and the existing brickwork repaired and cleaned.

Derailment Wall

The proximity of the east side offices mezzanine floor columns requires the provision of a collision impact wall to minimise damage caused by a possible derailment. The exposed concrete of the east face of the wall will be visible from the platform and provide a clear distinction between the brick face of the internal York Way wall and the new construction

York Way Wall openings

Two new openings to the York Way wall are proposed as part of the Platform Y works. The new openings provide direct views into the new Platform from York Way and help to animate the otherwise monotonous facade along York Way.

Platform Finish

The specification will be developed in collaboration with Enhancement and Landscape teams. Various options have been investigated.

Mezzanine Windows

The 1950s windows and window framing of the mezzanine level to the main train shed side will be upgraded as part of the Platform Y works in order to meet the required fire resistance. New windows will use a narrow framing profile in order to minimize the visual appearance and to help accentuate the rhythm of the original arcade.

Bothy Building and Cobbled Ramp

Given the restrictions of the site, the demolition of the Bothy building and adjacent structures cannot be avoided.

The cobbled ramp leading to York Way has to be narrowed to provide the required clearances from the new track. The current fire strategy requires part of the ramp to be maintained to provide emergency access to the north end of the Eastern Range and Platform Y. The ramp would be adjusted to be slightly steeper in order to meet the new level of the proposed impact wall. A new retaining wall will be constructed with brick facing to match the existing brick walls.

4.0 Technical Design Proposals

1.0 Mechanical Remedial Works

All existing mechanical services passing through the taxi rank will have to be removed. They include:

- Heating boilers serving mezzanine offices
- Gas Services
- Split direct expansion condenser units
- Ventilation ducts and fans from electrical transformer rooms

Heating Boilers

Boilers located in a small boiler room towards the south end of the taxi rank and all its associated pipework are to be stripped out. It is believed that this heating system serves fan convectors in the office spaces of the mezzanine floor above.

Consequently these fan convectors and the pipes serving them should also be stripped out and electric heaters put in their place. Nominal heat load for the mezzanine level has been estimated at 200 kW based on a loading of 125 w/m².

Gas Services

The existing gas pipe currently runs around the Bothy from the north along the length of the taxi rank at high level connecting to the aforementioned boiler and into the south end of the station. It is proposed to strip this pipe out of the taxi rank and a new incoming main taken from York Way. The new gas main will be brought into the plant room next to the station manager's office to connect to the existing gas pipe feeding areas to the south.

Direct Expansion Split Condenser Units

There are several existing condensing units that reject heat from offices on the mezzanine floor fixed at high level in the taxi rank. These units are fairly old and dilapidated, therefore it is proposed to replace these condensing units and fit new ones in the archways onto York Way.

Ventilation Ducts

Existing ventilation ducts and fans cooling the electrical transformer room are located at high level in the taxi rank and are to be stripped out in their entirety.

A new axial extract fan and duct will be installed in the existing transformer room at high level to provide ventilation for cooling the room. Fresh air will be taken from louvers onto York Way via transfer grilles and exhausted back onto York Way at the other end of the transformer room.

Platform Ventilation

The Platform Y space will be naturally ventilated in the same manner as the existing platforms; the platform will serve electric trains only. Smoke extract requirements have been dealt with as part of the Fire Strategy.

2.0 Electrical and Communications Services

Current Design Statement

HV Supplies, Switchgear and Transformers

The existing high-level cable route will be removed and re-routed or new cables installed via the new cable duct and pit system at platform level. Existing cable terminations will be broken down, removed and new heat shrink cable boxes installed to accept new and re-routed cables. All existing protection relays will be recalibrated; busbar connections and termination will be checked for security to the manufacturers recommendations. If possible transformer cable terminations will be modified to accept cables from above, drawing 54200/54/E/L/0610 details these refurbishment requirements further. However most of the equipment is life expired and it is recommended that the HV switchgear and transformers be renewed as discussed in report EW101.

During the alterations precautions must be taken to ensure that suitable alternative temporary supplies are provided to maintain station and railway operational equipment and services. These may take the form of alternative HV/LV power supplies from another source or/and mobile/temporary generation equipment.

The 850V shore supply sub-station will be decommissioned and all associated wiring removed. This includes removing HV cable 6 linking the domestic and 850Vshore supply sub-stations. Cable 19 will be redirected to replace the cable 6 connection at the domestic HV switchpanel thus re-completing the HV network.

LV Switchgear

The 400V shore supply and domestic switchboards currently accept incoming and outgoing cables from below. The switchboards require modification to accept cables from above. Cables from the respective transformers will be replaced and outgoing shore supplies will have new tails from the switchboard, which will be jointed within the service tunnel, to the existing cables. All retained domestic supplies will be renewed.

Drawing 54200/54/E/L/0610 details the refurbishment requirements further. However most of the equipment is life expired and it is recommended that the LV switchgear and transformers be renewed as discussed in report EW101.

Services Distribution

All electrical and communications services for the platform area will be distributed via the new cable duct and pit system which extends the length of the covered platform area, it also provides routes for the diversion of the sub-station cabling.

The cable ducts provide routes for the following services:

- HV Supplies
- LV Sub-mains
- Platform Normal and Emergency Lighting
- Small power outlets
- CCTV
- CIS/Clocks
- Telephone/Help Points
- Fire Alarm/PA/VA

400V shore supplies are routed via a riser to the subway before continuing to their respective platform locations.

The cable duct and pit system provides two separate parallel containment routes:

The first serves the HV and LV cabling with a shielded signals route at the lowest level. The route continues the length of the covered platform. Three ducts cross the concrete constructed permanent way near grid line 42 for connection

to the remaining section of cables 2 & 3. The ducts allocated for the signals continue to the end of the finger platform; their final destination to be defined by WYG. This route has been rationalised to suit the removal of the 850V shore supplies.

The second containment system provides a main local services route throughout the platform and distributes locally to services located at each column. Cable pits are located to serve every fourth column and those flanking it. A reduced duct arrangement continues the length of the platform finger to serve the lighting columns.

It should be noted that the cable pit dimensions allow for reach access only in a bid to reduce the over pit dimensions as agreed with NR

Services located at each column are supplied from the pits via multiple 75mm HDPE cable ducts, which rise up to within the column casing. Main risers are located at columns 22, 23 & 24 for routes to the sub-station and shore supply cabling, these are supplied from the draw pits via 150mm HDPE cable ducts.

Lighting

Flood type luminaires will be located at each column to provide illumination of the platform and achieve an average illumination of 150 lux as required by the Rail Group Standards. Each luminaire will be mounted on a 1m extending arm fixed to the column casing and consist of a single 150watt HST-DE lamp with associated electronic control gear integral to the fitting. An auxiliary lamp will also be present to provide emergency lighting coverage, which will be supplied from a new central battery system in the event of a overall or circuit power failure. The battery equipment is located at mezzanine level in a newly formed room.

Possible Luminaire:

Manufacturer: Iguzzini
Model: Modified 7699 PLATEA

The East wall will be illuminated by linear fluorescent luminaires mounted at low level incorporated into the architectural finish illuminating between the brick piers. The luminaires will utilise T5 technology to provide an efficient solution and be rated IP65 to suit the dirty environment. The East Wall lighting will require a line possession every 2 years for bulk lamp replacement

Possible Luminaire:

Manufacturer: Zumtobel
Model: 22 156 656

The exposed platform area will consist of new lighting columns located at 12m spacing. The columns will have extending twin arms to provide illumination of platforms Y and 1 and be of the raise and lower type. The selection of these luminaires and column locations should be co-ordinated with the station enhancement project. Minimum platform edge illumination levels of 40 lux will be achieved.

CCTV

5 no. CCTV cameras are required to provide general surveillance of the whole platform, in addition to those associated with the help points. The location of the 5 no. cameras has not been shown on the drawings. The locations will be determined through site survey and consultation with all relevant parties.

Customer Information/Clocks

A Passenger Information Display will be provided at the head of the platform, identical to that currently provided at the head of the other platforms. A station wide Customer Information System will replace this under the future main station enhancement scheme. Two clock positions are located along the length of the platform.

Help Points

Indicative locations are shown for future help point locations, these would be provided as part of the King's Cross Station Enhancement Works at a later date.

Public Address and Voice Alarm

Loud speakers for the platform will be located within the new column casings behind an acoustically transparent material. Speakers are located to achieve intelligibility and sound levels required by the Railway Standards.

Fire Detection And Alarm

The concourse and platform areas operate under a manual fire detection system; platform 1 currently has manual call points throughout its length and will provide the necessary coverage for platform Y.

Lift Requirements

Two lifts are to be provided for the Eastern Range buildings one each at South and North ends of the building but do not form part of Platform Y works.

Recommendations/Issues

- Further co-ordination of luminaire in East wall crash barrier to be carried out.
- Transformers and switch panels have life expired and renewal is recommended.
- A further investigation will be required into the condition of the existing PA racks/ amplifiers. An upgrade may be required to those amplifiers serving the taxi rank zone when the speakers are replaced for the platform Y installation.
- A further investigation will be required into the condition of the existing CCTV racks.
- Electrical earthing interface between OLE, shore and domestic supplies to be agreed.

3.0 Public Health

Diversion of Existing Above Slab Drainage

At present there are a number of drains that drop to Platform Y level and connect into the existing drainage system that runs below the existing taxi road/paving area. These above ground drains are described below with the proposed works to be carried out to them. Please note that proposed new below ground drainage diversions are by others.

Rainwater Pipes on East Facade of Eastern Range

There are existing 100mm diameter rainwater pipes that drop down the external face of the eastern range building at approximately twelve metre centres. These rainwater pipes offset at high level ground floor into the taxi road area and drop on the east face internal walls and columns to discharge directly into existing drain points or open type gullies at ground level. The existing drain points and gullies then connect into the existing below ground combined drain that runs below the eastern side of the taxi road.

All these rainwater pipes of which there are a total of twenty one must be retained. To accommodate the new collision wall to the new Platform Y tracks it is intended to remove all the open type gullies and replace them with cast in drain points that will need to connect to the existing drainage system. Part of the existing drainage system cannot be accommodated beneath the collision wall between grid lines 5-17 and therefore this drain will run above the level of the collision wall.

Foul/Condesate/Waste Drainage on East Face of Eastern Range

There is a variety of existing foul, condensate and waste drainage stacks that drop on the internal walls and columns to discharge directly into existing drain points or open type gullies then connect into the existing below ground combined drain that runs below the eastern side of the taxi road.

All these drains that are not redundant are to be retained. To accommodate the new collision wall to the new Platform Y tracks it is intended to remove all the open type gullies and replace them with cast in drain points that will need to connect to the existing drainage system. Part of the existing drainage system cannot be accommodated beneath the collision wall between grid lines 5-17 and therefore this drain will run above the level of the collision wall.

High Level Drainage

There are existing drains that run across the existing taxi road at high level. All these drains are to be removed. Some of these drains fall directly from the existing toilet area at mezzanine level in which case the existing mezzanine toilets will need to be revised to allow for the routing of all drainage within this area at low level mezzanine.

Rainwater/Drainage Pipes on West Face of Eastern Range

At present there are a number of existing rainwater pipes that drop from the roof area above. The majority otfset across the existing columns at high level ground floor to drop to existing drain points and final connection into an existing below ground drain that runs beneath the western side of the taxi road. It is not intended to alter these rainwater pipes or foul/ waste pipes and associated drain point positions.

Proposed New Drain Points

As part of the Platform Y contract it is proposed to install capped off drain points on both sides of the new rail track to allow for future connections from the proposed redesigned eastern range building above.

New Platform Water Points

New fill points for train services will be provided at edge of the trackside platform. These fill points will be fed via new dedicated distribution pipework served via a new dedicated boosted water storage tank that is to be located on the Platform Y slab-track behind the buffer stops.

Existing Wet Fire Risers

The existing wet fire risers that are served from the water main and rise up to serve the Eastern Range building are to be retained.

Existing Cold Water Mains System

The existing cold water mains system that rises to serve the East Range building is to be retained.

Cold Water Mains Service for Future Use

As part of the Platform Y contract capped/valved water main services are to be provided at low level for the future east range redevelopment.

4.0 Structural Engineering Considerations

Architectural Proposals

The structural engineering considerations associated with the Platform Y Level 4 Architectural design proposals are as follows.

East Flank Wall Additional Penetrations Gridlines 32-38

Enlargement of the east flank wall openings between gridlines 32-33 and 37-38 is proposed by removal of the approximately 450mm thick brickwork wall panels from the level of the arch springing down to the top of the lower, thickened wall section, as indicated on drawing number AL1-006.

A structural appraisal has been carried out to assess the effect of the brickwork panel removal on the vertical loadbearing capacity of the flank wall and the stability performance in both the lateral and longitudinal directions. This appraisal confirms that removal of two such discrete panels (not side-by-side) is possible without detrimental effect to the performance of the remaining structure. This appraisal has taken into account the cumulative effects resulting from the proposals of the King's Cross Station Enhancement Project and the King's Cross Station East and West Range Refurbishment Project.

The removal of the two discrete panels will not require any compensatory strengthening works to the remaining structure. Movement monitoring will be required prior to and during the demolition. The demolition will be such that no distress is caused to the remaining brickwork and no reduction in cross-sectional area of the brickwork piers occurs. The top of the thickened wall section to be retained will require reinstatement in matching brickwork to suit the Architectural details.

Platform Y Engineering Proposals

The structural engineering considerations associated with the Platform Y Level 4 Engineering design proposals are as follows.

Effect of the Proposed Platform Y Works on East Range Structure

A Preliminary Assessment of the Effect of Platform Y on the East Range Structure has been carried out; the findings of which are presented in Document P301. The Executive Summary of this report is as follows.

A preliminary ground movement assessment has been carried out to predict the vertical ground movements resulting from the construction of Platform Y and to test their effect on the East Range, and consequently on the train shed roof. This assessment confirms that the actual ground interaction developed in order to maintain structural equilibrium is complex local to the East Range; and critical to the structural performance. This is especially the case towards the northern end of the station due to the elevated level of York Way.

Preliminary calculations indicate that vertical ground movements due to the vertical load effects resulting from the construction of Platform Y are likely to have a negligible effect on the structural performance of the East Range and, consequently, the train shed roof.

However, horizontal, and any associated rotational, movements of the York Way wall due to horizontal ground movements resulting from the construction of Platform Y could be sufficiently significant to affect the performance of the East Range and the train shed roof.

The effect of the Platform Y construction should be included in a Level 3 ground movement assessment for King's Cross Mainline Station, which would take into account the etfects of this and other construction carried out within and in the vicinity of the station (e.g. LUL tunnels).

It is important that the existing factors of safety for wall stability, which are considered to be relatively low at the northern end, are maintained both during construction and in the permanent condition. Any horizontal or rotational movements associated with a reduction in the factor of safety will increase stresses in the already highly stressed York Way wall, and thus impact on the support to the train shed roof and the Engineering Consultant should confirm that the Platform Y works will not reduce the existing factors of safety. The predicted temporary and permanent horizontal, and associated rotational, ground movements of the existing structure resulting from the construction of Platform Y should be defined by the Engineering Consultant such that the impact can be assessed as part of a full structural analysis of the station performance in combination with the effect of other proposed works at King's Cross.

Calculations indicate that the foundation stability is very sensitive to changes in the assumed soil parameters and groundwater conditions. The information available from previous site investigations carried out at King's Cross Station does not adequately define the existing ground conditions local to the East Range. A detailed site investigation is required to support the design assumptions.

5.0 Long Lead Items

The architectural design does not require any long lead items.

Appendix I Listed Building / Planning Application Drawings

King's Cross Station
Platform Y

Final Report

Network Rail
John McAslan + Partners
Arup

August 2006

DRAWING ISSUE SHEET

JOB No. 1163

PROJECT King's Cross Station

SHEET 1 Platform Y Drawings

DRG No.	TITLE	SIZE	SCALE	REVISIONS
AL1-00G-S	Proposed Ground Floor Plan - Southern Area	A1	1:200	05
AL1-00G-C	Proposed Ground Floor Plan - Central Area	A1	1:200	05
AL1-00G-N	Proposed Ground Floor Plan - Northern Area	A1	1:200	05
AL1-RCP-S	Proposed Reflected Ceiling Plan - Southern Area	A1	1:200	05
AL1-RCP-C	Proposed Reflected Ceiling Plan - Central Area	A1	1:200	05
AL1-00M-S	Proposed Mezzanine Floor Plan - Couthern Area	A1	1:200	04
AL1-00M-C	Proposed Mezzanine Floor Plan - Central Area	A1	1:200	04
AL1-00M-N	Proposed Mezzanine Floor Plan - Northern Area	A1	1:200	04
AL1-005	Proposed East Elevation & Section RR	A1	1:200	05
AL1-006	Proposed East Elevation & Section RR	A1	1:200	05
AL1-007	Proposed Section SS & TT	A1	1:200	05
AL1-008	Proposed Section SS & TT	A1	1:200	05
AL1-009	Proposed North & South Elevations & Sections HH & KK	A1	1:200	05
AL1-DET-1	Proposed Plan & RCP Detail	A1	1:50	03
AL1-DET-2	Proposed Section HH	A1	1:50	03
AE1-00G-S	Existing Ground Floor Plan - Southern Area	A1	1:200	05
AE1-00G-C	Existing Ground Floor Plan - Central Area	A1	1:200	05
AE1-00G-N	Existing Ground Floor Plan - Northern Area	A1	1:200	05
AE1-00M-S	Existing Mezzanine Floor Plan - Southern Area	A1	1:200	05
AE1-00M-C	Existing Mezzanine Floor Plan - Central Area	A1	1:200	05
AE1-001-C	Existing First Floor Plan - Central Area	A1	1:200	05
AE1-005	Existing East Elevation & Section RR	A1	1:200	05
AE1-006	Existing East Elevation & Section RR	A1	1:200	05
AE1-007	Existing Section SS & TT	A1	1:200	05
AE1-008	Existing Section SS & TT	A1	1:200	05
AE1-009	Existing North & South Elevations & Sections HH & KK	A1	1:200	05
AE1-DM00G-S	Demolition Ground Floor Plan - Southern Area	A1	1:200	03
AE1-DM00G-C	Demolition Ground Floor Plan - Central Area	A1	1:200	03
AE1-DM00G-N	Demolition Ground Floor Plan - Northern Area	A1	1:200	02

Appendix I
Listed Building / Planning Application Drawings

King's Cross Station
Platform Y

Final Report

Network Rail
John McAslan + Partners
Arup

August 2006

Platform 8

Platform 7

Platform 6

Platform 5

Platform 4

Platform 3

Platform 2

Platform 1

Platform Y

Access/Escape Stair for Eastern Range Offices

Escape Stair from Service Tunnel

Access cover

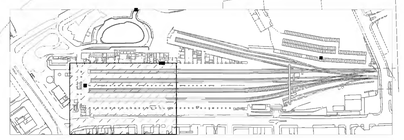
Vehicle Access to Platform

York Way

York Curve Tunnel Shown Dotted

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Continued on AL2-00G-C



Do not scale from this drawing.
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Revisions

Rev.	Date	Description	Drawn	Checked
00	03.10.2003	Outline Design	JMP	TK
01	31.10.2003	Level 4 Issue	JMP	TK
02	17.11.2003	Information	JMP	TK
03	28.11.2003	Draft Listed Building Documentation	JMP	TK
04	19.12.2003	Information	JMP	TK
05	14.08.2006	Issued for Planning/Listed Building Application	JMP	KM

King's Cross Station - Platform Y
Proposed Ground Floor Plan - Southern Area

scale	1:200 at A1	job no.	1163
date	03.10.2003	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	KM
drawing no.	AL1-00G-S	revision	05

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Platform 8

Platform 7

Platform 6

Platform 5

Platform 4

Platform 2

Platform 1

Platform Y

Access cover

1 AL1-009

Escape from Eastern Range

4 AL1-009

New lighting pole

Access cover

2 AL1-008

1 AL1-007

Bus facilities

Bus facilities

Cobbled Ramp (Fire Brigade access)

Cobbled Area (Former Battle Bridge Road)

York Way

2 AL1-009

Bus facilities

3 AL1-009

New opening with glass infill panel

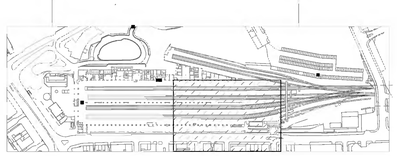
York Curve Tunnel Shown Dashed

25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42

Continued on AL1-00G-S

Wharfdale Road

Continued on AL1-00G-N



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05	14.08.2006	Issued for Listed Building/Planning Application	JMP	KM

King's Cross Station - Platform Y
Proposed Ground Floor Plan - Central Area

scale	1:200 at A1	job no.	1163
date	03.10.2003	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	TK
drawing no.	AL1-00G-C	revision	05

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Platform 8

Platform 7

Platform 6

Platform 5

Platform 4

Platform 3

Platform 2

Platform 1

Platform Y

signal gantry

signal gantry

signal gantry

Platform outline if extended to 325 m length

Ramp

New lighting pole

Access cover

Outline of Gasworks Tunnels shown Dashed

Signal Box & Jarvis Personnel

Goods Way

Relay Room

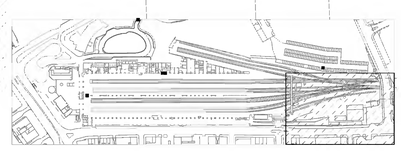
Entrance to Disused York Tunnel

Cobbled Ramp

Standby Generator

York Way

Continued on AL1-00G-C



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05	14.08.2006	Issued for Planning/Listed Building Application	JMP	KM

King's Cross Station - Platform Y t PA
Proposed Ground Floor Plan - Northern Area

scale	1:200 at A1	job no.	1163
date	03.10.2003	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	KM
drawing no.	AL1-00G-N	revision	05

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Stainless Steel 'Bow Wire' Anchor

Disc Insulator above Buffers

Overhead Electric Line

1 AL1-006

2 AL1-DET-/

Slatted soffit finish

2 AL1-005

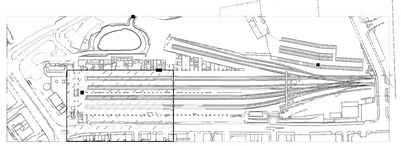
Platform Y

2 AL1-007

1 AL1-008

1 AL1-009

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25



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05	14.08.2006	Issued for Listed Building/Planning Application	JMP	KM

King's Cross Station - Platform Y
Prop Reflected Ceiling Plan - Southern Area

scale	1:200 at A1	job no.	1163
date	03.10.2003	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	KM
drawing no.	AL1-RCP-S	revision	05

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Slatted soffit finish

1 AL1-005

Platform Y

2 AL1-008

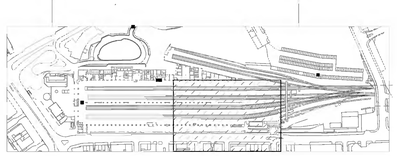
1 AL1-007

4 AL1-009

3 AL1-009

25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42

Continued on AL1-RCP-S



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04	19.12.2003	Information	JMP	TK
05	14.04.2006	Issued for Listed Building / Planning Apllication	JMP	KM

King's Cross Station - Platform Y
Prop Reflected Ceiling Plan - East Side - Central Area

scale	1:200 at A1	job no.	1163
date	03.10.2003	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	KM
drawing no.	AL1-RCP-C	revision	05

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Platform 8

Platform 7

Platform 6

Platform 5

Platform 4

Platform 3

Platform 2

Platform 1

Access/Escape Stair for Eastern Range Offices

1 AL1-008

2 AL1-009

2 AL1-007

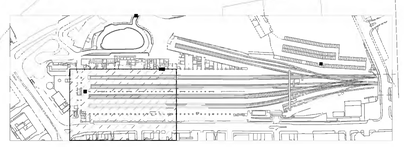
1 AL1-008

2 AL1-008

1 AL1-009

York Way

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25



Continued on AL1-00M-C

0 2.00m 10.00m 20.00m

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Revisions

Rev.	Date	Description	Drawn	Checked
00	31.10.2003	Level 4 Issue	JMP	TK
01	17.11.2003	Information	JMP	TK
02	28.11.2003	Draft Listed Building Documentation	JMP	TK
03	19.12.2003	Information	JMP	TK
04	14.08.2006	Information	JMP	KM

King's Cross Station - Platform Y
Proposed Mezzanine Floor Plan - Southern Area

scale	1:200 at A1	job no.	1163
date	31.10.2003	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	KM
drawing no.	AL1-00M-S	revision	04

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Platform 8

Platform 7

Platform 6

Platform 5

Platform 4

Platform 2

Platform 1

Platform Y

1 AL1-009

2 AL1-008

1 AL1-007

4 AL1-009

2 AL1-006

3 AL1-009

York Way

Cobbled Area (Former Battle Bridge Road)

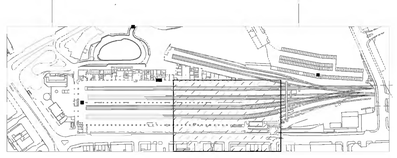
York Curve Tunnel Shown Dashed

25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42

Continued on AL1-00M-S

Wharfdale Road

Continued on AE1-00M-N



0 2.00m 10.00m 20.00m

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04	14.08.2006	Issued for Listed Builing / Planning Application	JMP	KM

King's Cross Station - Platform Y
Proposed Mezzanine Floor Plan - Central Area

scale	1:200 at A1	job no.	1163
date	31.10.2003	drawing by	JMP
drawing status	Listed Builing/Planning Application	checked by	KM
drawing no.	AL1-00M-C	revision	04

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Platform 8

Platform 7

Platform 6

Platform 5

Platform 4

Platform 3

Platform 2

Platform 1

Platform Y

Outline of Gasworks
Tunnels shown Dashed

Signal Box

Goods Way

Relay Room

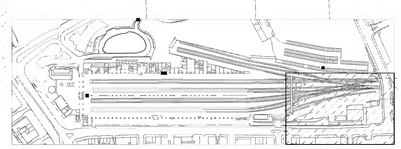
Entrance to Disused
York Tunnel

Cobbled Ramp

Standby Generator

York Way

Continued on AL1-00M-C



0 2.00m 10.00m 20.00m

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03	19.12.2003	Information	JMP	TK
04	14.08.2006	Issued for Listed Building / Planning Application	JMP	KM

King's Cross Station - Platform Y ıt PA
Proposed Mezzanine Floor Plan-East Side-Northern Area

scale	1:200 at A1	job no.	1163
date	31.10.2003	drawing by	JMP
drawing status	Listed Building/Plannnig Application	checked by	KM
drawing no.	AL1-00M-N	revision	04

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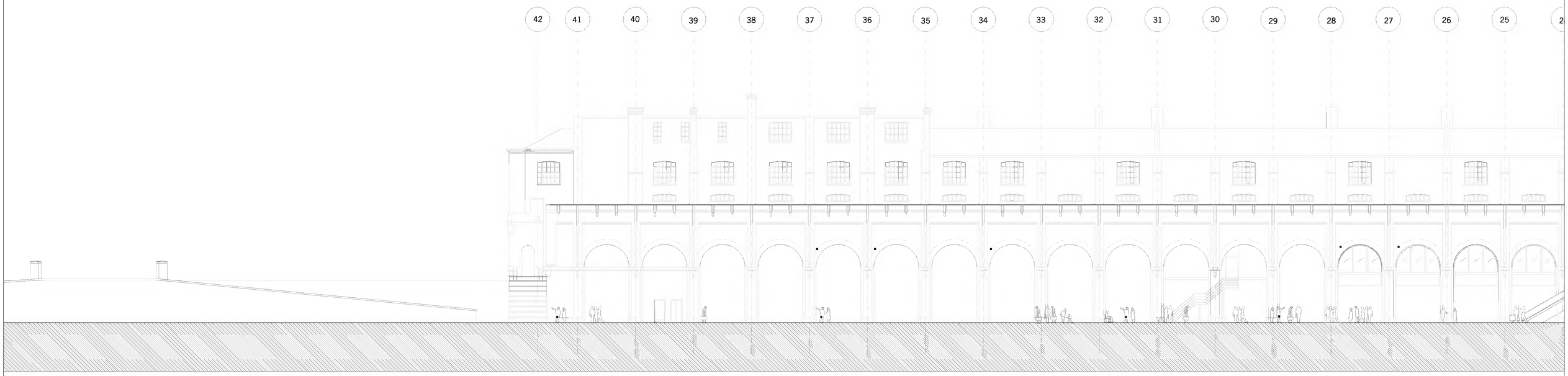
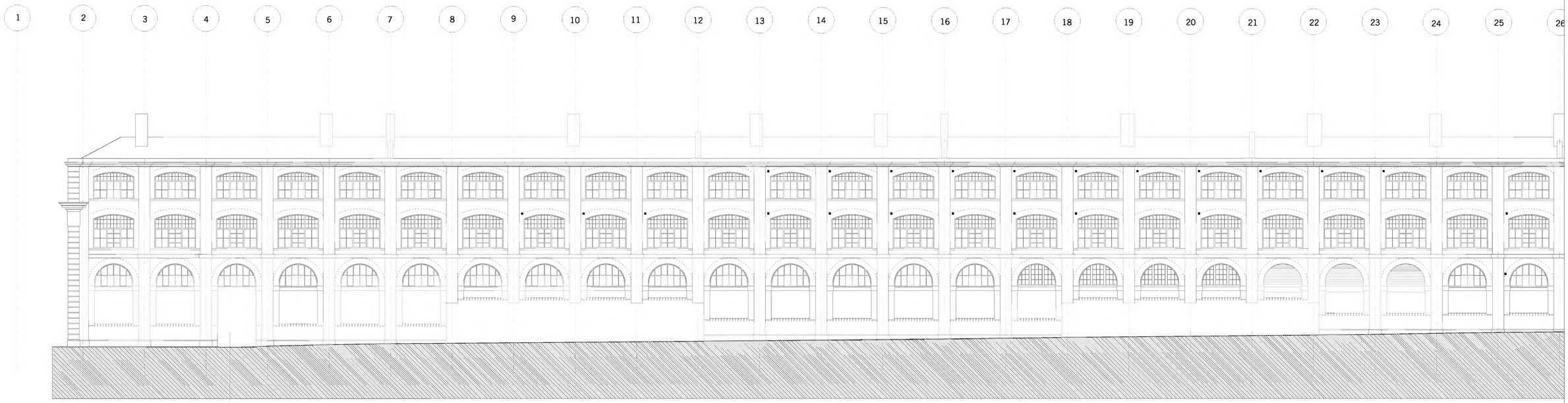


1 PROPOSED SECTION R-R

1:200 PROSECtix-b-ER-RR-0807.dgn



2 PROPOSED EAST ELEVATION

1:200 PROELEtx-b-ER-EAST-0807.dgn

0 2.00m 10.00m 20.00m

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05	14.08.2006	Issued for Listed Building / Planning Application	JMP	KM

King's Cross Station - Platform Y
Proposed East Elevation & Section R-R

scale	1:200 at A1	job no.	1163
date	03.10.2003	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	KM
drawing no.	AL1-005	revision	05

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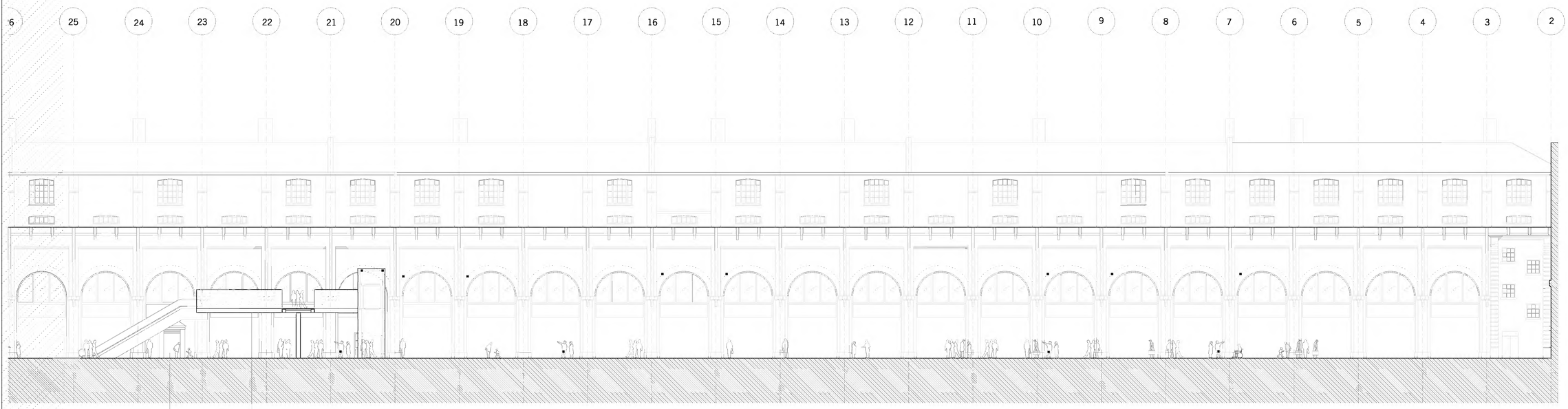
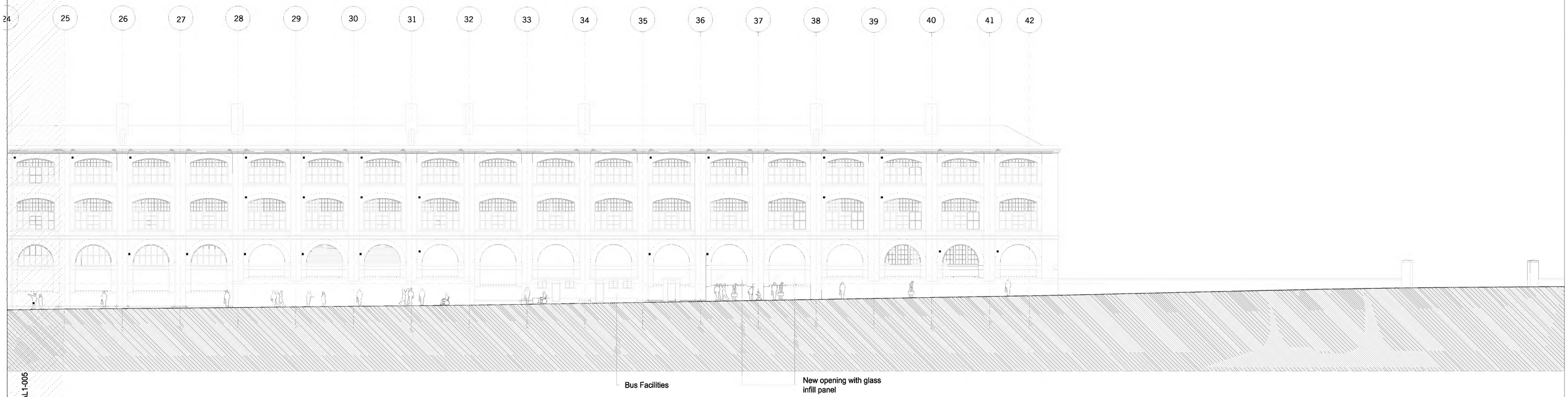


1 PROPOSED SECTION R-R

1:200 PROSECIix-b-ER-RR-0807.dgn



2 PROPOSED EAST ELEVATION

1:200 PROELEIx-b-ER-EAST-0807.dgn

Continued on AL1-005

0 2.00m 10.00m 20.00m

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05	14.08.2006	Issued for Listed Building / Planning Application	JMP	KM

King's Cross Station - Platform Y
Proposed East Elevation & Section R-R

scale	1:200 at A1	job no.	1163
date	03.10.2003	drawing by	JMP
drawing status	Listed Building / Planning Application	checked by	TK
drawing no.	AL1-006	revision	05

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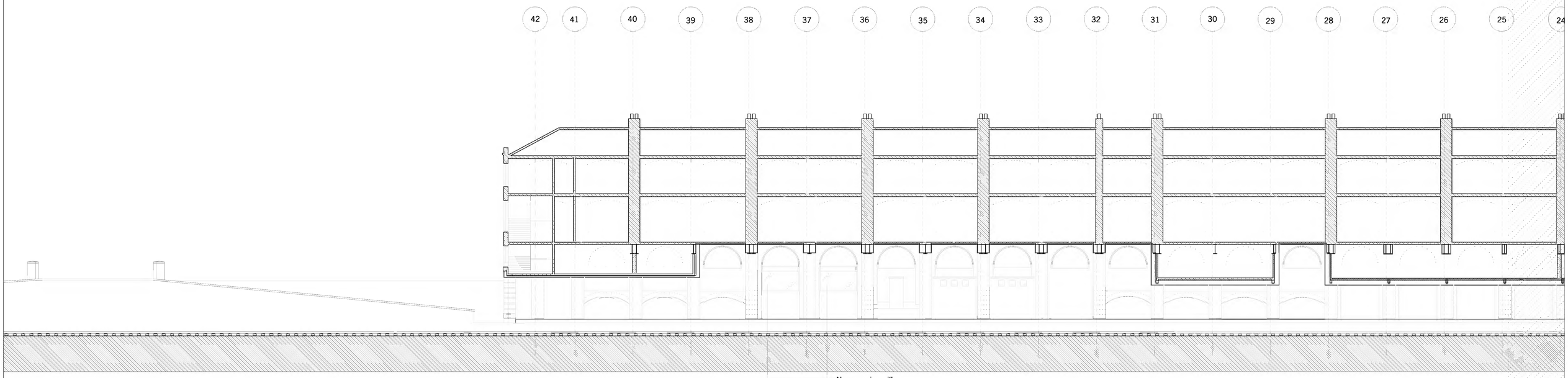
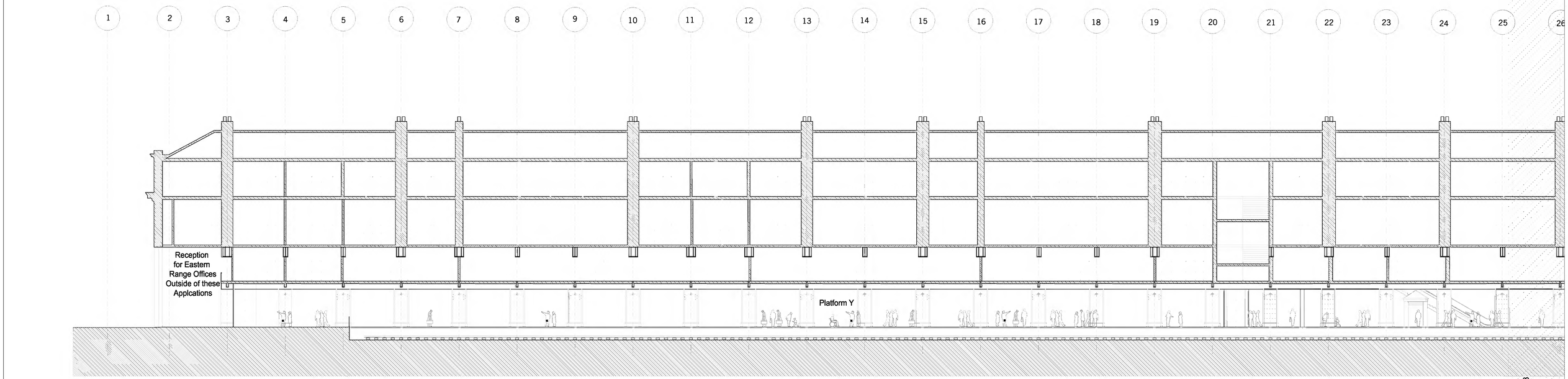


1 PROPOSED SECTION T-T

1:200 PROSECtix-b-ER-TT-0807.dgn



2 PROPOSED SECTION S-S

1:200 PROSECtix-b-ER-SS-0807.dgn

0 2.00m 10.00m 20.00m

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04	19.12.2003	Information	JMP	TK
05	14.08.2006	Issued for Listed Building / Planning Application	JMP	KM

King's Cross Station - Platform Y
Proposed Section S-S and T-T

scale	1:200 at A1	job no.	1163
date	03.10.2003	drawing by	JMP
drawing status	Issued for Listed Building / Planning Application	checked by	TK
drawing no.	AL1-007	revision	05

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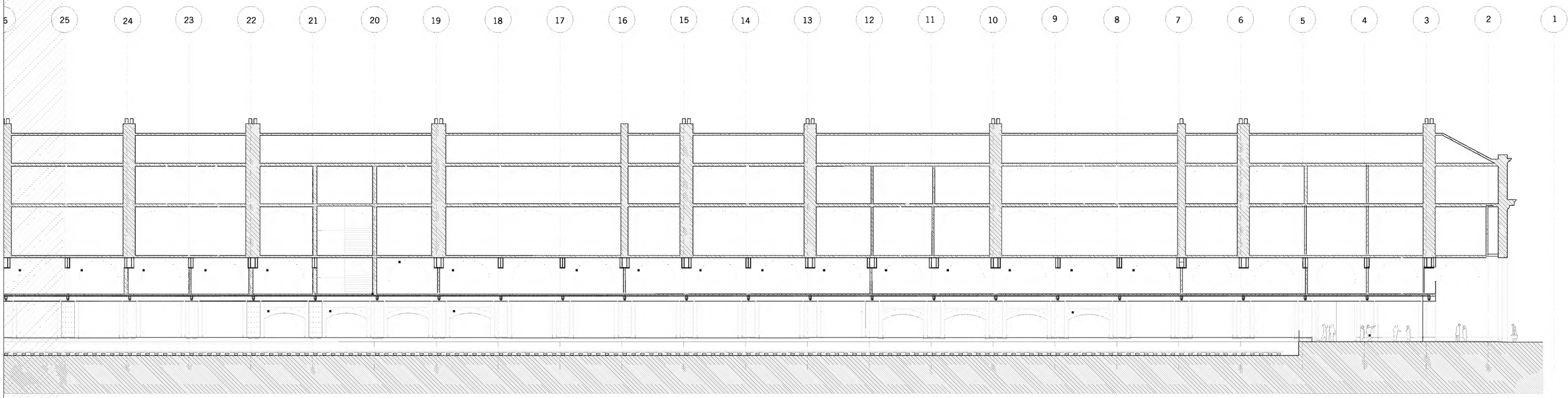
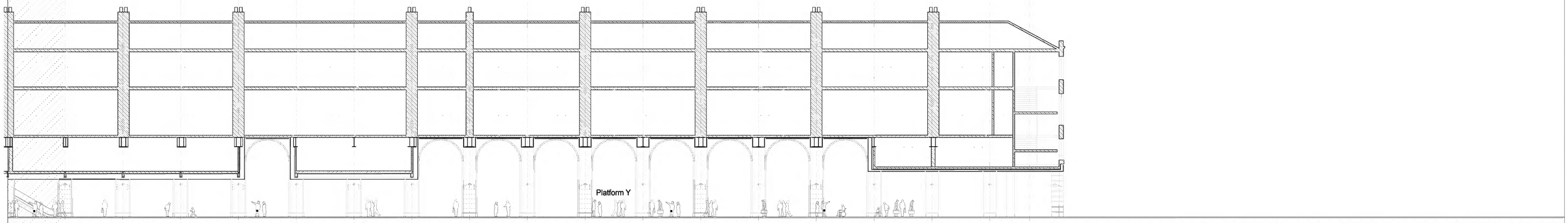


1 PROPOSED SECTION T-T
1:200 PROSECtix-b-ER-TT-0807.dgn



Continued on AL1-007

2 PROPOSED SECTION S-S
1:200 PROSECtix-b-ER-SS-0807.dgn

0 2.00m 10.00m 20.00m

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05	14.08.2006	Issued for Listed Building / Planning Application	JMP	KM

King's Cross Station - Platform Y
Proposed Section S-S and TT

scale	1:200 at A1	job no.	1163
date	03.10.2003	drawing by	JMP
drawing status	Issued for Listed Building / Planning Application	checked by	KM
drawing no.	AL1-008	revision	05

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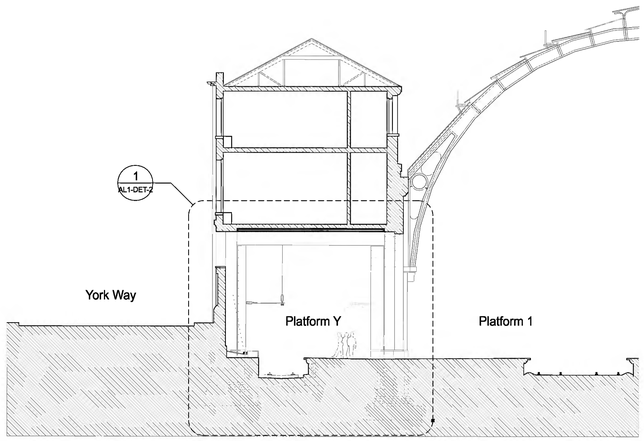
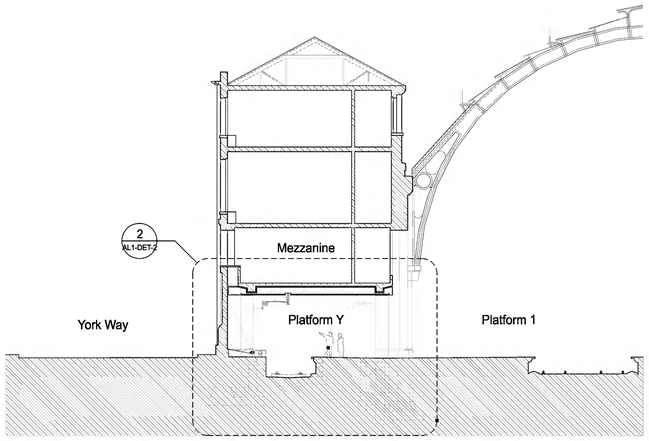
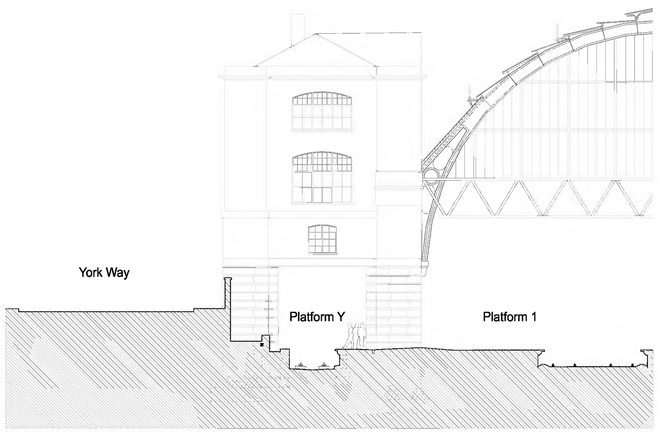


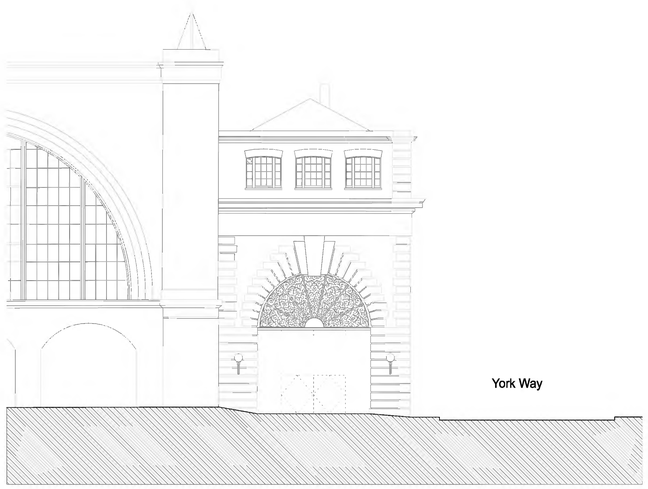
3 PROPOSED SECTION H-H
1:200 PROSECtix-b-ER-HH-0807.dgn



1 PROPOSED SECTION K-K
1:200 PROSECtix-b-ER-KK-0807.dgn



4 PROPOSED NORTH ELEVATION
1:200 PROELEiw-b-ER-NORTH-0807.dg



2 PROPOSED SOUTH ELEVATION
1:200 PROELEiw-b-ER-SOUTH-0807.dg

0 2.00m 10.00m 20.00m

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04	19.12.2003	Information	JMP	TK
05	14.08.2006	Issued for Planning / Listed Building Application	JMP	KM

King's Cross Station - Platform Y
Proposed North & South Elevations & Sections H-H & K-K

scale	1:200 at A1	job no.	1163
date	03.10.2003	drawing by	JMP
drawing status	Planning/Listed Building Application	checked by	TK
drawing no.	AL1-009	revision	05

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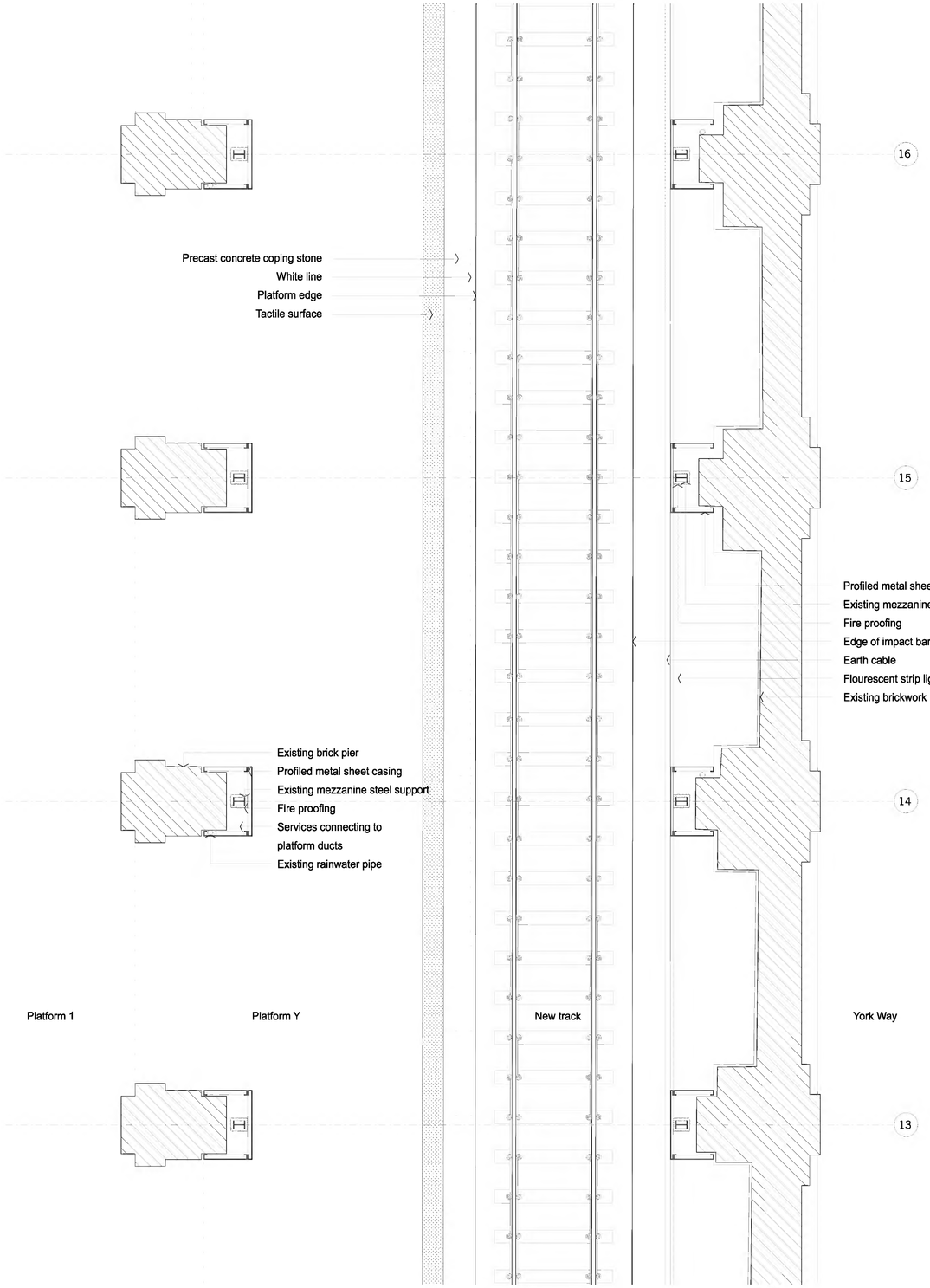
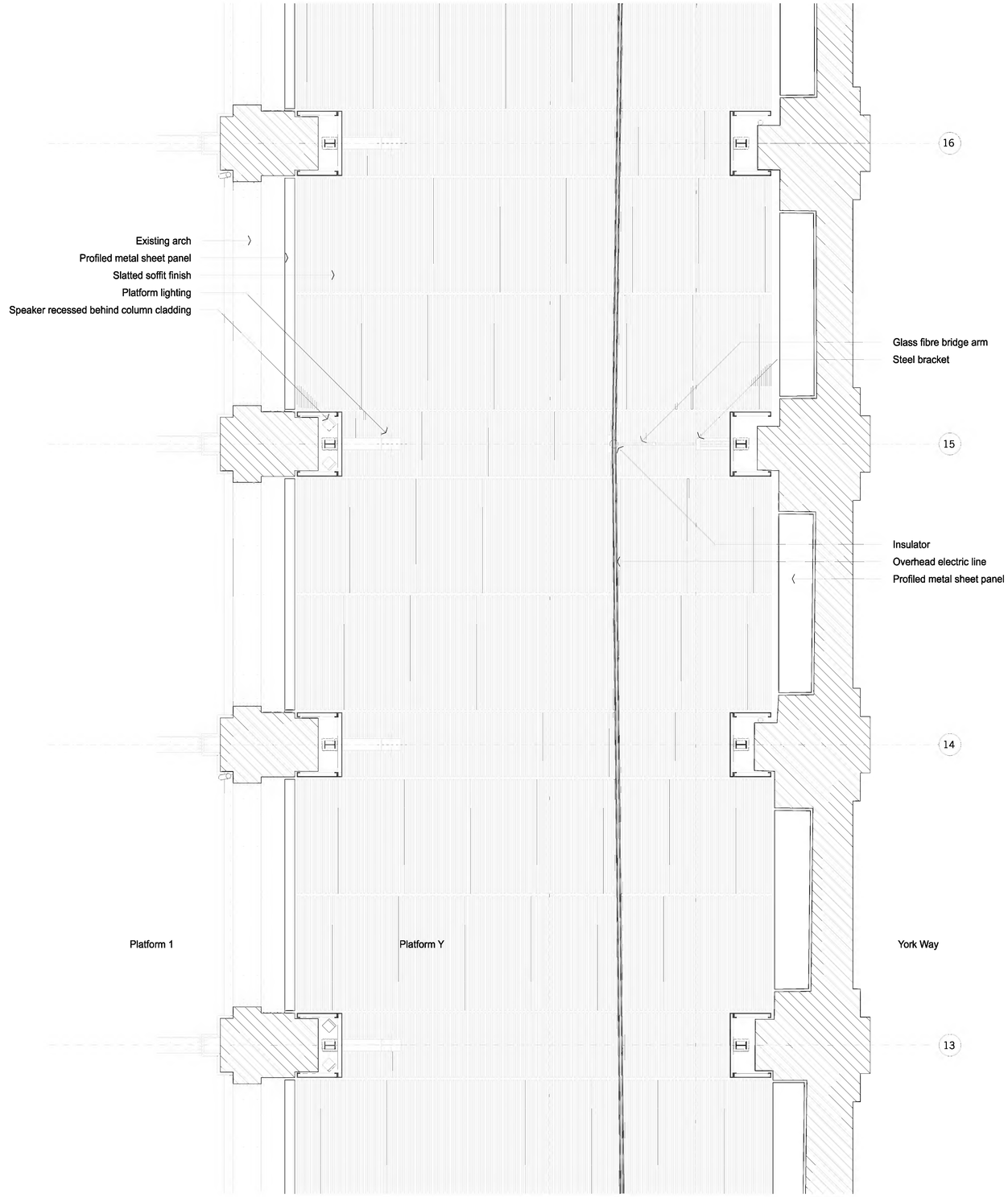


1 PROPOSED PLAN DETAIL

1:50 PRODETtp-b-ER-DET-1-0807.dg



2 PROPOSED REFLECTED CEILING PLAN

1:50 PRODETtp-b-ER-DET-1-0807.dg

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02	19.12.2003	Information	JMP	TK
03	14.08.2006	Isssued for Listed Building / Planning Application	JMP	KM

King's Cross Station - Platform Y
Proposed Plan and PCP Detail

scale	1:50 at A1	job no.	1163
date	17.11.03	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	TK
drawing no.	AL1-DET-1	revision	03

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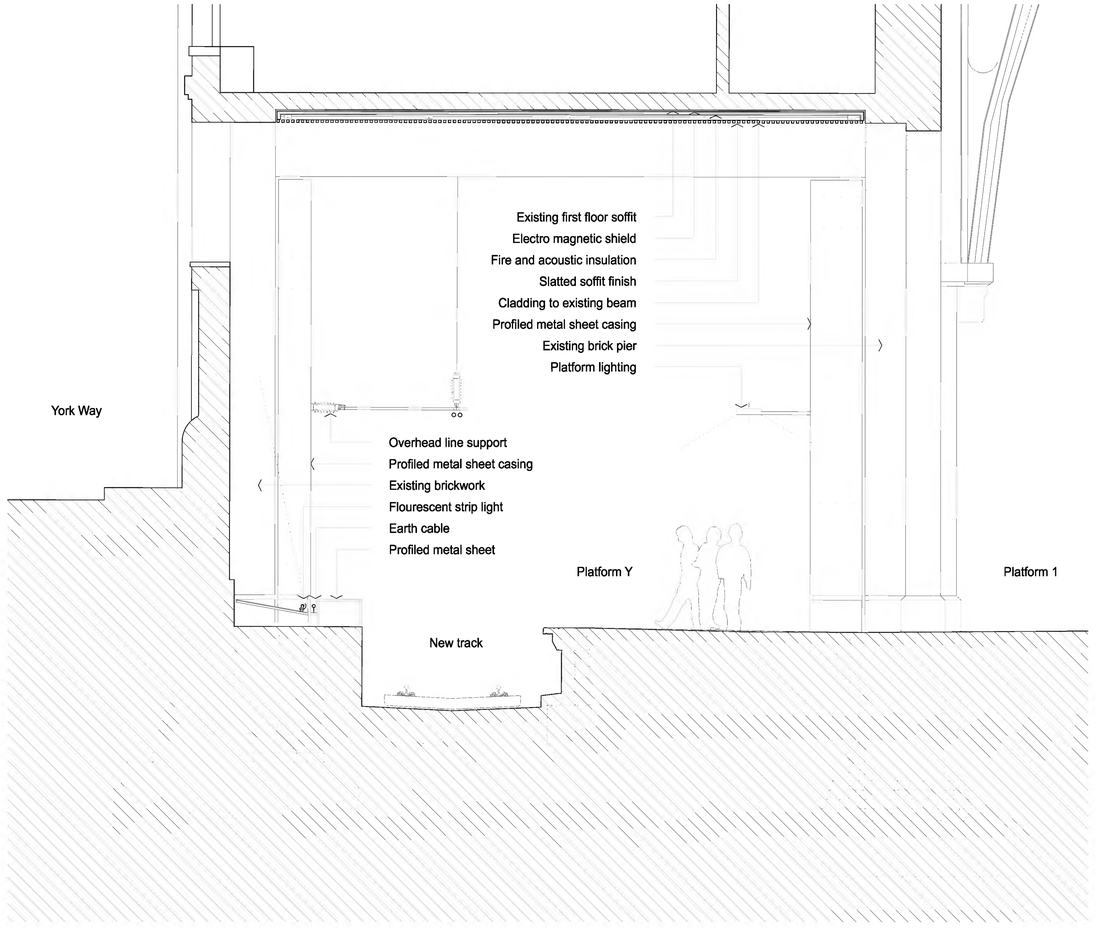
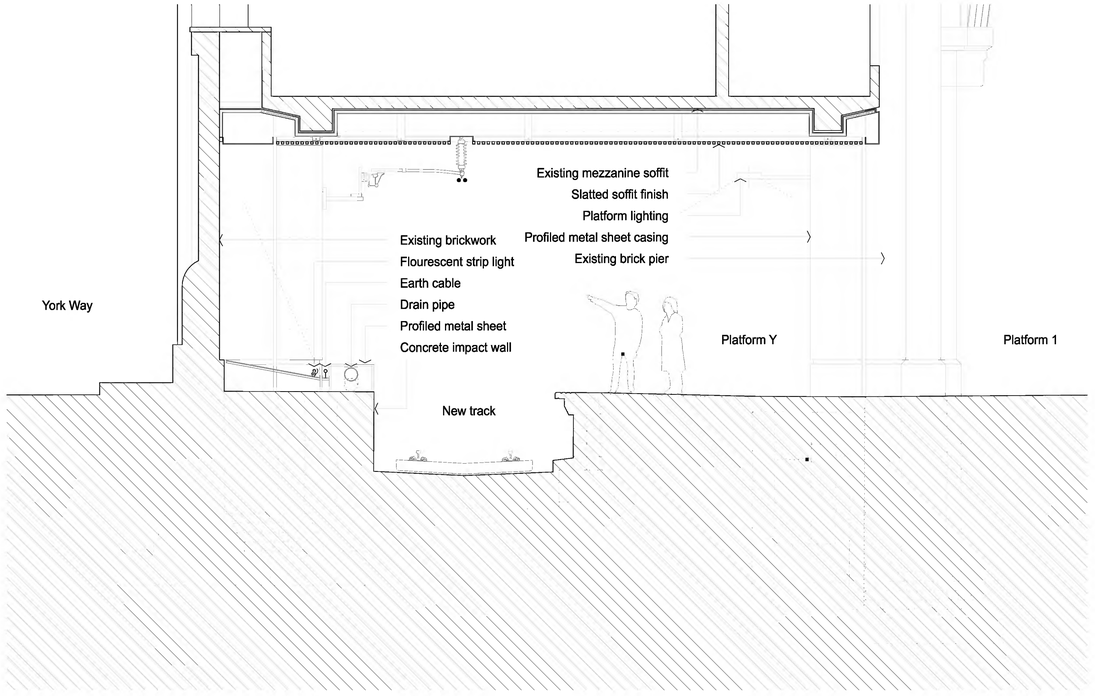


1 CROSS SECTION H-H
1:50 PROSECtix-b-ER-HH-0807.dgn



2 CROSS SECTION K-K
1:50 PROSECtix-b-ER-KK-0807.dgn

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03	14.08.2006	Issued for Listed Building / Palnning Application	JMP	KM

King's Cross Station - Platform Y
Section H-H & K-K

scale	1:50 at A1	job no.	1163
date	17.11.03	drawing by	JMP
drawing status	Listed Building/Palnning Application	checked by	KM
drawing no.	AL1-DET-2	revision	03

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Platform 8

Platform 7

Platform 6

Platform 5

Southern Concourse

Platform 4

Platform 3

Platform 2

Platform 1

Access/Escape Stair for Eastern Range Offices

Cappuccino Bar

W H Smith

1 AE1-009

2 AE1-009

2 AE1-007

1 AE1-008

GNER Operations

Access/Escape Stair for Eastern Range Offices

Redundant Oil Tank

Redundant Oil Heating Boiler Room

Hull Trains Portakabin Kitchen

Hull Trains Cold Store

Escape Stair from Service Tunnel

Kerb

Cab Way

Gas Fired Boiler Room

Store Store Store Store Store Store Store Store Store Store Store Store Store

Exit from Cab Way

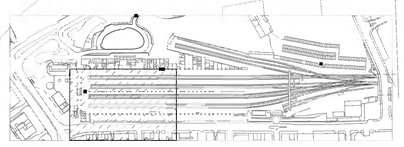
2 AE1-008

1 AE1-009

York Way

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

York Curve Tunnel Shown Dotted



Continued on AE1-00G-C

0 2.00m 10.00m 20.00m

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05	14.08.2006	Issued for Planning / Listed Building Application	JMP	KM

King's Cross Station - Platform Y
Existing Ground Floor Plan - East Side - Southern Area

scale	1:200 at A1	job no.	1163
date	03.10.2003	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	KM
drawing no.	AE1-00G-S	revision	05

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Platform 8

Platform 7

Platform 6

Platform 5

Platform 4

Platform 2

Platform 1

Access/Escape to Plant Room

1 AE1-009

Disused Lift

Escape from Eastern Range

Kerb

Bicycle Racks

Rail Gourmet Vehicle Compound (Battery Charging)

Rail Gourmet Dry Storage/Transport Modules

Major Stations Maintenance Equipment Compound

4 AE1-009

W H Smith Portakabins

Gas Fired Boiler Rm

Shower Room

GNER Shunters

5 AE1-009

6 AE1-009

Major Stations Store (Original Battle Bridge Road Structure with Brick Vaulted Roof)

Enginemen's Bothy

Ramp

2 AE1-008

1 AE1-007

Cab Way

Former Toilet

Store

Former Toilet

Former Toilet

Bus facilities

Bus facilities

Store

Store

Cobbled Ramp

Bus facilities

York Way

2 AE1-008

3 AE1-009

York Curve Tunnel Shown Dashed

25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42

Continued on AE1-00G-S

Wharfdale Road

Continued on AE1-00G-N

0 2.00m 10.00m 20.00m

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03	28.11.2003	Draft Listed Building Documentation	JMP	TK
04	19.12.2003	Information	JMP	TK
05	14.08.2006	Issued for Listed Building / Planning Application	JMP	KM

King's Cross Station - Platform Y

Existing Ground Floor Plan - East Side - Central Area

scale	1:200 at A1	job no.	1163
date	03.10.2003	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	KM
drawing no.	AE1-00G-C	revision	05

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Platform 8

Platform 7

Platform 6

Platform 5

Platform 4

Platform 3

Platform 2

Platform 1

signal gantry

signal gantry

signal gantry

Outline of Gasworks Tunnels shown Dashed

Signal Box & Jarvis Personnel

Goods Way

Relay Room

6 AE1-009

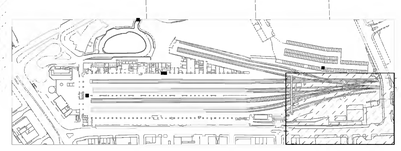
Entrance to Disused York Tunnel

Cobbled Ramp

Standby Generator

York Way

Continued on AE1-00G-C



0 2.00m 10.00m 20.00m

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Revisions

Rev.	Date	Description	Drawn	Checked
00	03.10.2003	Outline Design	JMP	TK
01	31.10.2003	Level 4 Issue	JMP	TK
02	17.11.2003	Information	JMP	TK
03	28.11.2003	Draft Listed Building Documentation	JMP	TK
04	19.12.2003	Information	JMP	TK
05	14.08.2006	Issued for Listed Building / Planning Application	JMP	KM

King's Cross Station - Platform Y
Existing Ground Floor Plan - East Side - Northern Area

scale	1:200 at A1	job no.	1163
date	03.10.2003	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	KM
drawing no.	AE1-00G-N	revision	05

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Platform 8

Platform 7

Platform 6

Platform 5

Platform 4

Platform 3

Platform 2

Platform 1

Access/Escape Stair for Eastern Range Offices

Access/Escape Stair for Eastern Range Offices

1 AE1-006

2 AE1-008

2 AE1-007

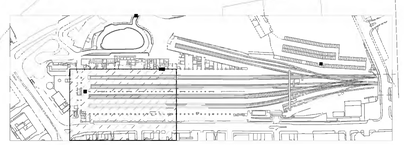
1 AE1-008

2 AE1-005

1 AE1-009

York Way

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25



York Curve
Tunnel
Shown Dotted

Continued on AE1-00M-C

0 2.00m 10.00m 20.00m

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04	19.12.2003	Information	JMP	TK
05	14.08.2006	Issued for Planning / Listed Building Application	JMP	KM

King's Cross Station - Platform Y
Existing Mezzanine Floor Plan - East Side-Southern Area

scale	1:200 at A1	job no.	1163
date	31.10.03	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	KM
drawing no.	AE1-00M-S	revision	05

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Platform 8

Platform 7

Platform 6

Platform 5

Platform 4

Platform 2

Platform 1

1 AE1-009

2 AE1-008

1 AE1-007

Shore Supply

4 AE1-009

W H Smith Portakabins

Gas Fired Boiler Rm

Uninhabitable

Enginemen's Bothy

Cobbled Area (Former Battle Bridge Road)

Cobbled Ramp

York Way

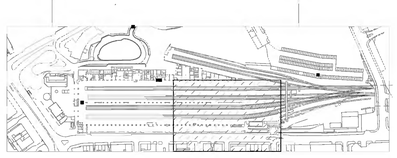
2 AE1-008

3 AE1-009

York Curve Tunnel Shown Dashed

25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42

Wharfdale Road



0 2.00m 10.00m 20.00m

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03	28.11.2003	Draft Listed Building Documentation	JMP	TK
04	19.12.2003	Information	JMP	TK
05	14.08.2006	Issued for Listed Building / Planning Application	JMP	KM

King's Cross Station - Platform Y
Existing Mezzanine Floor Plan - East Side - Central Area

scale	1:200 at A1	job no.	1163
date	03.10.2003	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	KM
drawing no.	AE1-00M-C	revision	05

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Platform 8

Platform 7

Platform 6

Platform 5

Platform 4

Platform 2

Platform 1

W H Smith
Portakabins

Enginemen's
Bothy

Cobbled Area
(Former Battle
Bridge Road)

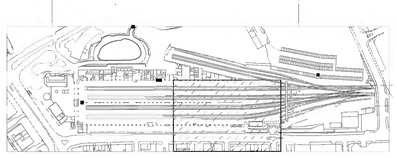
Cobbled Ramp

York Way

York Curve Tunnel
Shown Dashed

25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42

Wharfdale Road



0 2.00m 10.00m 20.00m

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02	17.11.2003	Infromation	JMP	TK
03	28.11.2003	Draft Listed Building Documentation	JMP	TK
04	19.12.2003	Information	JMP	TK
05	14.08.2006	Issued for Listed Building / Planning Application	JMP	KM

King's Cross Station - Platform Y
Existing First Floor Plan - East Side - Central Area

scale	1:200 at A1	job no.	1163
date	03.10.2003	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	KM
drawing no.	AE1-001-C	revision	05

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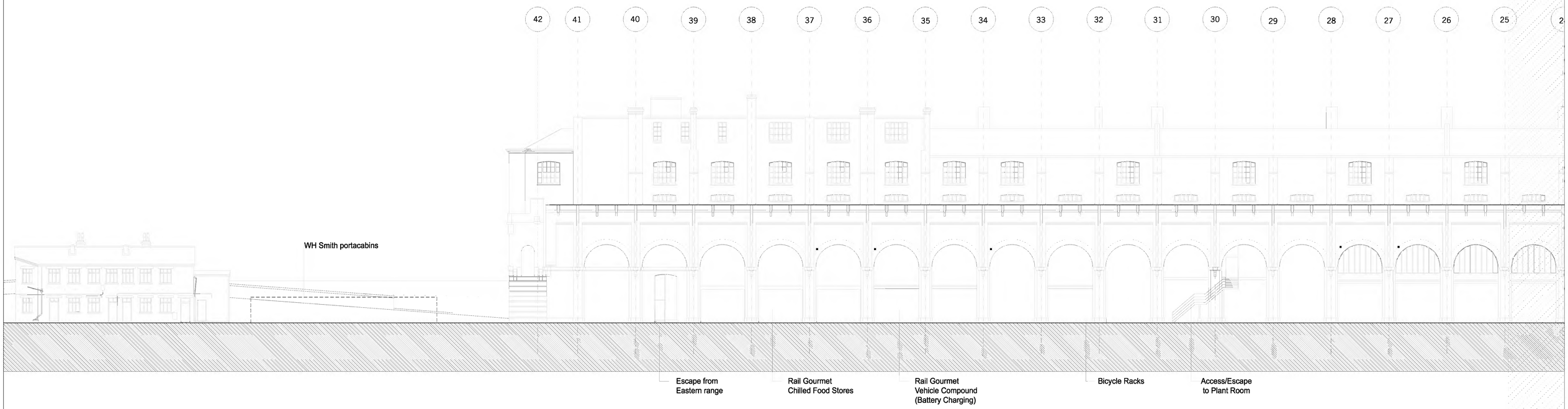
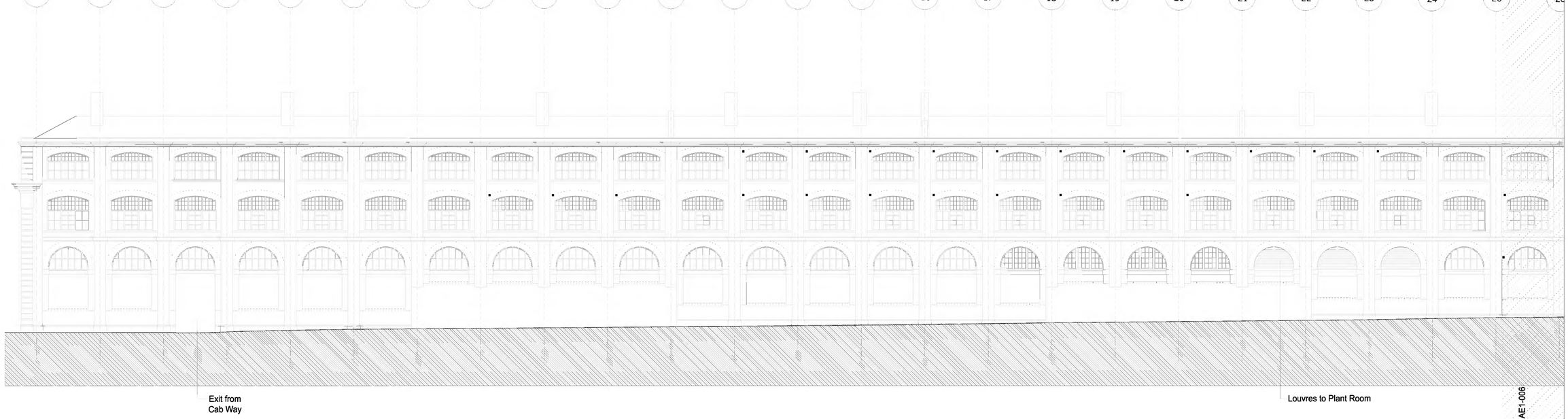


1 EXISTING SECTION R-R

1:200 EXSECIix-b-ER-RRex-0807.dgn



2 EXISTING EAST ELEVATION

1:200 EXELEix-b-ER-EASTex-0807.dg

0 2.00m 10.00m 20.00m

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00	03.10.2003	Outline Design	JMP	TK
01	31.10.2003	Level 4 Issue	JMP	TK
02	17.11.2003	Information	JMP	TK
03	28.11.2003	Draft Listed Building Documentation	JMP	TK
04	19.12.2003	Information	JMP	TK
05	14.08.2006	Issued for Listed Building / Planning Application	JMP	KM

King's Cross Station - Platform Y
Existing East Elevation & Section R-R

scale	1:200 at A1	job no.	1163
date	03.10.2003	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	KM
drawing no.	AE1-005	revision	05

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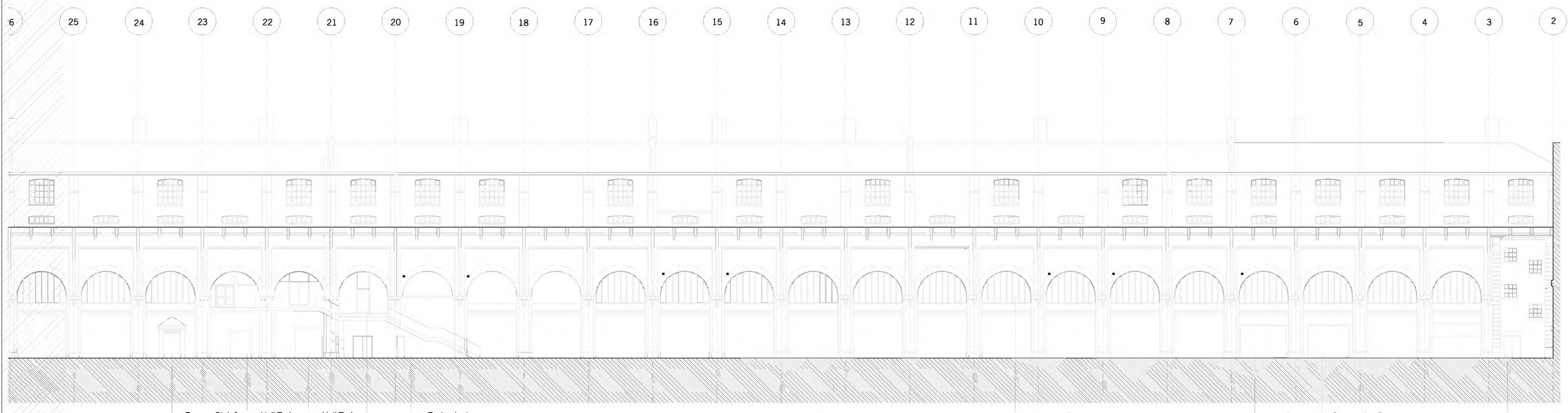

1 EXISTING SECTION R-R
1:200 EXSECIix-b-ER-RRex-0807.dgn

Continued on AE1-005

2 EXISTING EAST ELEVATION
1:200 EXELEie-b-ER-EASTex-0807.dg

0 2.00m 10.00m 20.00m

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Revisions

Rev.	Date	Description	Drawn	Checked
00	03.10.2003	Outline Design	JMP	TK
01	31.10.2003	Level 4 Issue	JMP	TK
02	17.11.2003	Information	JMP	TK
03	28.11.2003	Draft Listed Building Documentation	JMP	TK
04	19.12.2003	Information	JMP	TK
05	14.08.2006	Issued for Listed Building / Planning Application	JMP	KM

King's Cross Station - Platform Y
Existing East Elevation & Section R-R

scale	1:200 at A1	job no.	1163
date	03.10.2003	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	KM
drawing no.	AE1-006	revision	05

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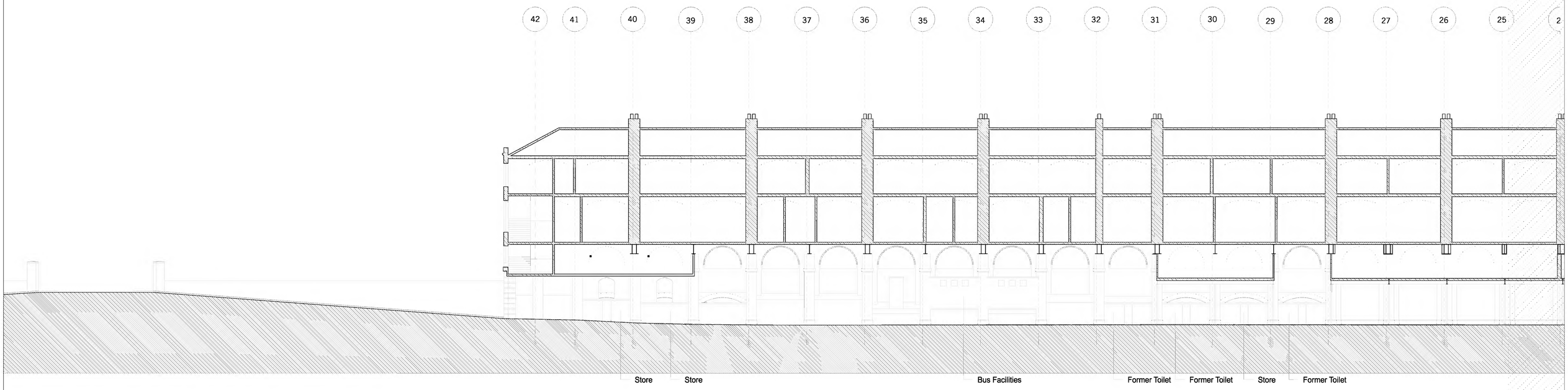
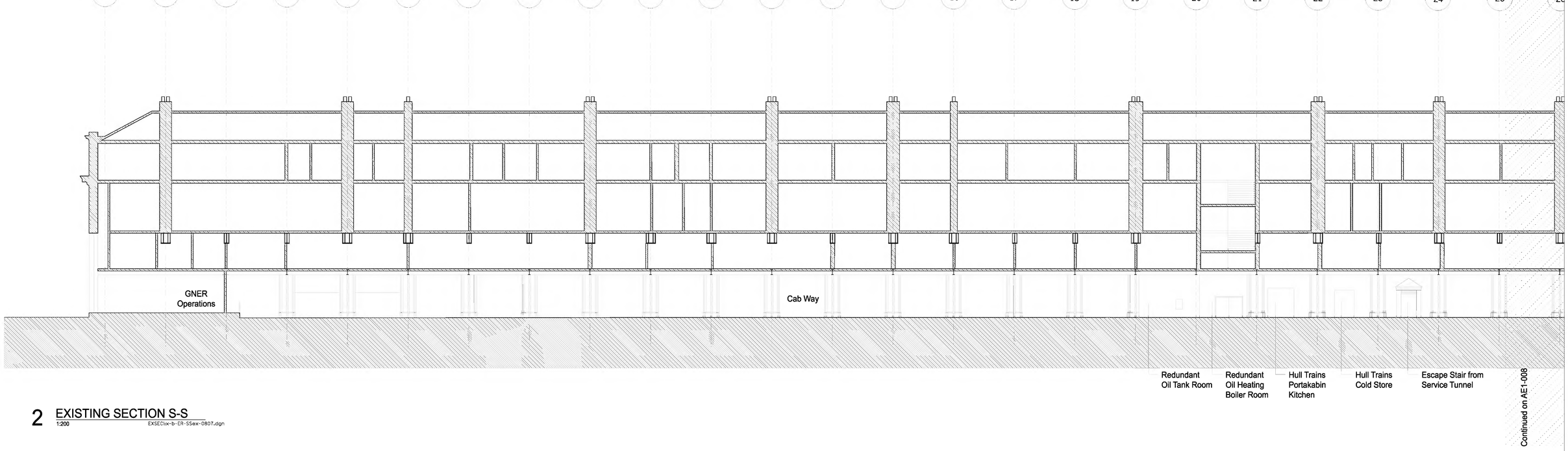


1 EXISTING SECTION T-T

1:200 EXSECtsx-b-ER-TTex-0807.dgn



2 EXISTING SECTION S-S

1:200 EXSECtsx-b-ER-SSex-0807.dgn

Do not scale from this drawing.
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If in doubt ask the Contract Administrator.

Revisions

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00	03.10.2003	Outline Design	JMP	TK
01	31.10.2003	Level 4 Issue	JMP	TK
02	17.11.2003	Information	JMP	TK
03	28.11.2003	Draft Listed Building Documentation	JMP	TK
04	19.12.2003	Information	JMP	TK
05	14.08.2006	Issued for Listed Building / Planning Application	JMP	KM

King's Cross Station - Platform Y
Existing Section S-S and T-T

scale	1:200 at A1	job no.	1163
date	03.10.2003	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	KM
drawing no.	AE1-007	revision	05

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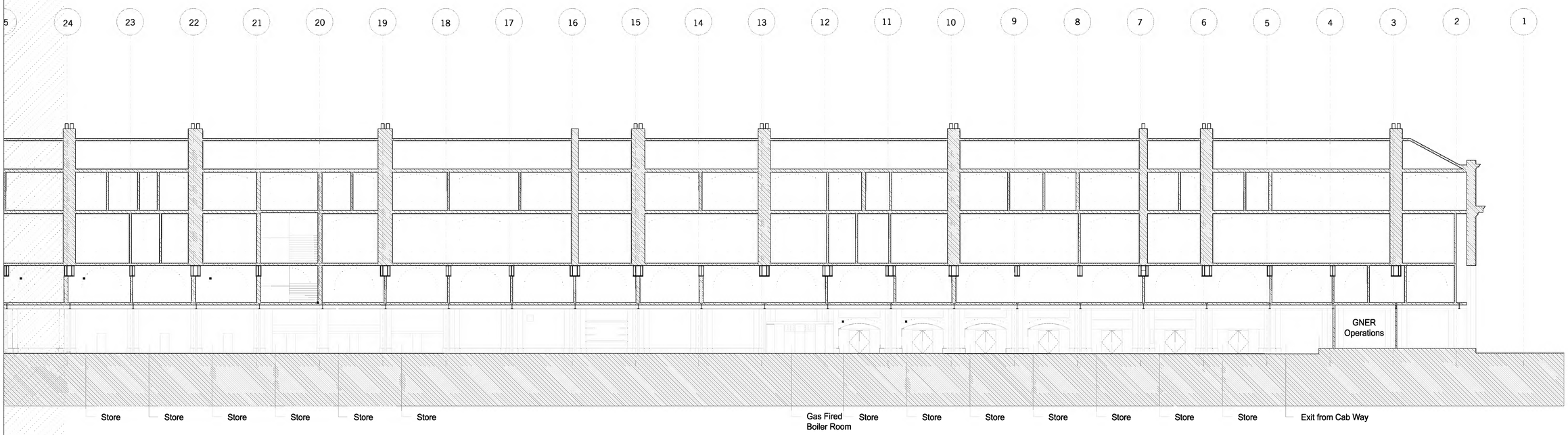
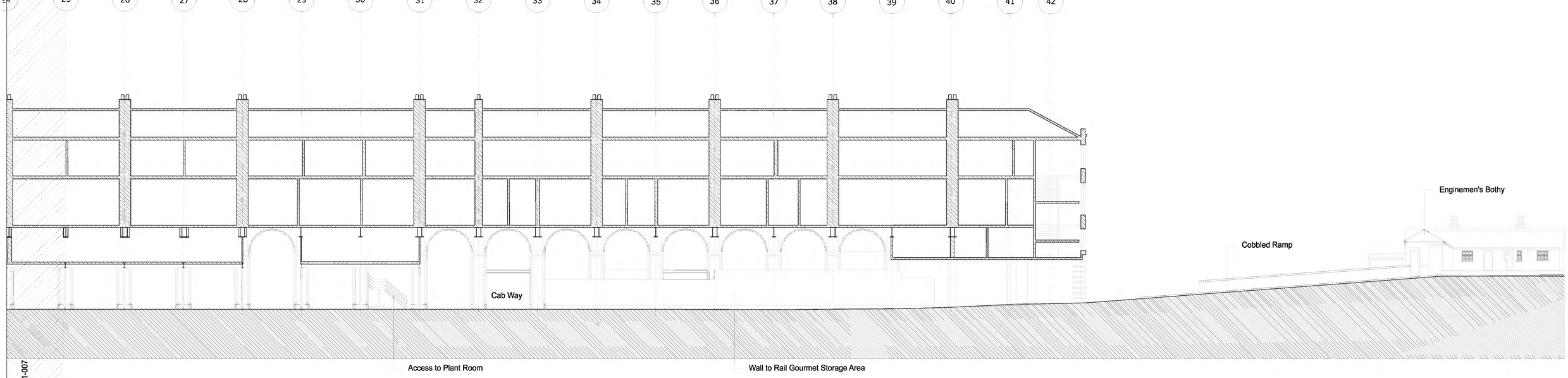


1 EXISTING SECTION T-T

1:200 EXSECtix-b-ER-TTex-0807.dgn



2 EXISTING SECTION S-S

1:200 EXSECtix-b-ER-SSex-0807.dgn

0 2.00m 10.00m 20.00m

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Revisions

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00	03.10.2003	Outline Design	JMP	TK
01	31.10.2003	Level 4 Issue	JMP	TK
02	17.11.2003	Information	JMP	TK
03	28.11.2003	Draft Listed Building Documentation	JMP	TK
04	19.12.2003	Information	JMP	TK
05	14.08.2006	Issued for Listed Building / Planning Application	JMP	KM

King's Cross Station - Platform Y
Existing Section S-S and T-T

scale	1:200 at A1	job no.	1163
date	03.10.2003	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	KM
drawing no.	AE1-008	revision	05

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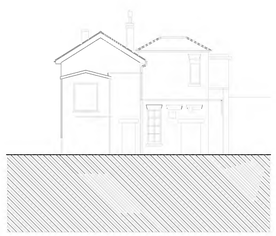
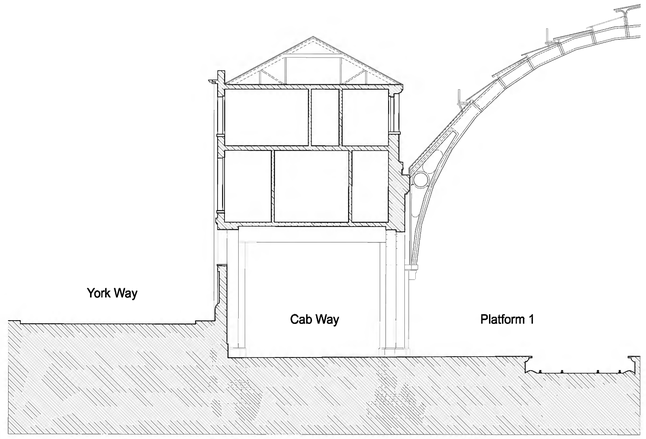
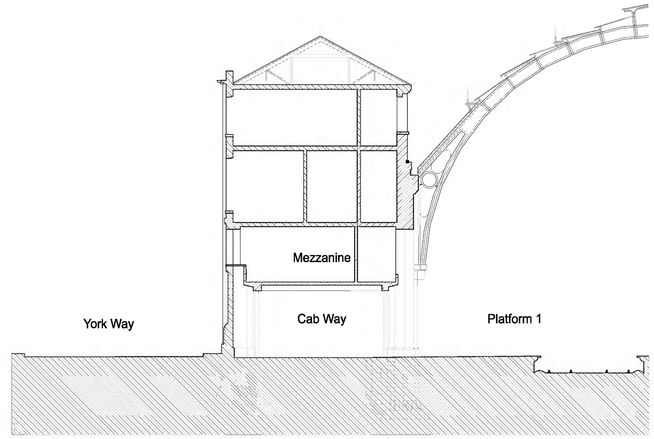


5 EXISTING SOUTH ELEVATION
1:200 EXELEle-b-ER-Bothy-ex-0807.



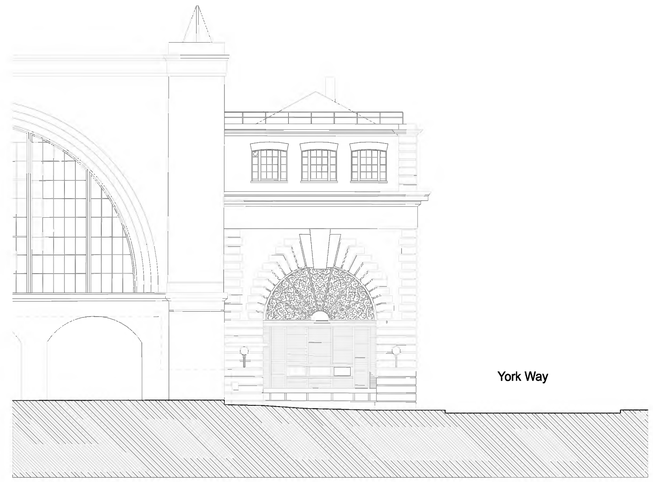
3 EXISTING SECTION H-H
1:200 EXSECix-b-ER-HHex-0807.dgn



1 EXISTING SECTION K-K
1:200 EXSECix-b-ER-KKex-0807.dgn

6 EXISTING NORTH ELEVATION
1:200 EXELEle-b-ER-Bothy-ex-0807.

4 EXISTING NORTH ELEVATION
1:200 EXELEle-b-ER-NORTHex-0807.d



2 EXISTING SOUTH ELEVATION
1:200 EXELEle-b-ER-SOUTHex.dgn

0 2.00m 10.00m 20.00m

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03	28.11.2003	Draft Listed Building Documentation	JMP	TK
04	19.12.2003	Information	JMP	TK
05	14.08.2006	Issued for Listed Building / Planning Application	JMP	KM

King's Cross Station - Platform Y
Existing North & South Elevations & Sections H-H & K-K

scale	1:200 at A1	job no.	1163
date	03.10.2003	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	TK
drawing no.	AE1-009	revision	05

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Platform 8

Platform 7

Platform 6

Platform 5

Platform 4

Platform 3

Platform 2

Platform 1

Southern Concourse

Access/Escape Stair for Eastern Range Offices

GNER Operations

Cappuccino Bar

W H Smith

Access/Escape Stair for Eastern Range Offices

Redundant Oil Tank

Redundant Oil Heating Boiler Room

Hull Trains Portakabin Kitchen

Hull Trains Cold Store

Escape Stair from Service Tunnel

Kerb

Cab Way

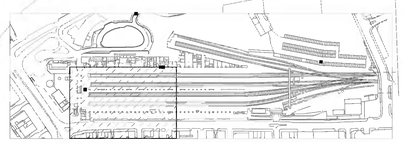
Gas Fired Boiler Room

Store Store Store Store Store Store Store Store Store Store Store Store Store

York Way

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

York Curve Tunnel Shown Dotted



Continued on AE1-DM00G-C

0 2.00m 10.00m 20.00m

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00	28.11.2003	Draft Listed Building Documentation	JMP	TK
01	19.12.2003	Information	JMP	TK
02	19.12.2003	Information	JMP	TK
03	14.08.2006	Issued for Listed Building / Planning Aplication	JMP	KM

Demolition key:

Platform Y:
All demolitions are indicated in green.

- Partitions and columns
- Floors to be removed
- All structure to be removed
- Items to be Relocated
- Area to be Excavated

King's Cross Station - Platform Y
Demolition Ground Floor Plan - East Side-Southern Area

scale	1:200 at A1	job no.	1163
date	28.11.2003	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	KM
drawing no.	AE1-DM00G-S	revision	03

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Platform 8

Platform 7

Platform 6

Platform 5

Platform 4

Platform 2

Platform 1

Access/Escape to Plant Room

Bicycle Racks

Kerb

Ramp

Disused Lift

Escape from Eastern Range

Rail Gourmet Vehicle Compound (Battery Charging)

Rail Gourmet Dry Storage/Transport Modules

Major Stations Maintenance Equipment Compound

W H Smith Portakabins

Gas Fired Boiler Rm

Shower Room

GNER Shunters

Major Stations Store (Original Battle Bridge Road Structure with Brick Vaulted Roof)

Enginemen's Bothy

Cab Way

Former Toilet

Store

Former Toilet

Former Toilet

Bus facilities

Bus facilities

Store

Store

Cobbled Ramp

York Way

York Curve Tunnel Shown Dashed

25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42

Continued on AE1-DM00G-S

Wharfdale Road

Continued on AE1-DM00G-N

0 2.00m 10.00m 20.00m

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Revisions

Rev.	Date	Description	Drawn	Checked
00	28.11.2003	Draft Listed Building Documentation	JMP	TK
01	09.12.2003	Revised Issue	JMP	TK
02	19.12.2003	Information	JMP	TK
03	14.08.2006	Issued for Listed Building / Planning Application	JMP	KM

Demolition key:

Platform Zero:
All demolitions are indicated in green.

- Partitions and columns
- Floors to be removed
- All structure to be removed
- Items to be Relocated
- Area to be Excavation

King's Cross Station - Platform Y

Demolition Ground Floor Plan - East Side - Central Area

scale	1:200 at A1	job no.	1163
date	28.11.2003	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	KM
drawing no.	AE1-DM00G-C	revision	03

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Platform 8

Platform 7

Platform 6

Platform 5

Platform 4

Platform 3

Platform 2

Platform 1

Outline of Gasworks
Tunnels shown Dashed

Sidings to be
relocated

Sidings to be
relocated

Signal Box &
Jarvis Personnel

Goods Way

Relay Room

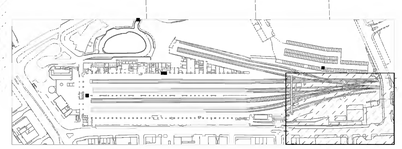
Entrance to Disused
York Tunnel

Cobbled Ramp

Standby Generator

York Way

Continued on AE1-00G-C



0 2.00m 10.00m 20.00m

Do not scale from this drawing.
All dimensions are to be checked on site and any discrepencies noted in writing to JMP.
All dimensions are in millimetres unless noted otherwise.
If in doubt ask the Contract Administrator.

Revisions

Rev.	Date	Description	Drawn	Checked
00	28.11.2003	Draft Listed Building Documentation	JMP	TK
01	19.12.2003	Information	JMP	TK
02	14.08.2006	Issued for Listed Building / Planning Application	JMP	KM

Demolition key:

Platform Zero:
All demolitions are indicated in green.

- Partitions and columns
- Floors to be removed
- All structure to be removed
- Items to be Relocated

King's Cross Station - Platform Y
Demolition Ground Floor Plan - East Side-Northern Area

scale	1:200 at A1	job no.	1163
date	28.11.2003	drawing by	JMP
drawing status	Listed Building/Planning Application	checked by	KM
drawing no.	AE1-DM00G-N	revision	02

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