



Appendix A-4: Proposed Scheme Images



Twickenham
Station

Twickenham
Station

Twickenham Station

NEWS

Rosebud



Car Park ▶



Twickenham Station

NEWS

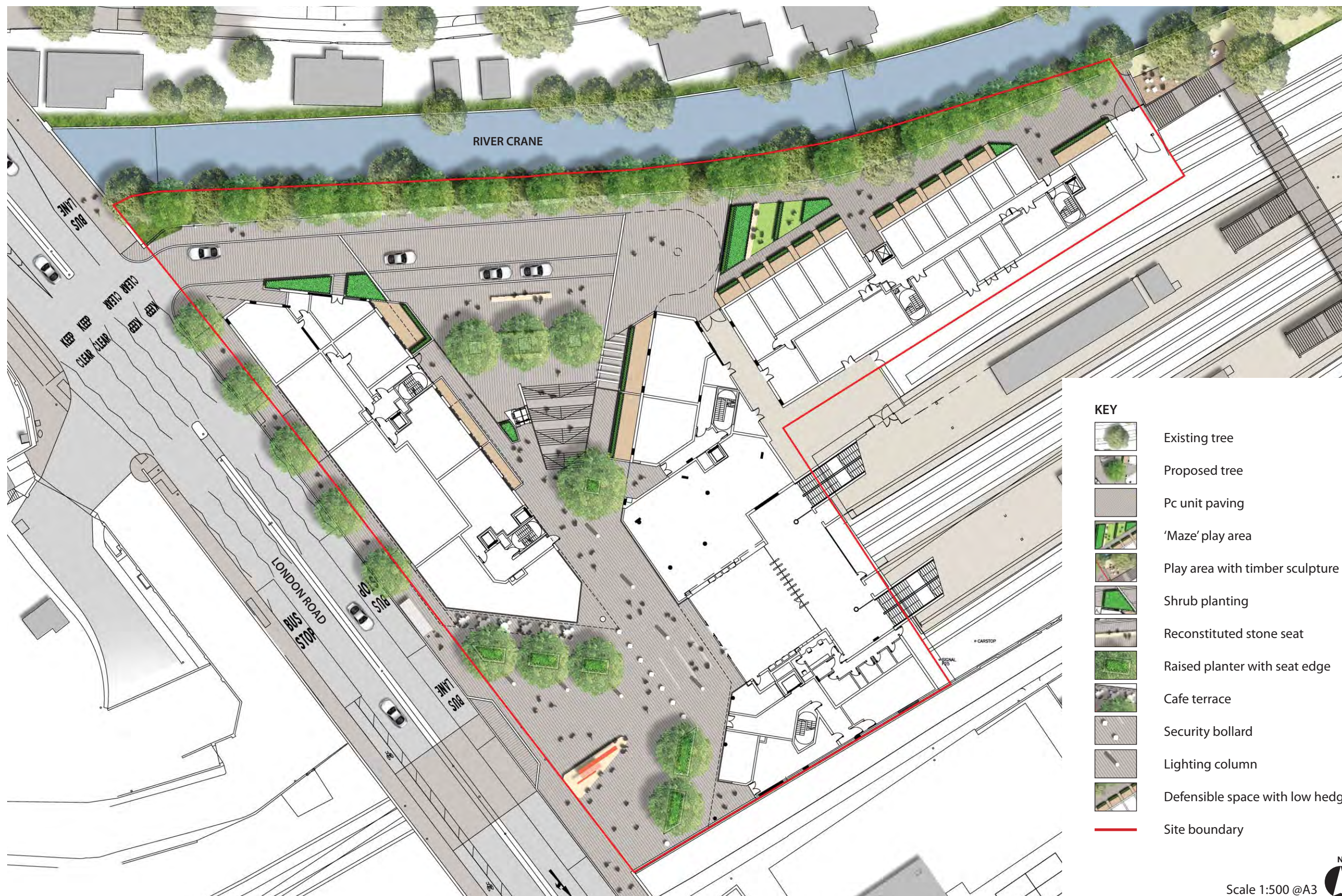
No 23

Rosebud





Car Park ▶



Scale 1:500 @A3



Column light



Recessed lights



Bollard lighting



In-ground LED lighting



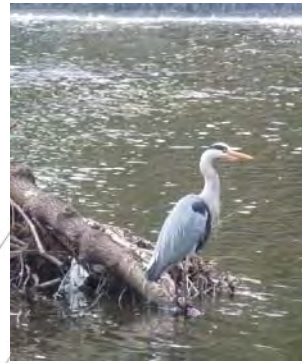
KEY

-  Column light
-  Recessed lighting to station entrance and steps
-  Bollard lighting - spaced at 8m centres along pedestrian path
-  In-ground LED feature lighting

NB. Direction of bollard lights to avoid light spill onto existing vegetation and river edge to avoid bat disturbance.



The River Crane nature corridor supports a diverse range of wildlife



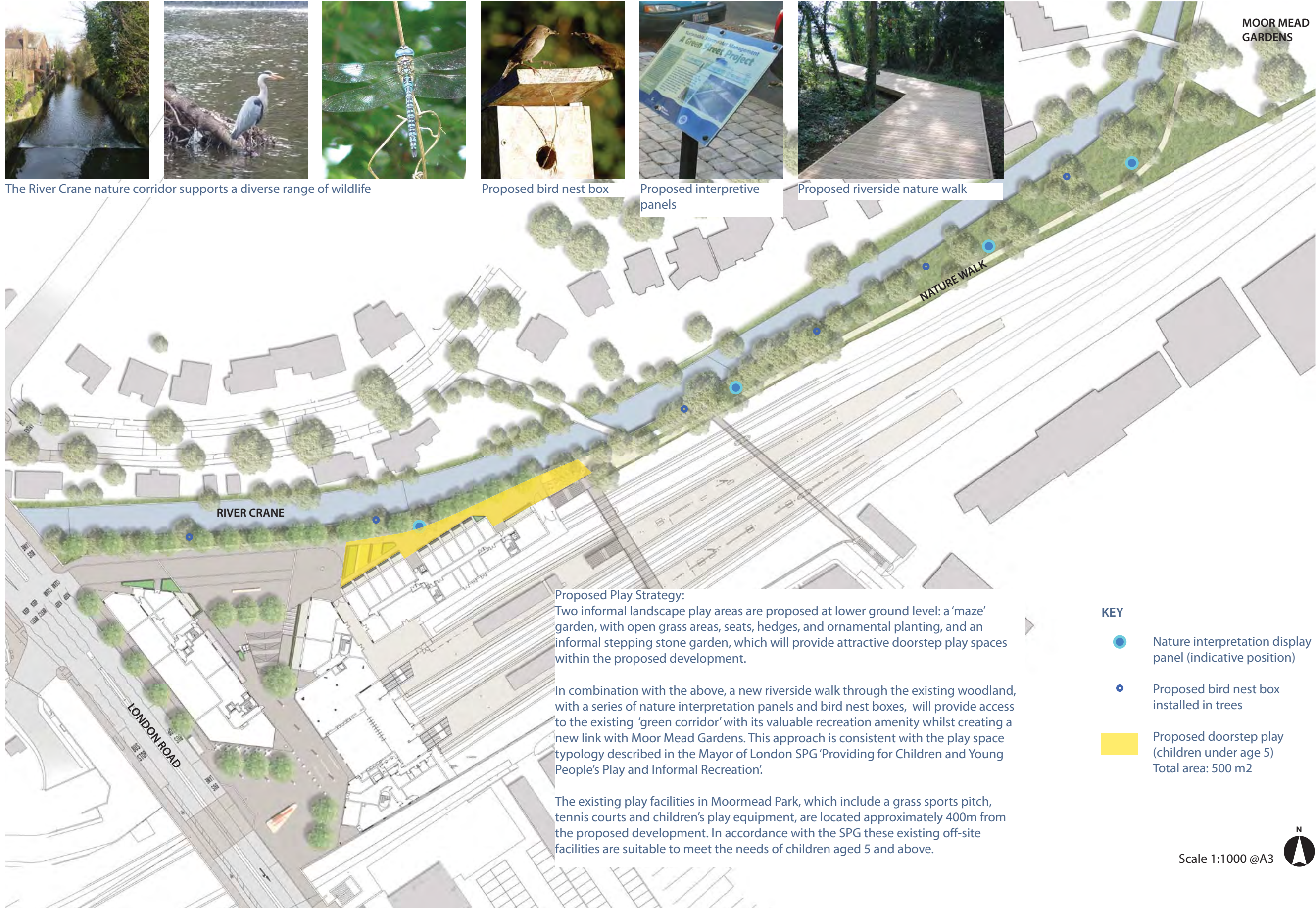
Proposed bird nest box



Proposed interpretive panels



Proposed riverside nature walk



Proposed Play Strategy:
Two informal landscape play areas are proposed at lower ground level: a 'maze' garden, with open grass areas, seats, hedges, and ornamental planting, and an informal stepping stone garden, which will provide attractive doorstep play spaces within the proposed development.

In combination with the above, a new riverside walk through the existing woodland, with a series of nature interpretation panels and bird nest boxes, will provide access to the existing 'green corridor' with its valuable recreation amenity whilst creating a new link with Moor Mead Gardens. This approach is consistent with the play space typology described in the Mayor of London SPG 'Providing for Children and Young People's Play and Informal Recreation'.

The existing play facilities in Moor Mead Park, which include a grass sports pitch, tennis courts and children's play equipment, are located approximately 400m from the proposed development. In accordance with the SPG these existing off-site facilities are suitable to meet the needs of children aged 5 and above.

- KEY**
- Nature interpretation display panel (indicative position)
 - Proposed bird nest box installed in trees
 - Proposed doorstep play (children under age 5)
Total area: 500 m²

Scale 1:1000 @A3



Appendix A-5: Indicative Construction Programme, Phasing and Site Waste Management Plan

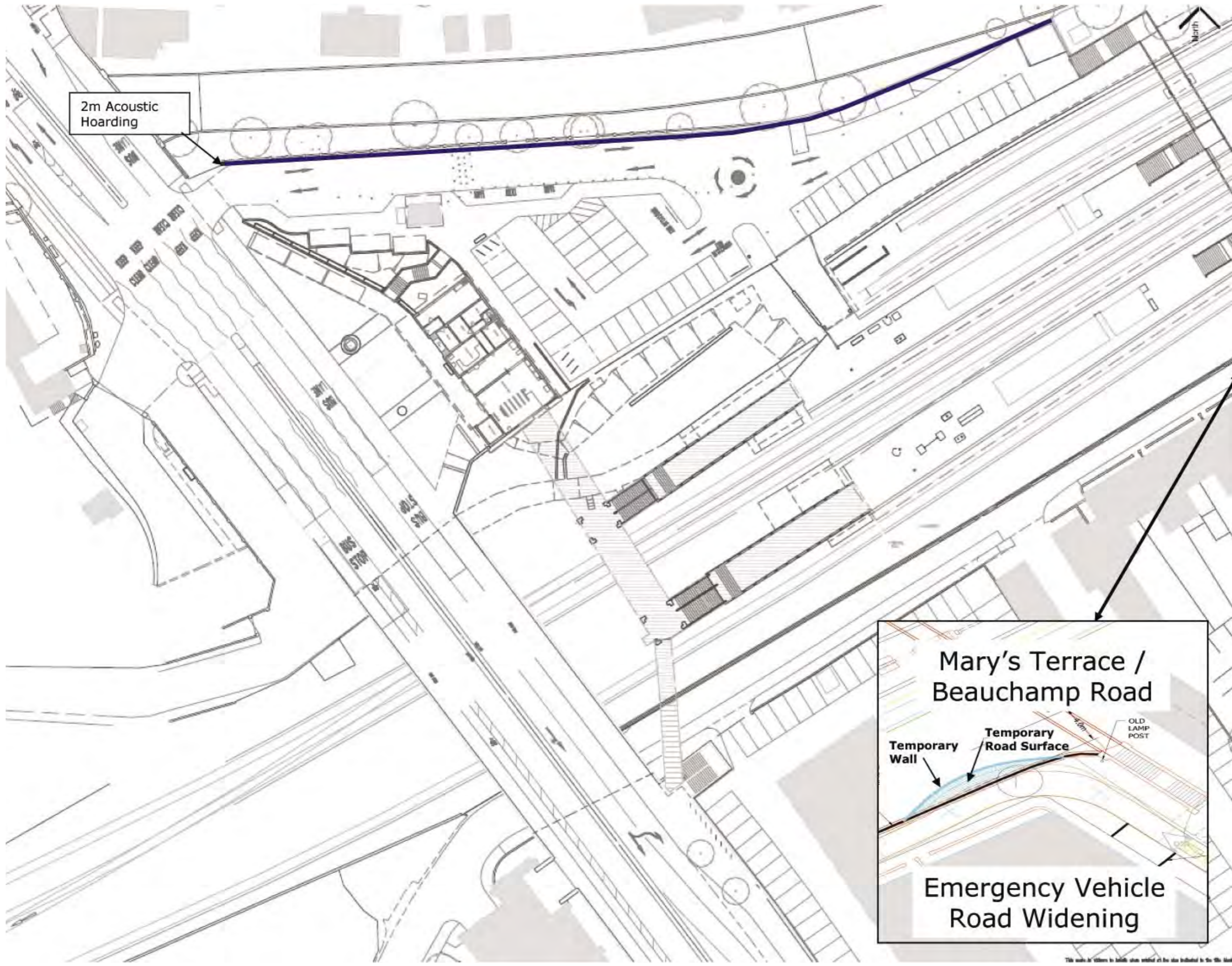
Solum Twickenham
Phase Weeks

Phase	Start	Finish
Advance Works	-4	0
Phase 1	0	7
Phase 2	8	11
Phase 3	11	28
Phase 4	29	52
Phase 5	53	59
Phase 6	60	67
Phase 7	68	88
Phase 8	89	112
Phase 9	113	126
Phase 10	127	143

Indicative Phasing Plan Advanced Works

Week Nos.

- Erect acoustic hoarding to River Crane boundary
- Form road widening to Mary's Terrace/Beauchamp Road for emergency vehicle access
- Divert existing NR services and associated assets



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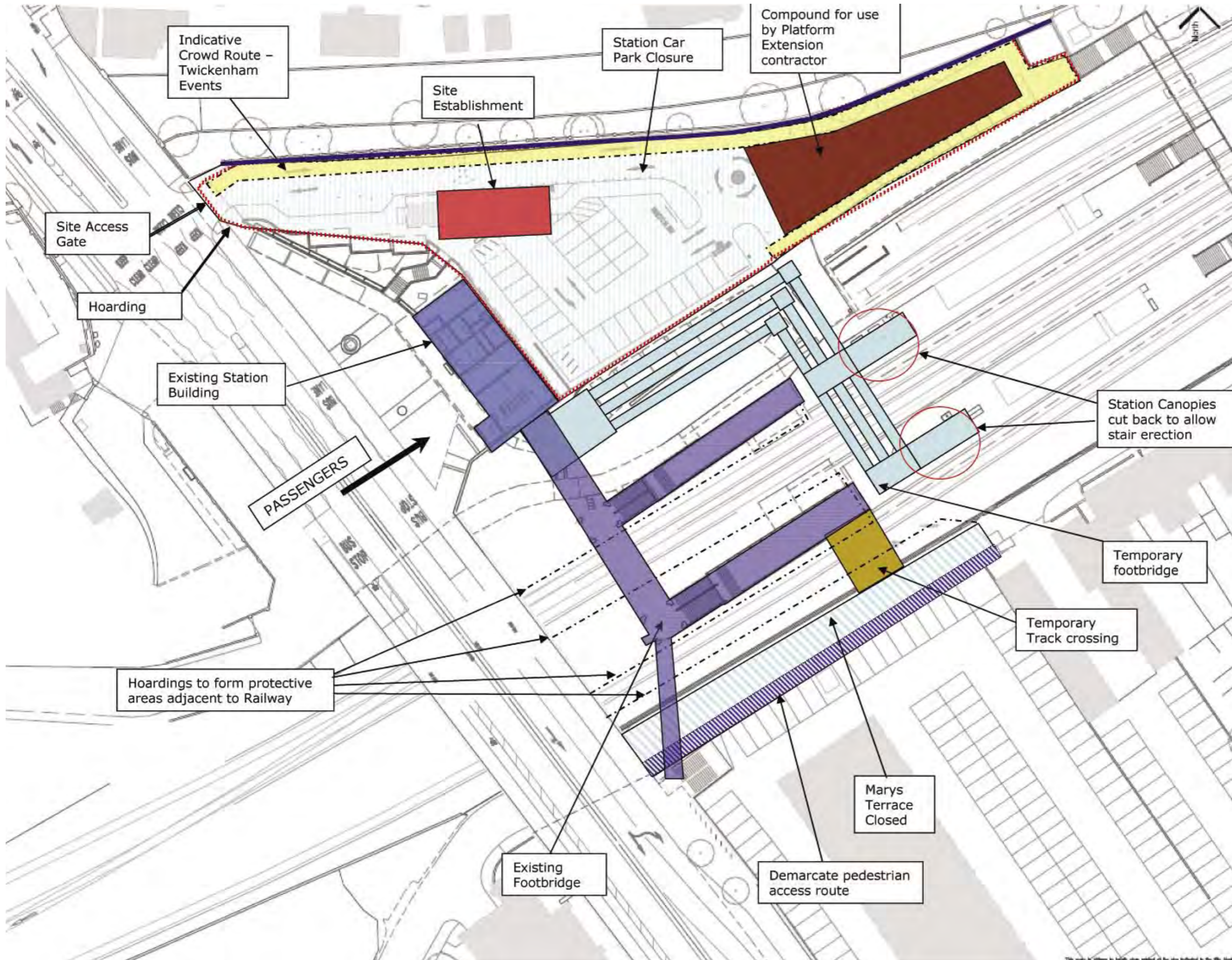
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Indicative Phasing Plan Phase 1

Week Nos.

- Establish site offices and welfare facilities
- Erect site hoardings
- Mary's Terrace closed to vehicular traffic. Pedestrian access maintained
- Install temporary track crossing
- Install footbridge foundations and footbridges
- Install replacement platform services to footbridge gantries and make live
- Cut back existing platform canopies and install new footbridge access stairs
- Establish platform extension contractor compound by agreement



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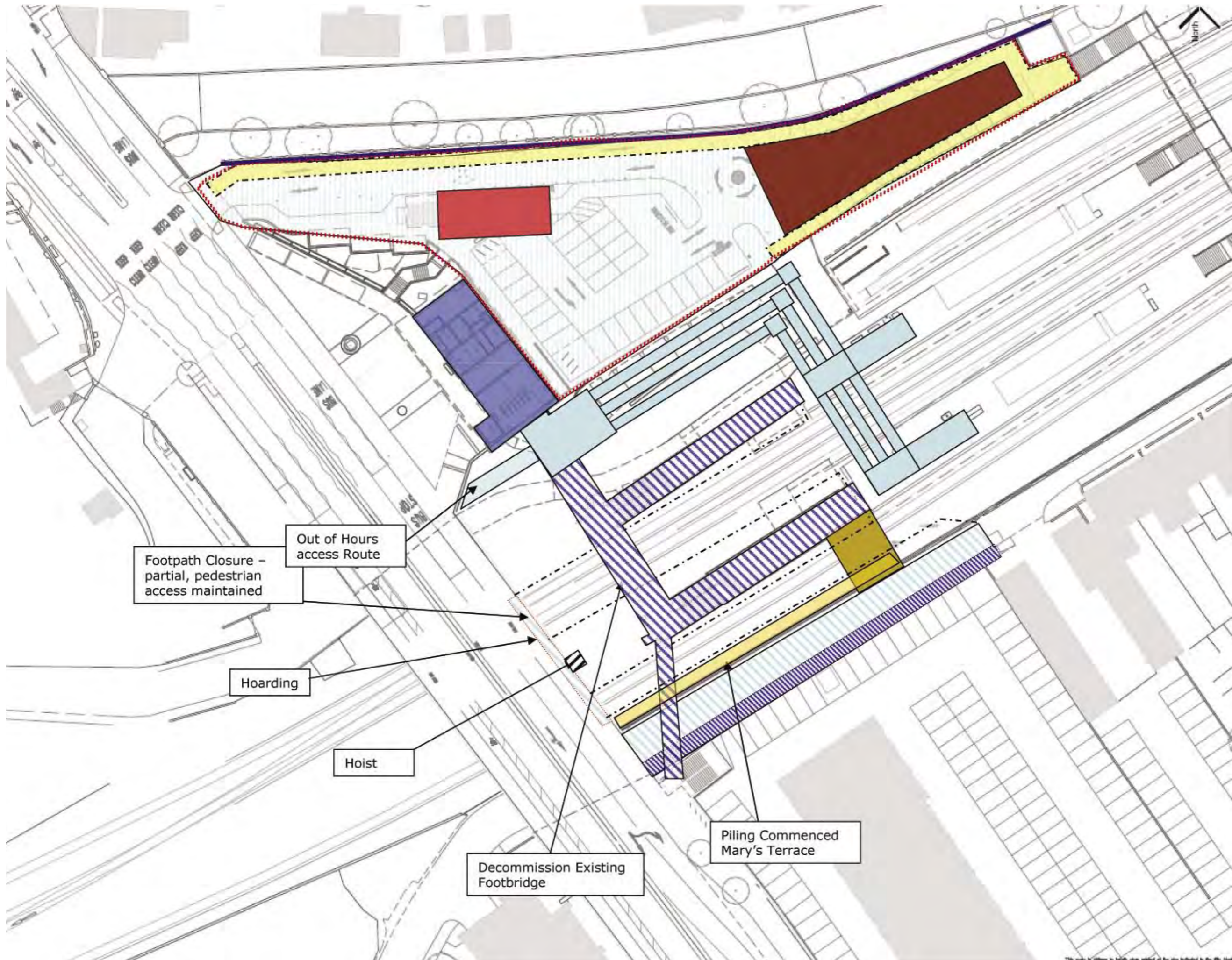
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Indicative Phasing Plan Phase 2

Week Nos.

- Strip existing footbridge of existing services and remove corrugated sheeting
- Commence piling to Mary's Terrace
- Install London Road bridge hoarding. Pedestrian route maintained
- Install loading gantry and hoist to island site on London Road
- Install replacement out of hours access route footbridge
- Dismantle and remove existing footbridge by ROTR possessions



Footpath Closure - partial, pedestrian access maintained

Out of Hours access Route

Hoarding

Hoist

Decommission Existing Footbridge

Piling Commenced Mary's Terrace



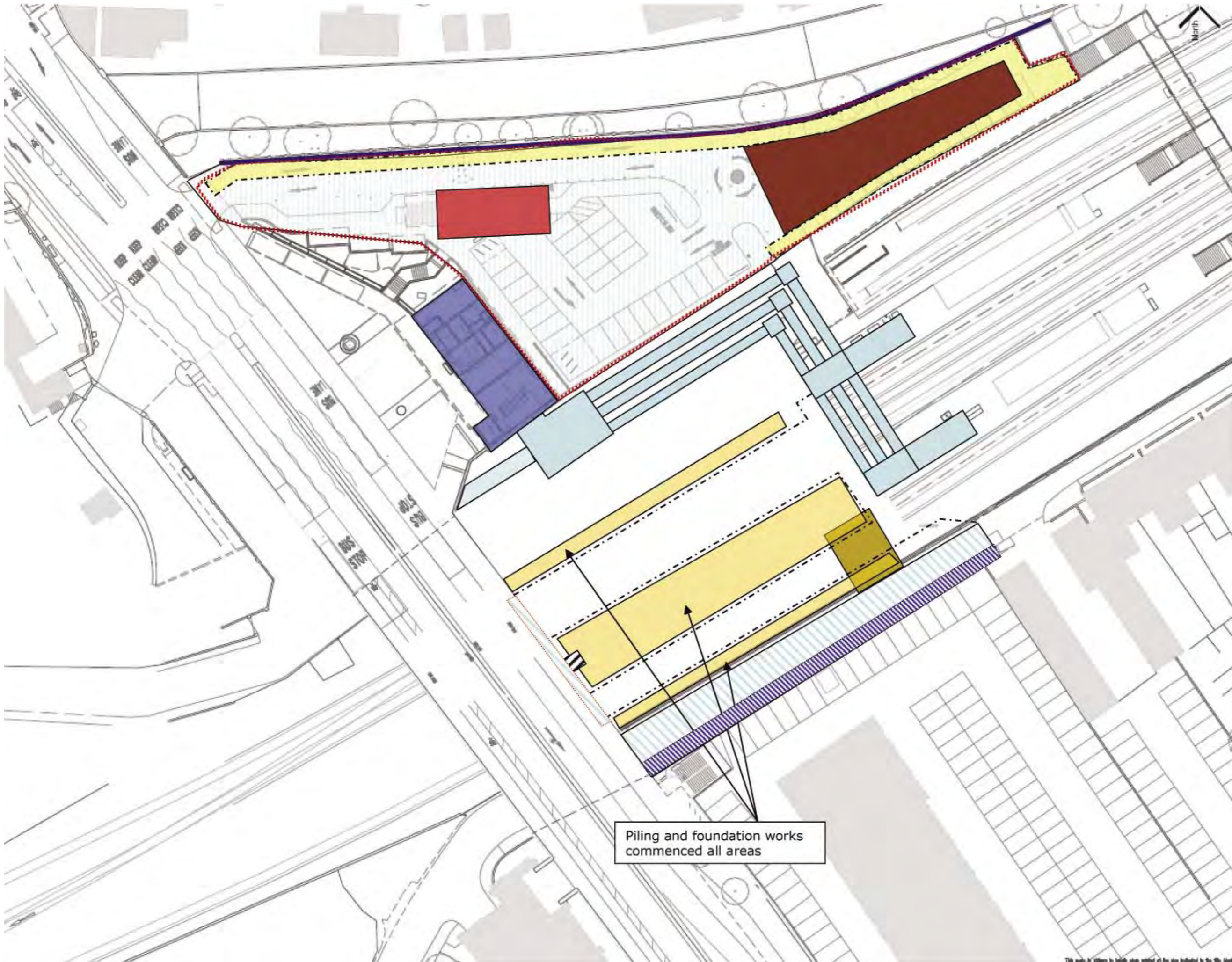
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Indicative Phasing Plan Phase 3

Week Nos.

- Piling to car park and island site commenced and completed
- Piling to Mary's Terrace completed
- Foundations and pilecaps to all areas constructed



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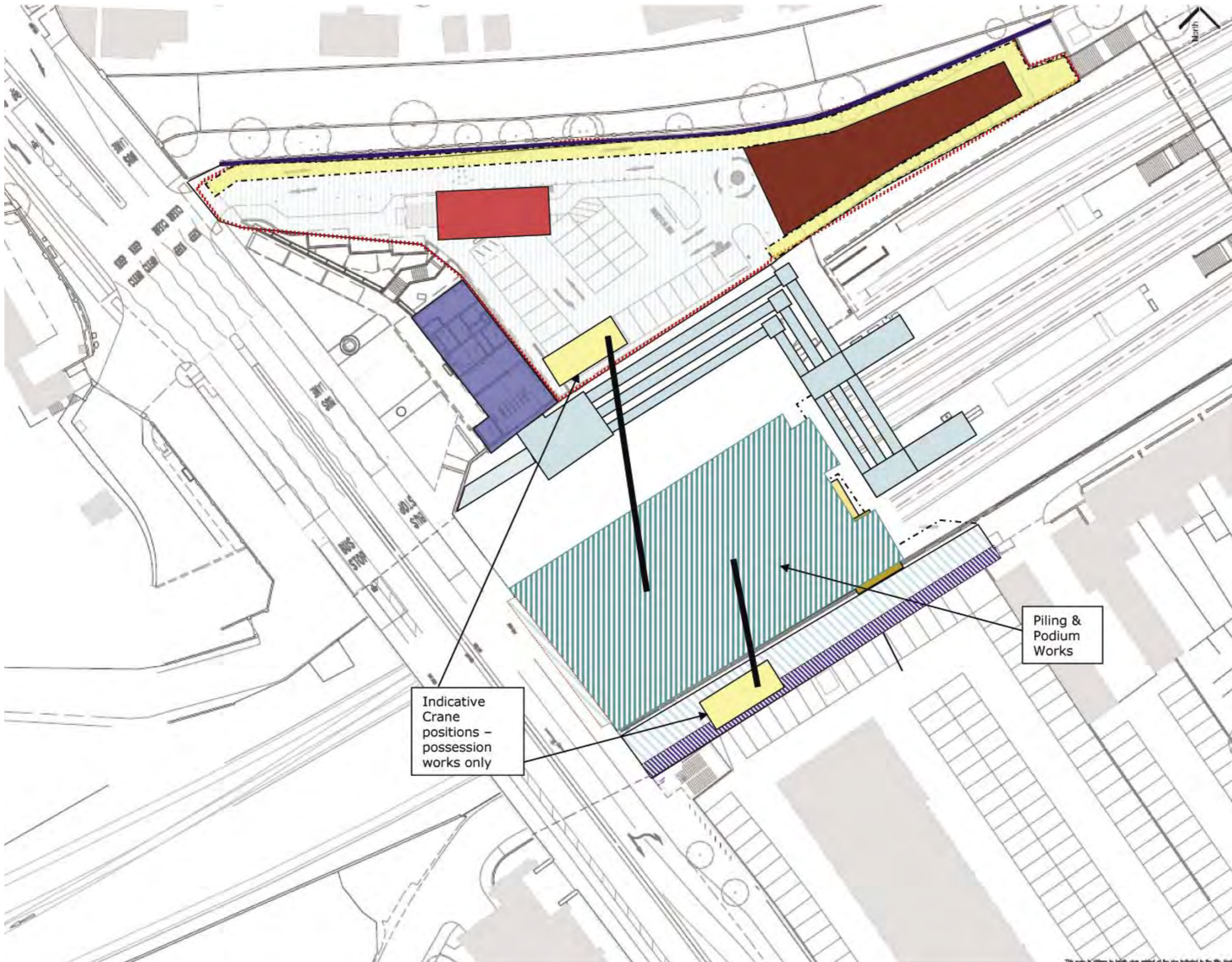
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Indicative Phasing Plan Phase 4

Week Nos.

- Pre-cast podium structure erected using mobile cranes
- Initial erection sequence of 6 weeks ROTR possessions
- Subsequent erection sequence of 1 x 52 hour possession and 2 x 28 hour possessions
- Podium structure and deck completed by end of this phase



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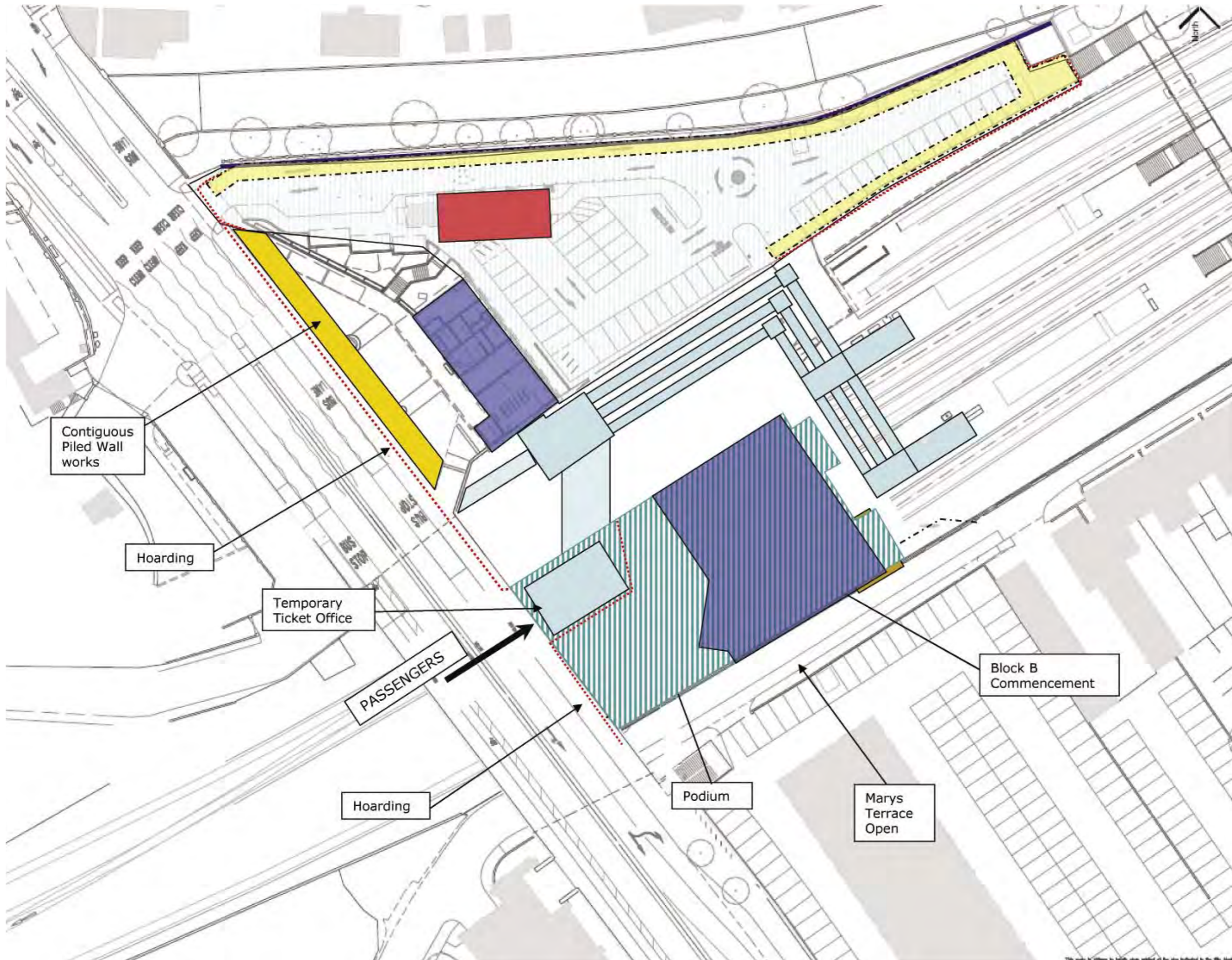
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Indicative Phasing Plan Phase 5

Week Nos.

- Platform extension contractor compound decommissioned and removed
- Temporary ticket office erected on podium
- Divert existing station services to temporary ticket office
- Divert passengers to new ticket office
- Commence Block B superstructure over podium
- Divert existing HV traction cable
- Re-align site hoarding to London Road
- Commence piled retaining wall to London Road



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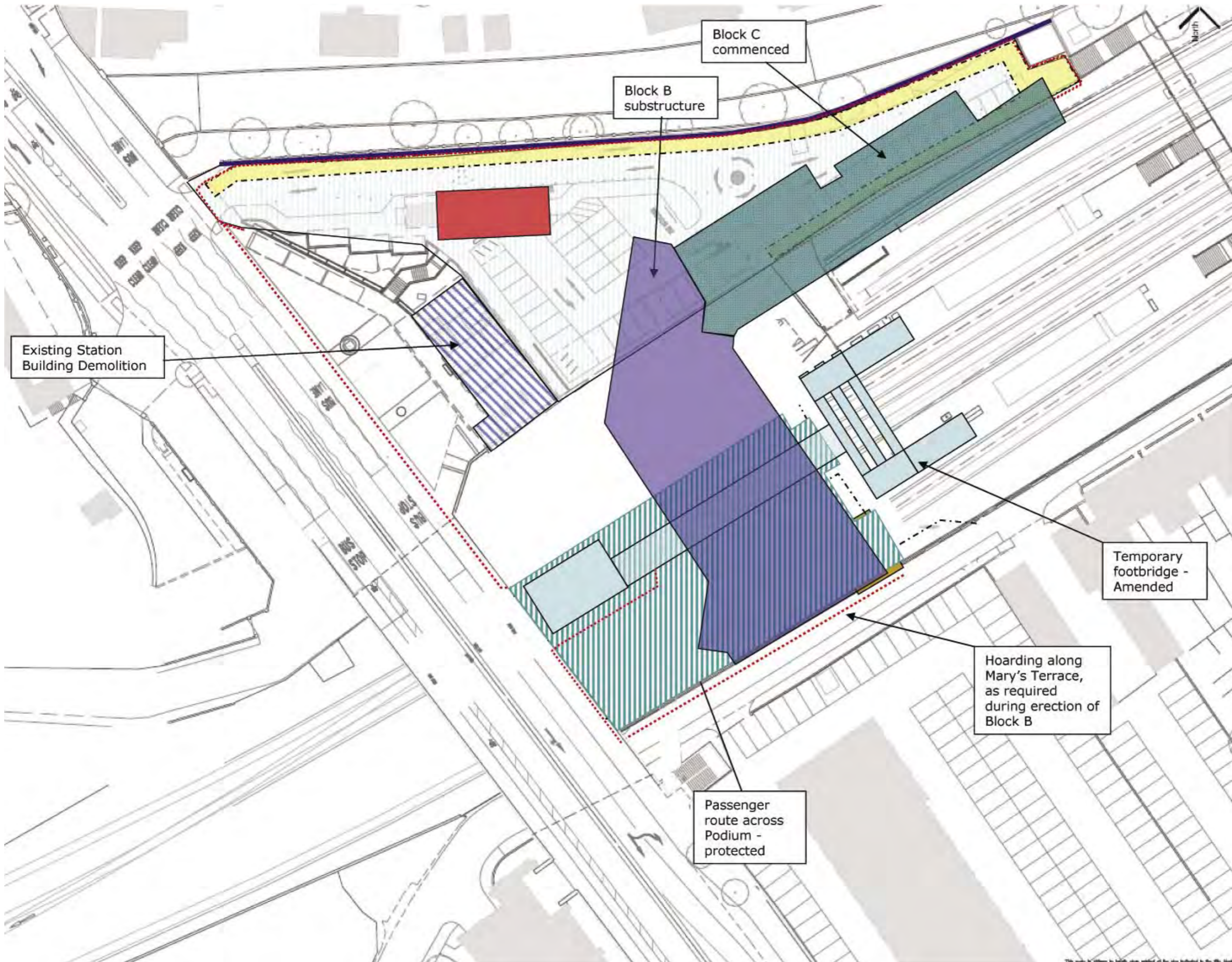
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Indicative Phasing Plan Phase 6

Week Nos.

- Form protected passenger tunnel over podium from temporary ticket office to re-configured temporary footbridge
- Demolish existing station building
- Partially remove the temporary footbridge access from the existing station
- Commence Block C foundations
- Block B superstructure over podium continues



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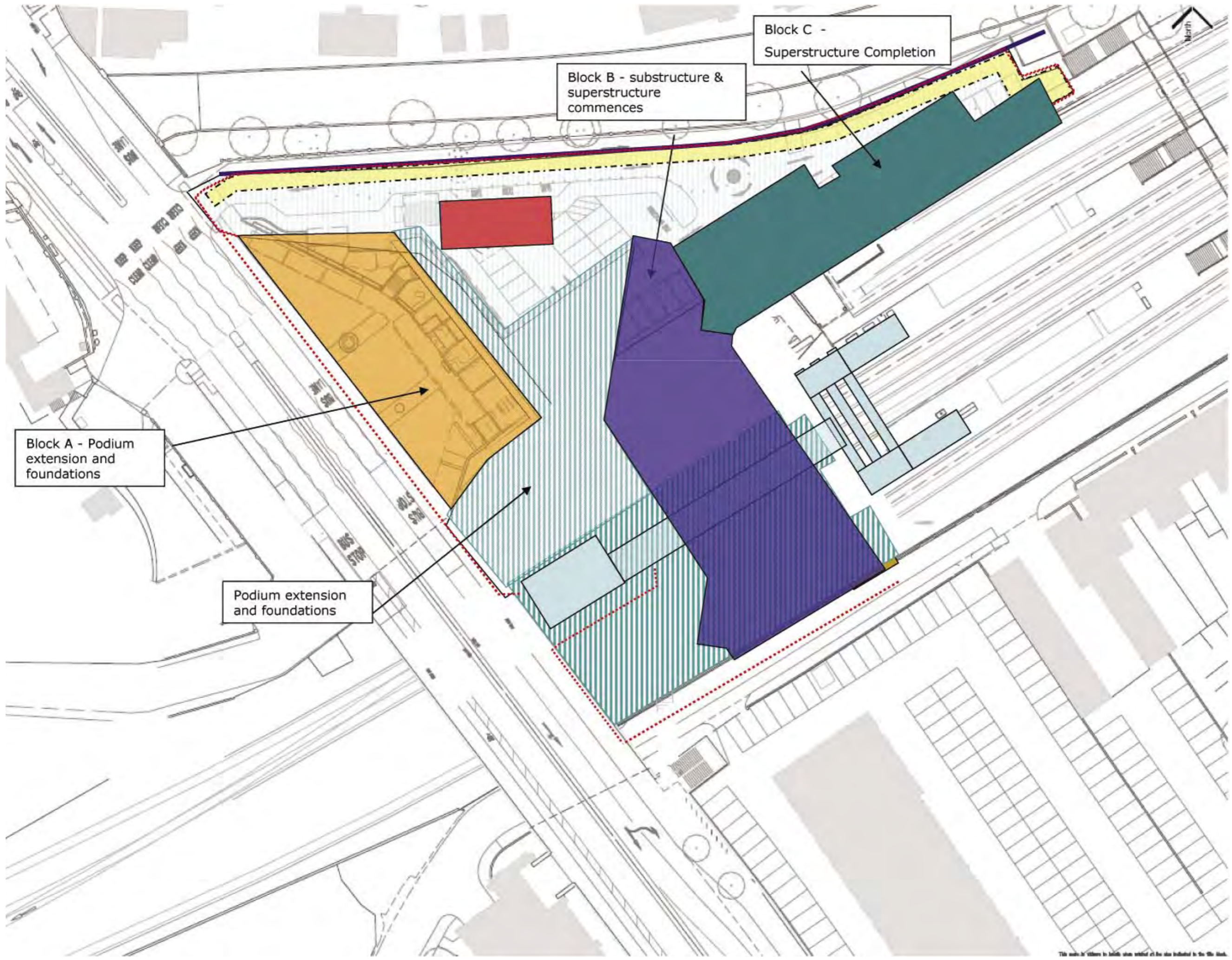
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Indicative Phasing Plan Phase 7

Week Nos.

- Excavate Block A basement behind piled retaining wall
- Install piling and foundations to Block A and remainder of Block B and podium structure over car park
- Complete Block C superstructure



Block A - Podium extension and foundations

Podium extension and foundations

Block B - substructure & superstructure commences

Block C - Superstructure Completion



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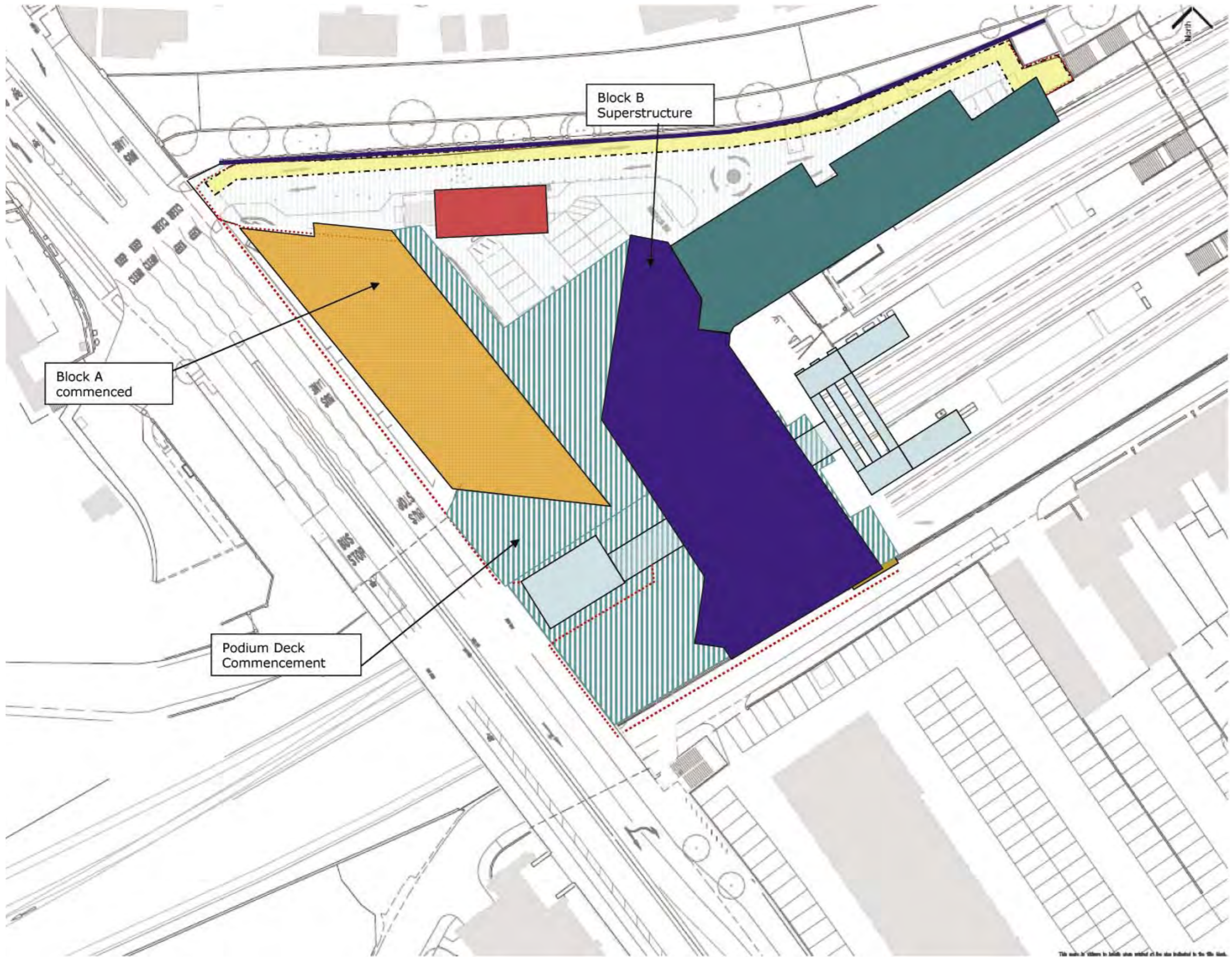
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Indicative Phasing Plan Phase 8

Week Nos.

- Block A superstructure commences
- Block B superstructure continues
- Podium deck over car park constructed
- Block C fit out completed



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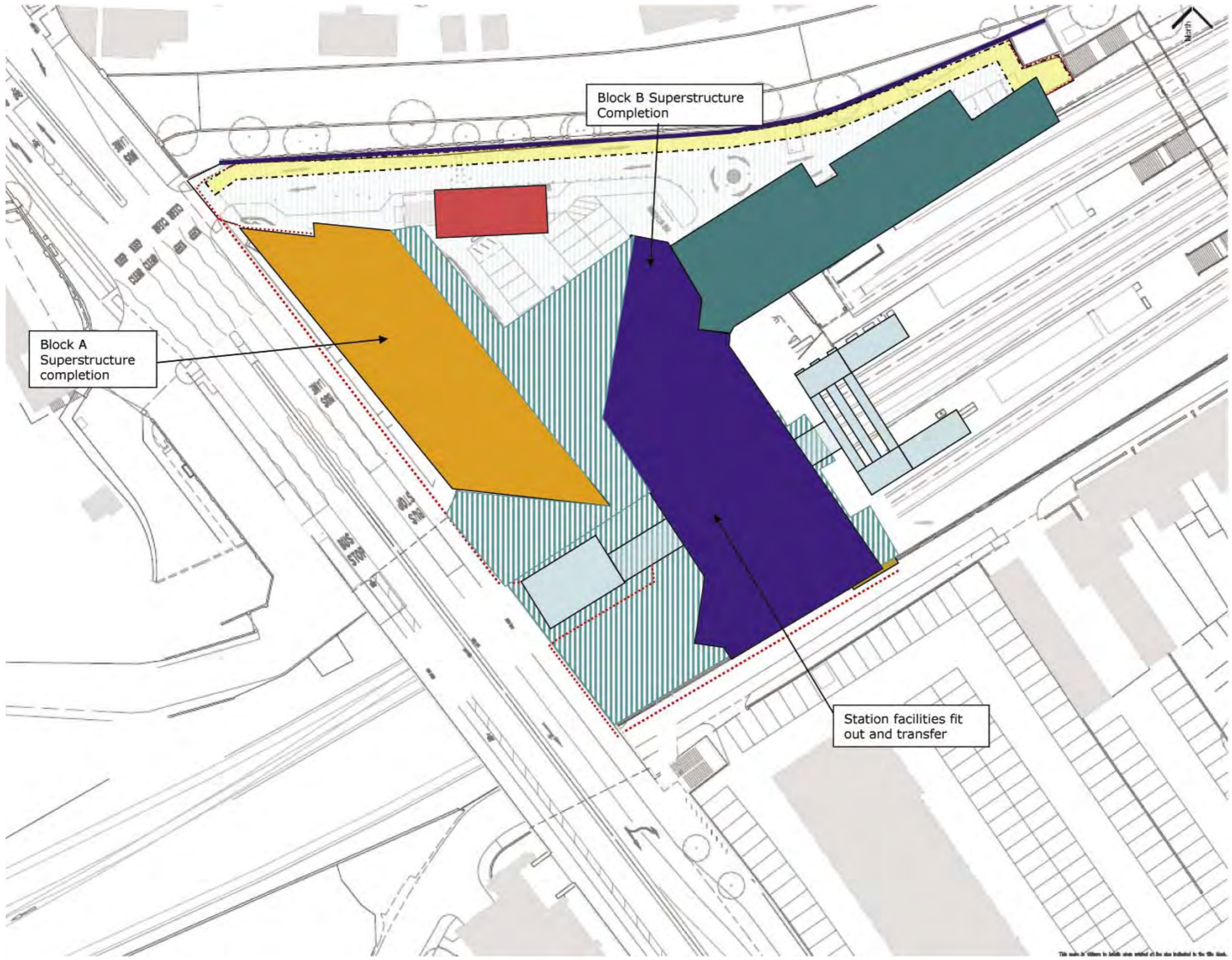
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Indicative Phasing Plan Phase 9

Week Nos.

- Blocks A and B superstructure completes
- Permanent station facilities fit out and commissioned
- Block A and B internal fit out continues
- Podium landscaping finishes installed



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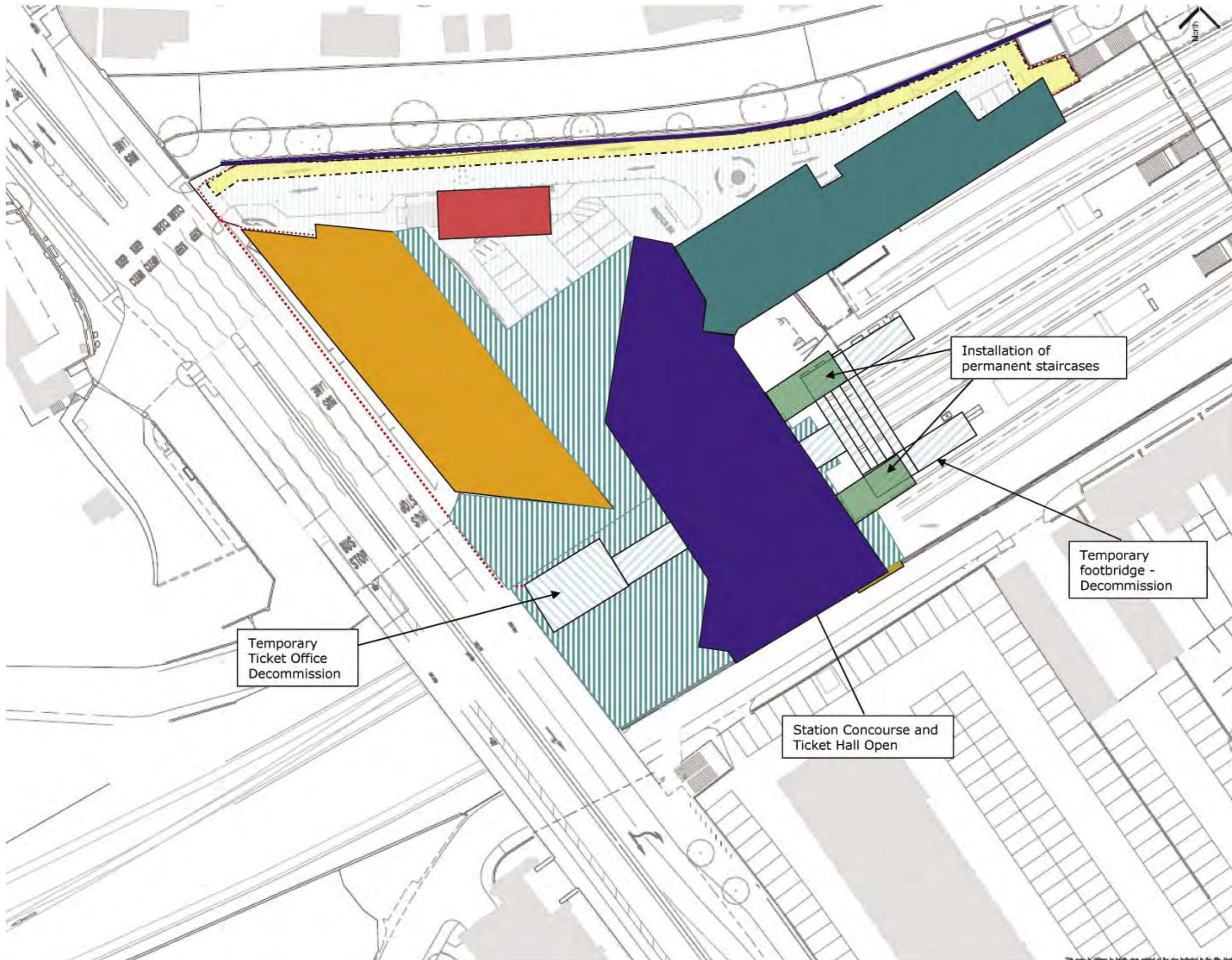
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Indicative Phasing Plan

Phase 10

Week Nos.

- Temporary ticket office decommissioned and removed
- Passenger protection tunnel removed
- Temporary footbridge and platform access stairs removed
- Permanent staircases installed
- Platform canopies re-installed to new permanent staircase roofs
- Podium finishes in area of temporary ticket office and passenger tunnel completed
- Permanent station concourse and ticket hall opens
- Contractor's site establishment and compound removed
- Car parking surfacing completed
- Hoardings removed
- Block A completed and handed over
- Block B completed and handed over
- Block C completed and handed over



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Site Waste Management Plan
SOLUM REGENERATION - TWICKENHAM STATION DEVELOPMENT

Reference: **CO.../SRMP/001**
Rev 001:

Project Information

Client	Network Rail		
Principal Contractor	Kier Construction		
Project Location	Twickenham Station		
Project Value (£k)	£2.5M		
Start Date	7 th February 2011	End Date	4 th November 2013
Project Manager			
Person Drafting this Form if different from Project Manager			
Waste Management Coordinator/Champion	Adrian Fox (Construction Manager)		
Document Controller	Tom Mc Carthy		
Project Type and Scope	Please tick relevant scope		
Civil Engineering Projects	Highways: major	<input type="checkbox"/>	Power Generation
	Highways: minor	<input type="checkbox"/>	Harbours and Waterways
	Airports	<input type="checkbox"/>	Water and Sewerage
	Rail	<input type="checkbox"/>	
	Other:	Building works in a rail environment	

Document Control

Version	Date	Person Responsible for SWMP	Company Position and	Project Stage
001	15 th Oct 2010	R How	Kier Project Manager	Planning

Declaration

The person in charge of the project and the principal contractor will take all responsible steps to ensure that -	
a) all waste from the site is dealt with in accordance with the waste duty of care in section 34 of the Environmental Protection Act 1990 and the Environmental Protection (Duty of Care) Regulations 1991 and: b) materials will be handled efficiently and waste managed appropriately	
Person in charge of Project (Client)	
Signed by	
Print Name	Rob Sirett
Organisation	Solum Regeneration
Position	Associate Director
Date	
Principal Contractor	
Signed by	
Print Name	Robin How
Organisation	Kier Construction
Position	Project Manager
Date	15 th Oct 2010

Identified Sub-Contractors

Company Name	Name	Signature	Date

(Add rows if required)

Part	Section	Title	Page
1 Introduction	1.1	Scope	4
	1.2	Intent	4
2 Control Measures	2.1	Operation Statement	7
	2.2	Requirements	7
	2.3	Checking	7
	2.4	Transfer Notes	8
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	2.6	Hazardous Wastes	8
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	2.8	Training	8
3 Responsibilities	3.1	Activities and Waste Types	9
Appendices			
	A	Data Sheets	11
	B	Waste Carrier/Licence Details	12
	C	Emergency Contacts	13

1. Introduction

1.1 Scope

This Waste Management Plan outlines procedures under the Waste Management Plans Regulations 2008. The plan also outlines the procedures under the environmental management system for this contract and forms part of the Construction Phase Plan. It describes the control and reporting process to be followed by Kier Construction and their subcontractors.

1.2 Intent

This document will set out the process for identifying potential materials available within the site and also the residual Waste streams which will be identified and materials segregated. Where KCL has custody of waste materials to be sent off site this will be in accordance with the "Duty of Care" and spot checks will be made on carriers and disposal facilities.

TENDER/DESIGN SRMP	Comments	Savings/Action date
Has re-use of materials from excavation been utilized in design?	Due to lack of available storage space on site all materials from pile arisings shall be recycled off-site	At Mobilisation
Has a pre demolition audit been carried out?	Please Complete	
Has the design considered use of demolition material identified in the audit?	Please Complete	
Have standard components sizes been utilized within the design?	Please Complete	
Has the design any reclaimed products within it?	Please Complete	
Has full consideration been given to the use of secondary and recycled materials? Including standard blocks etc.	Please Complete	
Is unwanted packaging to be returned to the supplier for recycling or re-use?	This criteria shall be specified where appropriate in all supplier orders	Placement of orders
Has a project programme been developed to include likely waste arisings (how much, when, and what types)?	Please Complete	
Can unused materials be returned to purchaser or used on another job?	This criteria shall be specified where appropriate in all supplier orders	Placement of orders
Have surplus and useful materials been entered onto the web site for use by others.	Kier operates an internal reuse / recycling forum and where necessary also uses external exchanges.	Upon mobilisation and as they arise
Has an area of the site been designated for resource management, including segregation of waste?	Waste segregation shall be effected at the point it has arisen due to a lack of available space on site	Upon mobilisation
Has an area been identified for disposal of liquid wastes such as wash-down water and lubricants	Facilities shall be available on for the limited storage of foul and oily waste liquids.	Upon mobilisation

Assign responsibility for waste management planning and compliance with environmental legislation to a named individuals working for the main contractor and identified sub-contractors?	To be developed in the construction phase of this plan	Prior to mobilisation
Put measures in place to deal with expected (and unexpected) hazardous waste.	Comprehensive sampling and WAC testing shall be carried out to determine if/where hazardous waste is present.	Prior to mobilisation
Where relevant, obtain discharge from the Environment Agency.	N/a	N/a
Has agreement been sought from the sewerage company for trade effluent discharge?	N/a - Foul waste to be removed by licensed tanker.	N/a
Do any of the planned waste activities require a waste management license or an exemption to be registered?	No	N/a
Identify the most appropriate sites for disposal of residual waste (non-hazardous and hazardous) from the project?	TBA when waste contractors for the project have been confirmed.	Placement of orders
CONSTRUCTION PHASE		
Client acceptance of the Site Resource Management Plan if appropriate.	Shall be sought and confirmed by signature	Prior to mobilisation
Training of sub-contractors producing significant waste streams.	Waste segregation & minimisation training shall be given as part of activity specific task briefings	Prior to specific activities commencing
Sub-contractors sign the Site Resource Management Plan.	Yes and be briefed upon the pertinent points	Prior to mobilisation
Identify further opportunities for re-use of materials on-site	As part of each activity planning process	Prior to mobilisation
Identify further opportunities for re-use of materials off-site	As part of each activity planning process	Prior to specific activities commencing
Have surplus and useful materials been entered onto the web site for use by others.	As part of each activity planning process	Prior to specific activities commencing

Identify further opportunities for on-site processing and re-use of materials.	As part of each activity planning process	Prior to specific activities commencing
Identify opportunities for reprocessing materials off-site.	As part of each activity planning process	Prior to specific activities commencing
Identify opportunities for reducing disposal costs from waste materials which have a commercial value.	As part of each activity planning process	Prior to specific activities commencing
Carry out a careful evaluation of materials so that over-ordering and site wastage is reduced including a review of the website stock.	As part of each activity planning process	Prior to specific activities commencing
Toolbox talks for all site personnel about waste management on-site	As part of each activity planning process	Prior to specific activities commencing
Segregate of waste materials	As part of each activity planning process	Prior to specific activities commencing
Containers/skips clearly labelled to avoid confusion	As part of site setup	Prior to mobilisation
Waste stored securely to prevent any losses, in particular of hazardous substances	As part of each activity planning process	Prior to specific activities commencing
Monitor waste management procedure	As part of each activity planning process and regular waste reviews as the works progress and logged on BRE's - Kier Group's SmartWaste	As required
Reports on waste quantities and treatment/disposal routes, and on costs incurred	All waste arisings are planned and entered onto SmartWaste. A monthly reconciliation is carried out.	Monthly

2. Control Measures

2.1 Kier Construction Ltd will operate in accordance with the requirements of Company procedures and best industry practice.

2.2 All reasonable steps are to be taken to ensure:

- No unauthorised keeping, deposit or disposal of waste materials
- No unauthorised treatment of waste

- No escape of waste material
 - Waste is only transferred to an authorised person
 - A transfer note is used with a written description of the waste, a description of any hazardous properties and the appropriate code from the List of Wastes
- 2.3 Checks are to be made that both the carrier and receiving facility are licensed (to deal with that particular waste).
- 2.4 Transfer notes are to be kept on-site for the duration of the works and arrangements made for them to be retained for a period of not less than two years. Where a sub-contractor is responsible for the disposal of waste material KCL are to be informed of the location of these records
- 2.5 Waste materials should be segregated by type (List of Waste coding) while temporarily stored prior to disposal.
- 2.6 Hazardous wastes must be identified and kept separately.
- They must not be mixed or blended with non-hazardous or inert materials
 - All Oils are Hazardous
 - Fuel contaminated soils should be considered as hazardous until proven otherwise
- 2.7 The following are not to be sent to landfill:
- Liquids
 - Explosive, Corrosive, Oxidising or Flammable materials
 - Tyres with an outside diameter less than 1400mm
- 2.8 Training will be given to ensure that all staff are aware of the necessary operating procedures.

3. Responsibilities (To be completed Prior to Mobilisation)

Activity	Sub-Contractor / KCL	Waste Material	Waste Code	Disposal Method	Disposal Arranged By
Site Clearance	To be completed	Mixed demolition waste	17 09 04	Dispose of to waste transfer/recycling station	To be completed
Concrete Works	To be completed	Concrete overspill/break off	17 01 07	Dispose of to waste transfer/recycling station.	To be completed
Planings	To be completed	Bitumen coated stone	17 03 02	Re-use as Haul road material/Sent to landfill	To be completed
Structural steel and temporary works	To be completed	Scrap Ferrous Metal	17 04 05	Re-use as temporary works steel or sell to merchant.	To be completed
Drainage and foundation excavation	To be completed	Soil and Stones	17 05 04	Re-use on site or to landfill as capping	To be completed
Building Construction	To be completed	Gypsum Products	17 08 02	Get manufacturer to take back or landfill as last resort.	To be completed
	To be completed	Mixed demolition waste	17 09 04	Dispose of to waste transfer/recycling station.	To be completed
Shuttering	To be completed	Wood	17 02 01	Dispose of to waste transfer/recycling station.	To be completed
Shuttering	To be completed	Plywood/chipboard	17 02 04	Dispose of to waste transfer/recycling station.	To be completed
Plant maintenance	To be completed	Readily biodegradable hydraulic oils	13 01 12	Dispose of at facility licensed for hazardous waste.	To be completed
	To be completed	Mineral-based non-chlorinated engine, gear and lubricating oils	13 02 05	Dispose of at facility licensed for hazardous waste.	To be completed
	To be completed	Absorbents, filter materials (including oil filters), wiping cloths, protective clothing contaminated by dangerous substances	15 02 02	Dispose of at facility licensed for hazardous waste.	To be completed
Spillages	To be completed	Absorbents, wiping cloths & protective clothing contaminated by dangerous substances	15 02 02	Dispose of at facility licensed for hazardous waste.	To be completed

DRAFT

Project name	Twickenham Station Regeneration Project
Date when this table was completed	Oct 2010 (Initial estimates)
Stage of project (Delete As Necessary)	Planning Phase
Report number (projected waste arising should be report 01 etc)	00
Main contractor	Kier Construction
Person and company completing this form	R How, Project Manager, Kier Construction

Types of waste arising (add more rows if needed):

Material	Quantity (in m ³) to be reported cumulatively from the start to the finish of the project								
	Total amount	Re-used on site	Re-used off site	Recycled for use on site	Recycled for use off site	Sent to recycling facility	Sent to WML exempt site	Disposal to landfill (non-contaminated)	Disposal to landfill (contaminated)
Inert	2000 tonnes				100%				
Vegetation	30 tonnes				100%				
Jap Knotweed	30 tonnes								100%
Concrete	400 tonnes					100%			
Office Waste	4 tonnes					100%			
General Domestic	15 tonnes					100%			
Foul Waste	30 tonnes						100%		
Rebar	0.5 tonne				100%				
Scrap metals	1 tonne				100%				
Oils	0.5 tonne					100%			
Greases	0.1 tonne					100%			
Timber	15 tonnes				100%				
Blacktop	200 tonnes				100%				
Totals (Tonnes)									

Performance score as %								
SRMP target %								

SECTION 1 Relevant waste licences and exemptions (include other licences/ consents such as water discharge consents or abstraction licences if wished)								
Waste activity that requires a licence or exemption to be notified			Details of licence/ exemption if required			Details of how you are meeting the conditions/terms of the licence/exemption		
<i>None envisaged</i>			N/a			N/a		
SECTION 2 Duty of Care								
(Activity Key: Handling/Storage=H/S; Disposal=D and Transport=T)			Waste Carrier			Disposal Facility This may include more than one facility (for example transfer stations, treatment or deposition facilities, landfill sites etc.) for each type of waste. Details of <u>each</u> facility should be provided if available.		
Waste Stream Include corresponding activity type using	List of Wastes code	Source	Name of Carrier	Carrier Details	Expiry Date	Name of Site	Licence Details	Conditions of Licence Checked? (eg. covers the type and quantity of waste involved etc.)
<i>Add more rows as needed</i>								
To be completed prior to Construction Phase of the project								

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4. Emergency Contact Numbers

Name	Position	Company	Contact - Day	Contact - Out of Hours
Emergency Incident Hotline		Environment Agency	0800 807060	
Insert all emergency contact details				
<i>To be completed prior to Construction Phase of the project</i>				

DRAFT