TRANSPORT AND WORKS ACT 1992

TRANSPORT AND WORKS (INQUIRIES PROCEDURES) RULES 2004

NETWORK RAIL (HUDDERSFIELD TO WESTTOWN (DEWSBURY) IMPROVEMENTS) ORDER

CONSTRUCTION MANAGEMENT

PROOF OF EVIDENCE

MIKE PEDLEY

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Author	Network Rail
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The Network Rail (Huddersfield to Westtown (Dewsbury) Improvements) Order

Proof of Evidence – Construction Management

1. INTRODUCTION

1.1 Personal details

1.1.1 My name is William Michael Pedley (Mike), and I work for BAM Nuttall Ltd as an Engineering Manager.

1.1.2 I am a Chartered Civil Engineer (CEng) and Member of the Institution of Civil Engineers (MICE).

1.1.3 I have gained over 35 years' experience working on projects in rail, highway and other industry sectors, both for major contractors such as Skanska and BAM Nuttall and specialist sub-contractors such as Heavy Lifts. I have worked in Project Management roles; as a Principal Engineer and latterly in Engineering Management roles, many of which have involved close work with the Civil Engineering design teams for both permanent and temporary works.

1.1.4 My experience has predominantly been on national medium to large scale Civil Engineering projects such as The Northern Hub, Cross Rail (Bond St Station), Channel Tunnel Rail Link (Contract 430 - Ashford), A63 Selby Bypass and M1-A1 Link Road (Leeds). Many of these projects comprised of predominantly heavy structures and earthworks and included items such as, but not limited to, reinforced concrete caisson construction, steel composite and in situ concrete bridge decks, cable stayed swing bridge, network arch structures, and deep 'box' top-down structures.

1.1.5 I am conversant with most foundation solutions including piling methods both on land and above water, both temporary (sheet piled and combi-wall) and permanent bored, continuous flight auger (CFA) and driven piles and diaphragm walling and I am experienced in the detailed planning of the works. My experience allows me to make sound engineering and planning judgements and decisions and contribute to realising buildable and economic designs when working on Design and Build (D & B) projects or those where I support the Early Contractor Involvement (ECI), often in a multi-disciplinary environment.

1.1.6 My experience in all stages of a project allows me to be conversant with the safe methods of construction and I have a good understanding of the working areas needed to facilitate those associated activities.

1.1.7 In 2018, following the construction of the Ordsall Chord in Manchester, I was named as part of a team that received the Royal Academy of Engineering's Major Project Award in recognition of the collaboration, skill and engineering flair necessary to deliver such a complex, multidisciplinary feat of railway engineering.

1.1.8 I joined the Transpire Alliance which became Transpennine Route Upgrade West Alliance ("the Alliance) in December 2017, initially tasked with supporting the permanent works design team and supporting the ECI phase, and thereafter the Constructability document on behalf of the Alliance in support of the Huddersfield to Westtown (Dewsbury) Improvements scheme ("the Scheme"). Due to my experience, working alongside consultants and contractors in an open and pragmatic way I was asked to support and work closely with the Alliance partners, in particular ARUP and Network Rail's Consents Team providing information to aid the development and submission of the Network Rail (Huddersfield to Westtown (Dewsbury) Improvements) Order ("the Order). I am presenting this constructability and programme evidence on behalf of Network Rail's Construction Proof of Evidence (PoE).

1.1.9 My specific input to the Scheme includes:

- Development of the overall delivery methodology for the Order;
- Development of the overall delivery programme for the Order;
- Development of the overall rail systems staging for the Order;
- Constructability input into the design through Governance for Railway Investment Projects (GRIP) 3 & GRIP 4 to economise construction, address health and safety risk at source and ensure that the design is aligned with the developing methodology and programme for delivery;
- Pre submission of the Order, I supported the public and stakeholder consultation events and post submission, I supported ongoing engagement with stakeholders;
- Development of construction methodology and programme that aligned and fed into the following documents which support the Order:
    - Order Scheme Boundary
    - Construction Code of Practice
    - Construction Traffic Management Plan
    - Environmental Statement
    - Providing constructability input into the Option Selection Process and Value for Money (VfM) Process.

2. STRUCTURE OF THE PROOF OF EVIDENCE

2.1.1 I have outlined the scheme description and approach to Construction in Network Rails Statement of Case (SoC) (NR28) Section 7. This section outlines the delivery timescales as well as the Route Sections which have been used to describe the Scheme. In my evidence I will be referring to the Route Sections as I address the objections, which are specific to the construction of the Scheme.

2.1.2 I have outlined the Route Sections in Table 2-1 and I have highlighted the objections which I will be addressing in my PoE. The Route Sections are described in more detail in section 7.3 to 7.8 in the SoC.

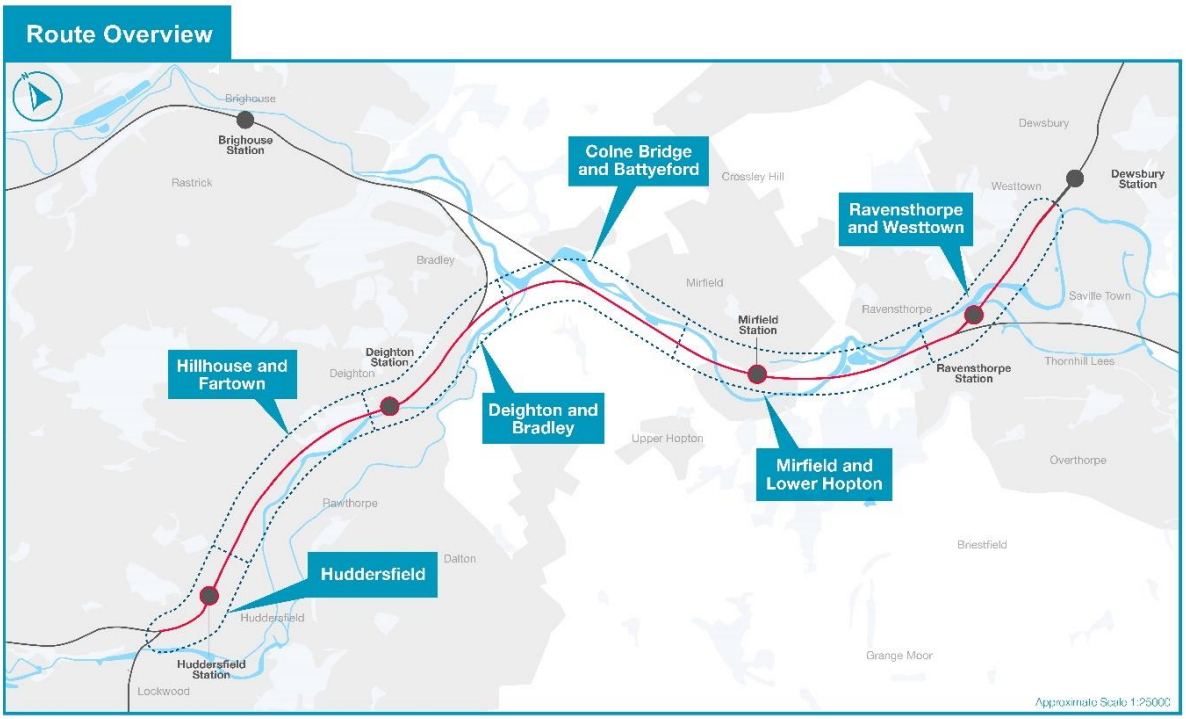
Table 2-1: Route Sections & Objections

Route Section	Objection Reference Number	Objection Details
Route Section 1: Huddersfield	OBJ23	HD1
Route Section 1: Huddersfield	OBJ14	Brian Jackson House
Route Section 1: Huddersfield	OBJ15	Kinder Properties
Route Section 1: Huddersfield	OBJ43	CUIBCO
Route Section 1: Huddersfield	OBJ16	Domino's
Route Section 2: Hillhouse & Fartown	OBJ33	Kirklees Council Emerald Street Waste Site
Route Section 3: Deighton to Bradley	OBJ13 / OBJ10	Buy it Direct,
Route Section 3: Deighton to Bradley	OBJ09	VW Garage
Route Section 4: Colne Bridge & Battyeford	OBJ35	Canal & River Trust
Route Section 4: Colne Bridge & Battyeford	OBJ37	Mamas & Papas
Route Section 4: Colne Bridge & Battyeford	OBJ11	Frank Marshall Estates
Route Section 4: Colne Bridge & Battyeford	OBJ27	Charities Property Fund
Route Section 5: Mirfield & Lower Hopton	OBJ39	British Bung
Route Section 5: Mirfield & Lower Hopton	OBJ24	Rosemary Carr
Route Section 5: Mirfield & Lower Hopton	OBJ26	Dr Reddys
Route Section 6: Ravensthorpe & Westtown	OBJ18-22	New Lay

Route Section 6: Ravensthorpe & Westtown	OBJ29	Wakefield Sand & Gravel
Route Section 6: Ravensthorpe & Westtown	OBJ35	Canal & River Trust
Route Section 6: Ravensthorpe & Westtown	OBJ33	Kirklees Council Weaving Lane

2.1.3 Figure 2-1 below shows the Route Sections from Huddersfield to Westtown (Dewsbury).

Figure 2-1: Route Section Huddersfield to Westtown (Dewsbury)



2.1.4 My evidence relates to the development of the design in respect of construction input required in order that the Scheme is able to be built, safely, economically and that suitable construction and logistics access is considered in the design.

2.1.5 I will address logistics, compound strategy and location, plus brief methodologies envisaged to deliver the Scheme in a safe and efficient manner.

2.1.6 In addition, I will address the points 3, 4, and 5 of the Statement of Matters (dated 28th September 2021) as provided by the Secretary of State for Transport, in respect to the extent that construction affects these.

3. SCOPE OF EVIDENCE

3.1 Logistics and Compounds, Huddersfield to Westtown

3.1.1 The railway upgrade between Huddersfield and Westtown (Dewsbury) will require strategic and satellite compounds along the length of the route which is approximately 10 miles.

3.1.2 To enable the delivery of the works the construction team has developed a strategy that requires strategic compounds at Huddersfield Station (HD1 car park) and another at Ravensthorpe (the existing Demex site).

3.1.3 In addition to the strategic compounds there will be local satellite compounds to support smaller intervention works. The scale of works between Huddersfield and Westtown (Dewsbury) is sufficiently large that even the smaller interventions could be considered relatively large scale construction works such as bridge replacement works.

3.1.4 The scale of works between Huddersfield and Westtown (Dewsbury) is covered in more detail in the Construction and Design section of the SoC (NR 28) with key quantities shown in the table below (Table 3-1 – Construction Quantities).

Table 3-1: Construction Quantities

Key Quantities	
Track	c.43 km track replacement & realignment, 3km track slue, 14 switches, 11 crossovers
Overhead Line	c.63 km of wire, 804 piles, 366 masts, 168 portals
Bridges	c. 40 Bridges & structures to be replaced, modified or refurbished
Retaining Walls	c.2,000m^2 new walls (length to be added)
Earthworks	c.570,000m^3 cut and fill
Stations	4 Stations remodelled, renewed or relocated

3.1.5 Given the scale of the Scheme, temporary possession of land is required for construction activities. The land required to support the construction activities has been carefully considered to ensure that impacts on landowners, businesses, tenants, occupiers is minimised, as far as is reasonably practicable, whilst allowing the rail upgrade to be undertaken efficiently.

3.1.6 The following sections respond directly to objections and representations made to the Order, and explains the works taking place and the requirements for the works.

4. ROUTE SECTION 1: HUDDERSFIELD AREA

4.1 Key element in Huddersfield area

4.1.1 The key elements to be constructed in the Huddersfield Area are as follows:

- The refurbishment of the under capacity listed train shed (Canopy A);
- Reconfiguration of the station layout including new platforms;
- Extension of the existing subway and associated lifts;
- Provision of a new footbridge to all platforms with associated lifts;
- Reconstruction of John Williams Street and A641 Northgate bridges;
- The refurbishment of Fitzwilliam Street bridge;
- Installation of Overhead Line Electrification (OLE);
- Installation of new track and drainage, including through Huddersfield & Gledholt Tunnels; and
- Installation of new Signalling Infrastructure.

4.2 Huddersfield main site compound

4.2.1 In order to support the efficient delivery of the works noted above, a strategic construction compound is needed in close proximity to Huddersfield Station. This strategic compound is located off Fitzwilliam Street, to the north west of Huddersfield Station. The majority of the construction compound will be situated on land owned by HD1 Developments (Obj 23) which is currently used as a car park and also part of the existing Network Rail maintenance depot.

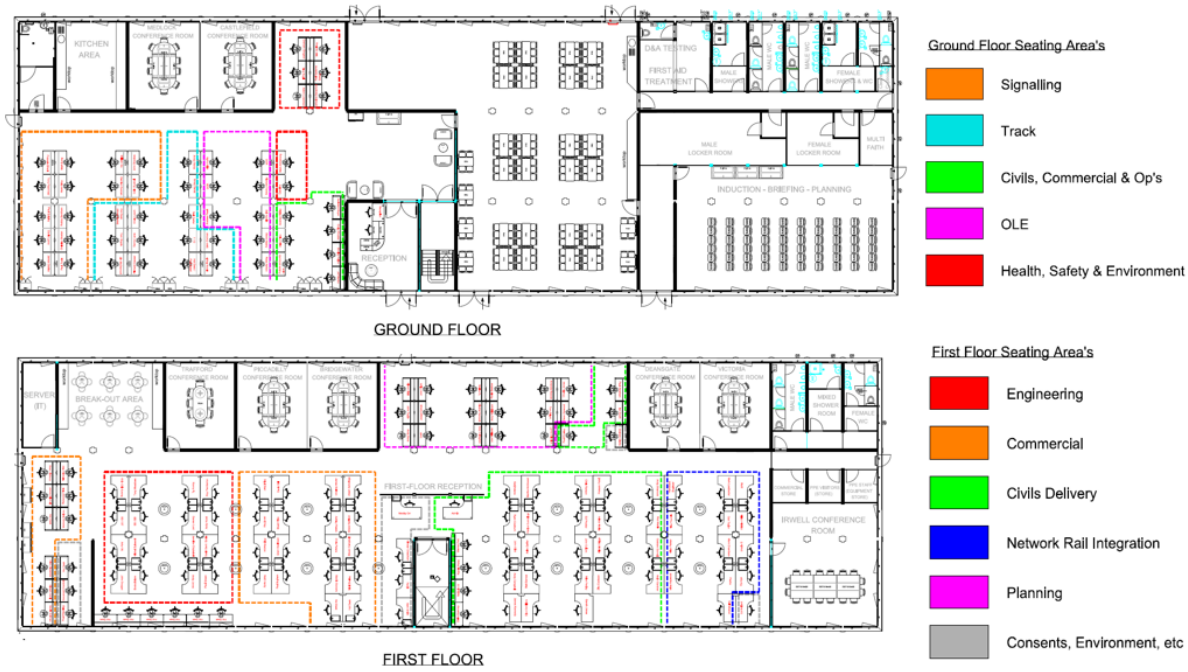
4.2.2 The strategic compound will be established in stages at HD1 as detailed below in section 4.5.

4.2.3 This will be the Alliance's main site compound to deliver the works in the Huddersfield Area and its use will include:

- Primary access to Huddersfield Station;
- The compound layout is designed for access for delivery vehicles bringing plant, equipment and materials to the worksite, as well as the primary location for material management;
- Secure storage and laydown for materials and equipment, for example, the dismantled roofs at Huddersfield Station;
- Area for the handling and distribution of materials and plant/equipment to the worksites;

- Area adjacent to the works for lifting equipment (cranes) and heavy plant to service the worksites, for example, space is required for a circa 250t crane which is required to be adjacent to Huddersfield Station;
- A road rail access point which is key to allow access east and west to facilitate the works in Huddersfield Tunnel and the remodelling of Huddersfield Station;
- A site accommodation facility for the Alliance. This will be suitably sized to accommodate circa 200 people at peak times within a modular building, similar to that shown below (Figure 4-1). The office and welfare facility will be double storey and approximately 80m x 12m. The double stacked arrangement will be used to minimise land use and maximise available space for other elements of construction activity;
- Welfare in the form of mess rooms/canteen facilities, washing rooms, toilets, changing rooms and secure lockers will be provided; and
- The workforce will peak at circa 150 people during the blockades.

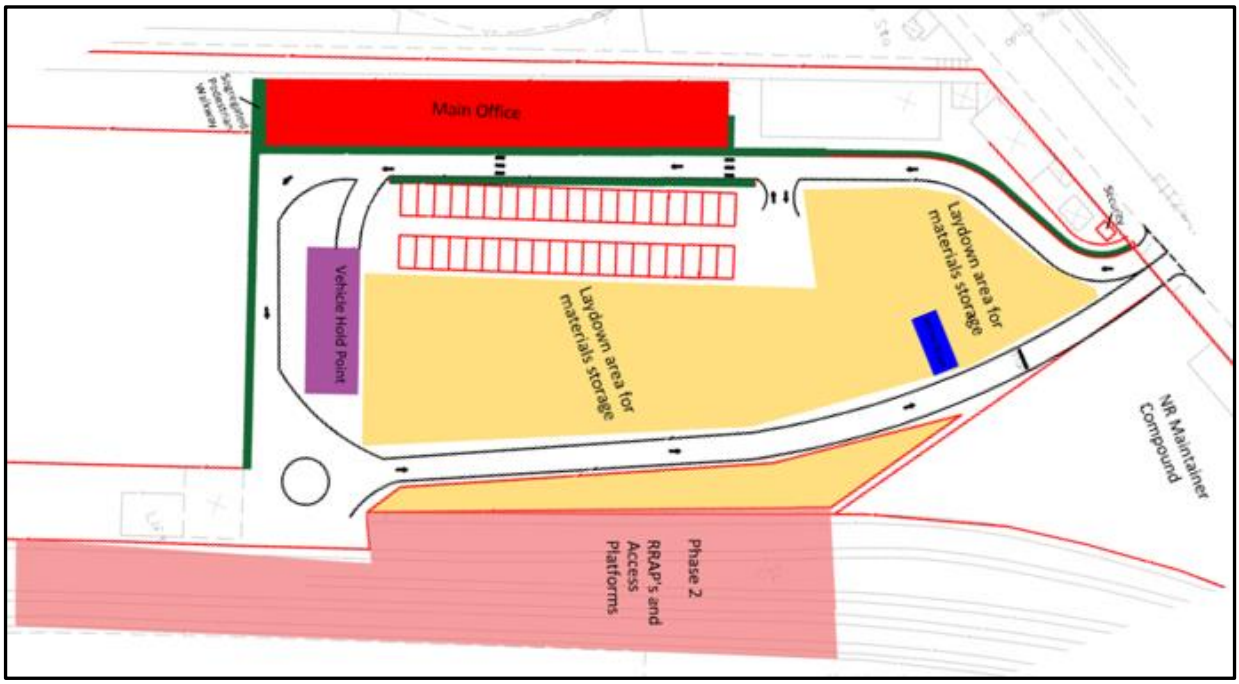
Figure 4-1: Example Office Accommodation



4.2.4 Overspill parking will be required at other locations as this site will not provide sufficient space for parking during peak construction periods. Mini buses will be used to transport staff from overspill parking during blockades to the construction compound.

4.2.5 The indicative compound layout is shown at Figure 4-2 below.

Figure 4-2: Plan Showing Huddersfield Strategic Compound Layout



4.2.6 The main compound is sized to accommodate the safe operation of heavy lifting equipment (mobile and crawler cranes) required for the demolition of the existing canopy, refurbishment of the retained roof structure and for the erection of the new sheltered areas and footbridge. The crane will also handle formwork and reinforcement for the in-situ concrete structures and will also handle precast element used in the works, for example, platform construction.

4.2.7 The design is still being developed along with detailed construction methodology, but the construction team's current assessment is that a crawler crane will be cited in this compound throughout the works.

Material Laydown

4.2.8 The material laydown area is shown at Figure 4-2 above. Material removed from the Huddersfield Station footprint during demolition and dismantling of works will be temporarily stored in this area to minimise the impact of the works on the operational station. From here they will be processed and removed from site.

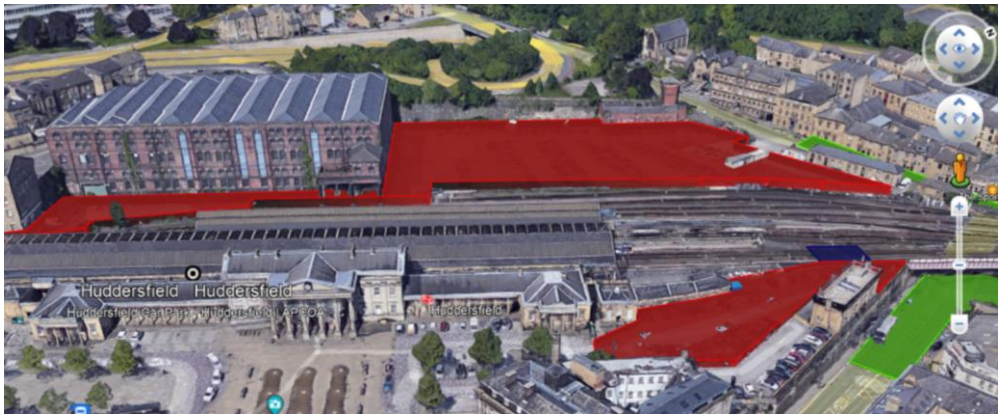
4.2.9 Materials delivered to site will be stored in the compound in advance of being incorporated into the works.

Road Rail Access Point (RRAP)

4.2.10 In advance of Blockade 1 (March/April 2024) there will be RRAPs installed to the north west of Huddersfield Station immediately adjacent to Brian Jackson

House (BJH). A second RRAP will be sited to the north west of Huddersfield Station adjacent to the existing Network Rail maintenance yard and a third RRAP (shown at Figure 4-3 in blue below) will be accessed from St George's Square.

Figure 4-3: The third Road Rail Access Point



Car Parking

4.2.11 Car parking for the workforce will be limited on this site, ensuring space is utilised primarily for the delivery of the construction work.

4.3 Suitable Alternatives Considered

4.3.1 Two other options for the main site compound were considered, they are listed as follows, and illustrated in Figure 4-4 below.

- The existing HD1 car park adjacent to the station (north of Huddersfield Station) approximately 6800m2, shown in red in Figure 4-4.
- The public open space immediately in front of Huddersfield Station main entrance, to the south, approximately 5400m2, shown in yellow in Figure 4-4.

Figure 4-4: Compound Options Huddersfield Station

4.3.2 Through my involvement during the option selection process for Huddersfield Station, I was the expert in the construction strategy. I have summarised my assessment of the two options, which I provided during option selection, in Table 4-1 below.

4.3.3 From a construction perspective both options are possible and have benefits and disbenefits. The table summarises the considerations given to each option.

Table 4-1: Benefits/disbenefit of the site compound options for Huddersfield Station

Car Park at HD1 (north of the station)	
Benefits	Disbenefits
Close proximity of the compound to the proposed works particularly Roof B&C and remodelling of the Huddersfield Station Good access from road network Sufficient space to meet the construction requirements Limited interface between public and construction works (safety) Surfacing suitable for construction traffic (compacted stone) Rail access point immediately from compound to rail network – (the next RRAP's are approximately one mile away)	Loss of public car parking and loss of car parking for adjacent building (Yorkshire Children's Charity) occupants

Limited interface with rail replacement bus services during rail closures Minimises impacts to Huddersfield Station rail users and access to the Station is maintained Limited impacts on the businesses in operation around St Georges Square Allows 24hour access to the northern side of Huddersfield Station for operatives to complete construction works Reduces impact on the town centre, directing traffic along Fitzwilliam Street rather than into St George's Square at the front of Huddersfield Station	

4.3.4 The table below, which I have produced, summarises the benefits and disbenefits to using the area immediately in front of Huddersfield Station entrance, as shown in Figure 4-4.

Table 4-2: Benefits/disbenefits of using Huddersfield Station Forecourt area

Huddersfield Station Forecourt area (south of the station)	
Benefits	Disbenefits
Close proximity to work site Possible to integrate the main compound with the smaller south side RRAP compound (ref 4.2.10)	Significant interface with rail passengers accessing the station Damage to existing surfacing Removal of urban realm area Removal of trees Relocation of taxi rank Construction deliveries interfacing with station passengers, local traffic and businesses Listed station frontage to lift over to service the works No rail access point beyond first blockade directly on to the rail network. Working from this location would still require access from HD1 to deliver the works to the north of the Station Significant interface with rail replacement bus services and passenger during rail closures works Insufficient space to accommodate equipment and material to deliver the scheme efficiently and safely, using construction logic Large crane would be required for lifting pre-fabricated components which potentially could not be accommodated at this site e.g., switches and crossings, roof trusses. Crane is located on the wrong side of the railway for the man station remodelling works which would lead to longer possessions and additional disruption RRAP is one mile away from the site at Alder Street / Hillhouse

4.3.5 Based on my assessment above, the car park at HD1 is essential to deliver the works at Huddersfield Station. This is due to there being less interface with

Huddersfield Station users, good access routes for HGVs from the main highway network avoiding town centre traffic, and direct access to the railway to allow the efficient delivery of works.

4.3.6 In my view, without HD1 as a construction site, the works occurring between the railway blockades could only be constructed in railway possessions. This includes the subway extensions, canopy B&C construction, additional platform construction and footbridge. Undertaking these works through more disruptive access (railway possessions) would result in the programme being extended, additional costs being incurred as well as adding to the disruption to railway users, businesses and the community.

4.3.7 During rail closure works (i.e., blockades) there will be rail replacement bus services in operation. This will result in increased traffic to the front of the existing station, creating a critical safety concern about managing construction and pedestrian interface. Removal of this critical safety concern was a key consideration, together with allowing the railway replacement bus service to be accommodated at the front of the station. Also, the site compound at the HD1 car park minimises the impacts on St George's Square public realm at the front of the station.

4.3.8 The HD1 car park also allows access to the existing Network Rail yard where a new Principal Supply Point (PSP) is proposed to be constructed as part of the Order. The construction of the PSP could only be facilitated from the HD1 compound and in any event requires access over the HD1 site.

4.3.9 Overall, in my expert opinion, without the HD1 site the works would have substantial additional impacts both to the programme and costs and lead to a prolonged programme which would impact on the travelling public, local community and businesses. The strategic compound in HD1 supports the phasing of the works which is detailed in paragraph 4.5.

4.4 Duration of Works at the HD1 Compound

4.4.1 Staging of the works has been identified in section 4.5 which details the various phases of the works and the uses of the HD1 Site.

4.4.2 In summary the compound will be required from mobilisation of works through to completion. The current construction programme states the compound will be mobilised in January 2023 and will remain in place until December 2025.

4.5 Phasing of HD1 Compound

4.5.1 The Huddersfield Station works have been divided into five separate phases which have been derived from the blockade/disruptive possessions required to deliver the infrastructure. The phases are;

- Phase 1 – Pre-blockade 1 which is from January 2023 to March 2024;
- Phase 2 – 1st Blockade, Mid-March 2024 to Mid-April 2024;
- Phase 3 – Between Blockade 1 and Blockade 2 dates are from Mid-April 2024 to Mid-April 2025;
- Phase 4 – 2nd Blockade, Mid-April 2025 to Mid-May 2025;
- Phase 5 – Mid-May 2025 to July 2025; and
- Phase 6 – July 2025 to December 2025.

Due to the volume of work required to be completed at Huddersfield Station, the Alliance will require the full area of the HD1 carpark which will allow the completion of Phases 1, 2, 3, 4 and 5.

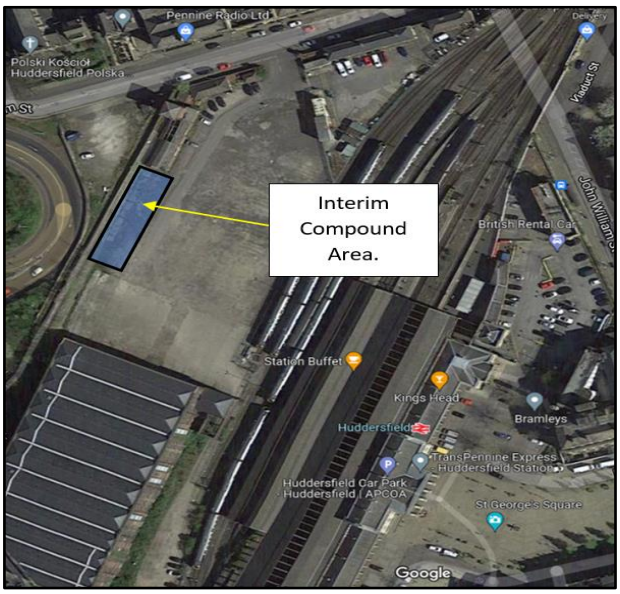
4.5.2 The project will facilitate deliveries and bin collection through the compound for Brian Jackson House (BJH -Yorkshire Children's Centre OBJ 14)) if booked in advance with the construction team and will maintain the existing fire escape route from the building in the event of any emergency for the full duration of the project.

<u>Phase 1</u>

4.5.3 The pre-blockade works will include various smaller works to the infrastructure which will enable the blockade to commence. The works will be largely contained within the Network Rail boundary fence, however temporary cable bridges across John Williams Street will be needed.

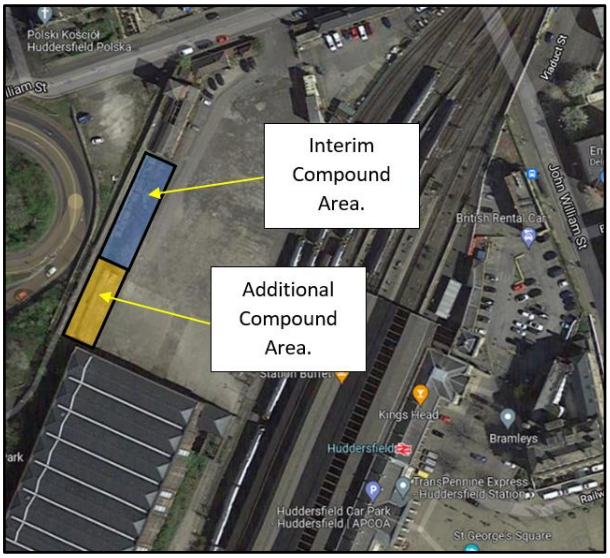
4.5.4 The works will run between January 2023 and January 2024, during which time there will be a developing occupation of the HD1 carpark area. This land will be utilised for an interim compound consisting of administration, materials handling and laydown areas plus general welfare facilities for the Huddersfield Station construction team to complete their works during this period.

Figure 4-5: Phase 1 Interim Compound Location



4.5.5 Between January 2024 and March 2024, the Alliance will be increasing the size of its welfare area within the carpark as at Figure 4-6 below. The cabins will be double stacked and extended and this will provide the permanent welfare facilities for the workforce until the end of the Huddersfield Station works in 2025. The compound will facilitate access for various works including scaffolding works for the canopy repairs, outfall drainage, and attenuation tank installation, as well as cable management through the carpark and allow permanent services to be connected up to the welfare facilities.

Figure 4-6: Interim Compound Location Jan to March 2023



4.5.6 During this phase there will be repair works to the main canopy of Huddersfield Station. The works will include the erection of a working platform

scaffold which will allow repair and painting works to be completed to the existing canopy structure during normal working hours (Mon'-Fri' 08:00 to 18:00, Sat' 08:00 to 13:00). Figure 4-7 below details the expected form of the scaffold working platform. Figure 4-8 below indicates the usage of the smaller compound located to the south of the railway during this stage.

Figure 4-7: Scaffold Working Platform and Compound Area

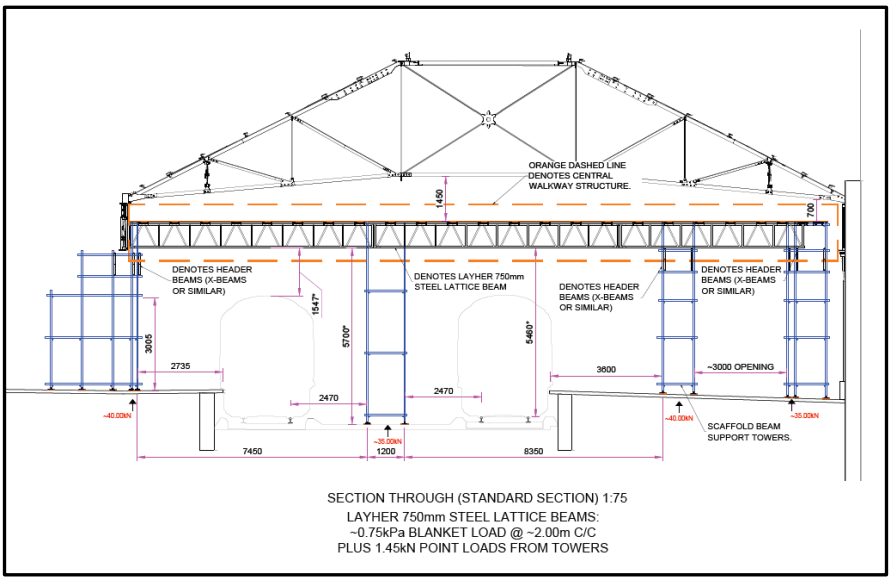
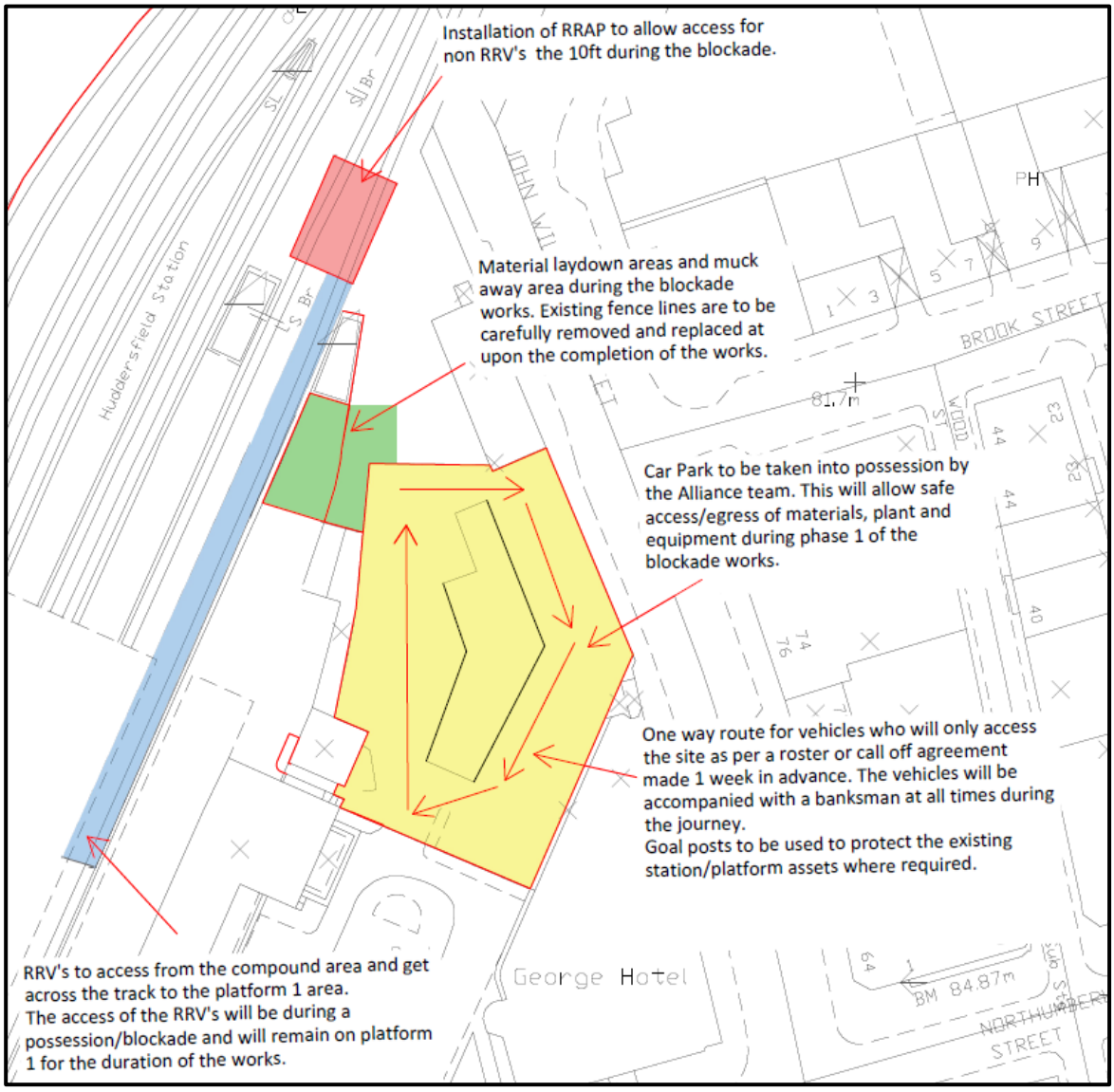


Figure 4-8: Scaffold Compound Area for Canopy A Refurbishment



4.5.7 The scaffold and canopy repair works will cease during phase 2 but recommence in phase 3 of the Huddersfield Station works. It is envisaged that there will be an estimated 250t of waste created, 500t of shot blast grit and lead waste produced, over 500t of scaffold used to complete the works and 100t of concrete to form the temporary works/foundations for the working platform.

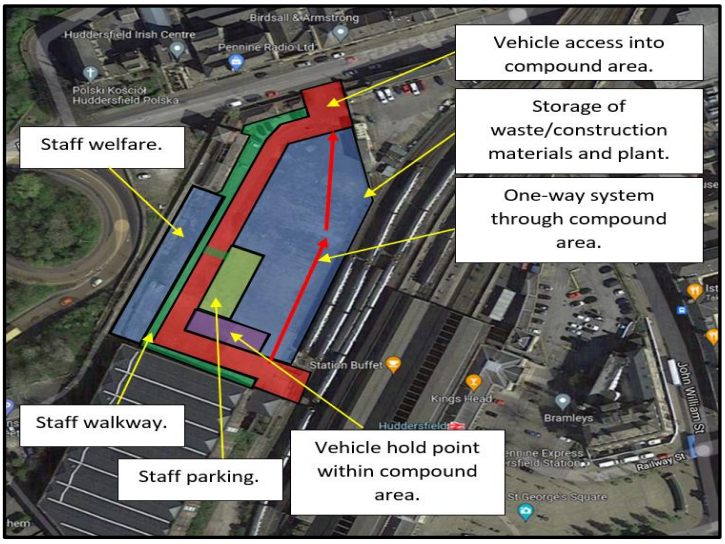
Phase 2

4.5.8 This timeframe covers Blockade 1 and will allow for the removal of demolished and waste materials and facilitate the delivery and storage of new building materials.

4.5.9 The compound will have a one-way vehicle access route with segregated pedestrian walkways as shown in Figure 4-9 (below), which will allow the safe operation of the compound. A holding area for deliveries which arrive in advance of when they are required, and a safe area for the vehicles to be off-loaded in the compound area will be established.

4.5.10 If such areas were not available during construction the surrounding Huddersfield areas would be impacted by HGVs parking where they could be held.

Figure 4-9: Compound Area at Phase 2



4.5.11 Phase 2 works will include the following scope:

- Platform rebuild works;
- Mining mitigation works;
- Platform adjustment works;
- Platform extension works (three no. platforms);
- Demolition to 2no. canopies;
- Removal of track to all station;
- Installation of new track on platforms 1, 2 and 3; and
- Installation of various types of temporary works whilst demolition is underway throughout Huddersfield Station.

4.5.12 It is envisaged that the works will require storage for various kinds of plant throughout this phase of works. Initially this will include cranes, dumpers, excavators, 8 wheeled waste wagons, HGVs to deliver materials and equipment, generators, tower lighting, etc.

4.5.13 For the track work in this phase, rail delivery of componentry and ballast will be maximised to reduce the impact of road deliveries on the highway network.

4.5.14 During Phase 2 it is envisaged that the following activities and quantities of materials will be removed from site:

- In excess of 2000t of waste excavated material;
- 3000t of demolished platform materials;
- c.250t of demolished canopy to be processed and removed from site;
- 1000t of demolished building waste;
- 100t of materials to be carefully reduced and stored then to be rebuilt back at Huddersfield Station at a later stage;
- Storage for a 1000t of new ballast (this is in addition to the ballast trains)
- Storage for 500t of new track (in addition to the track arriving via train);
- Storage of 1000t of new stone materials to provide safe working platform for plant and access routes for operatives when ballast and track is removed; and
- 1000m of solid/Haras fencing to be established upon the station.

Phase 3

4.5.15 Phase 3 is the interim works between the two blockades and there is a significant volume of works to be progressed in this period.

4.5.16 The works will include the following:

- Installation of 2no. new canopies to the north of Huddersfield Station;
- Continued refurbishment of the retained listed canopy A;
- Extension to Huddersfield Station subway;
- Installation of a new footbridge and lift shafts;
- Canopy extension works;
- Installation of drainage and troughing;
- Installation of new services and station infrastructure to the platform areas;
- Installation of undertrack crossings; and
- Installation of working platforms, and construction of new platforms.

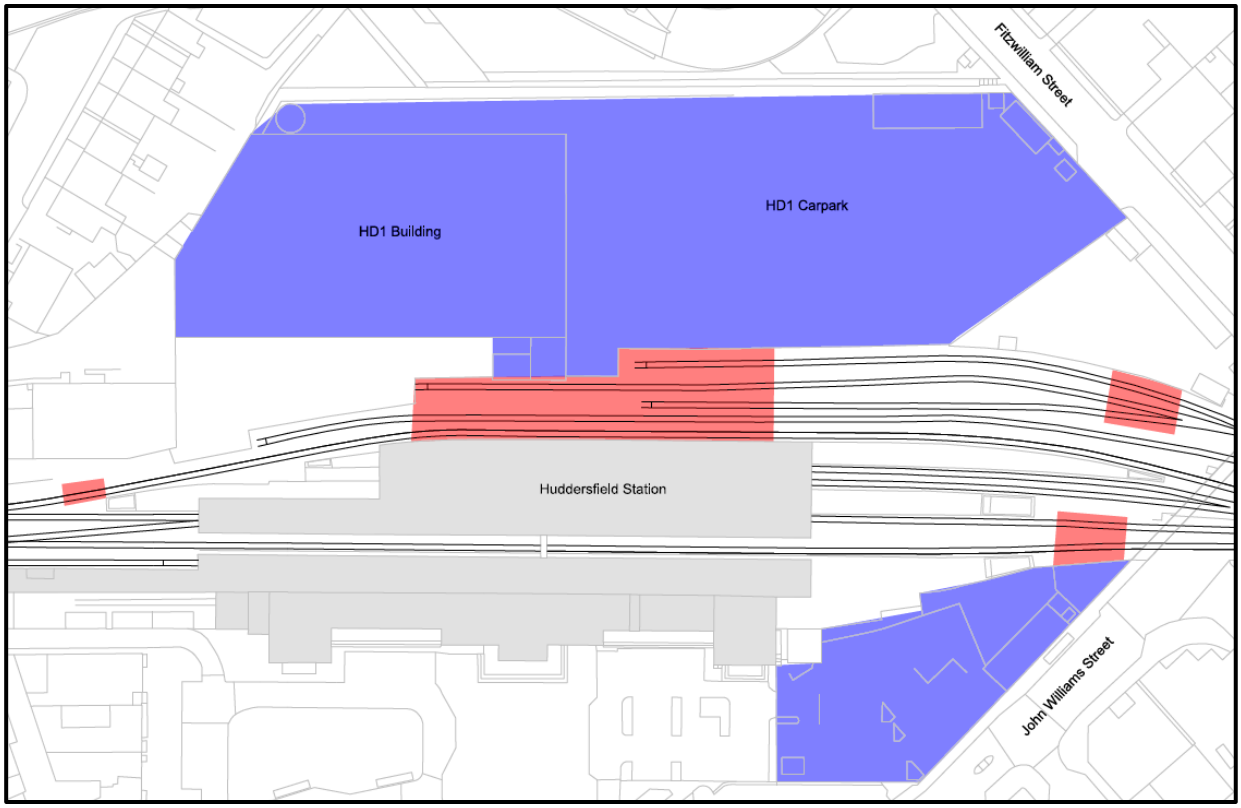
4.5.17 As part of the Scheme, a substantial amount of waste materials will be produced and will be required to be stored and later removed from site.

4.5.18 There will also be a significant number of new materials that will have to be delivered, off-loaded, stored at site then used on a 'just-in-time' basis due to the limited compound space available.

4.5.19 During this phase of works the Alliance will have largely unimpeded access to the northern half of Huddersfield Station construction area from the HD1 carpark – see the hatched red area of Figure 4-10 below. This construction strategy has been agreed with Network Rail and the train operating companies (TOCs) to optimize the schedule and reduce the disruption to the travelling public.

4.5.20 There will be live train services on the existing Platforms 1, 2 and 4a and 4b throughout the Phase 3 works. The HD1 carpark facility will permit the Alliance to operate efficiently causing the minimum disruption to the operational station and the general Huddersfield Station surrounding area.

Figure 4-10: Access to Huddersfield Station from HD1 car park



4.5.21 To understand the volume of works the Alliance has to complete during this period diagrammatic evidence in the form of Figure 4-11 to Figure 4-13 are provided. Note that new construction is shown in red.

Figure 4-11: Existing station layout

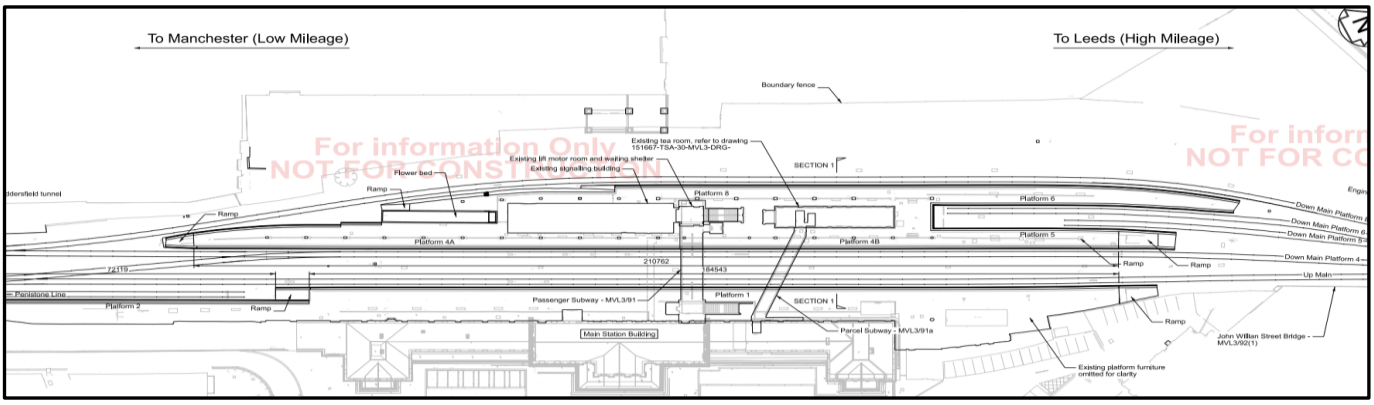


Figure 4-12: Proposed station layout

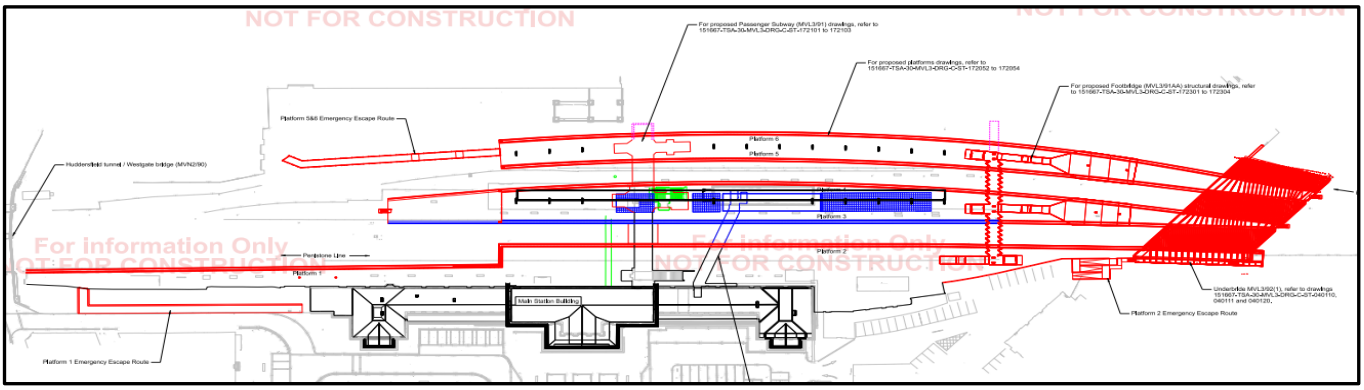
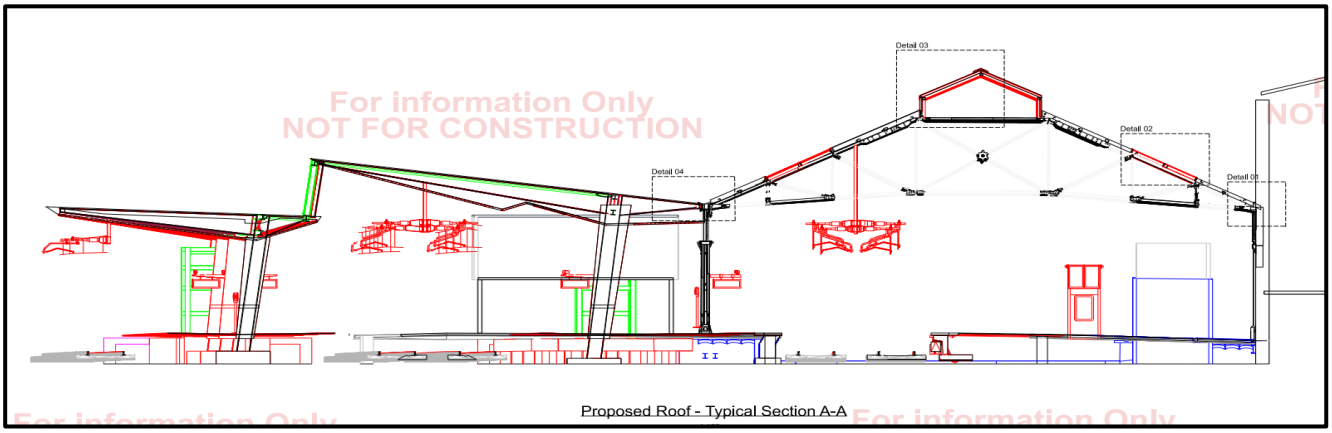


Figure 4-13: Proposed new station canopy and island platform layout



4.5.22 The works will potentially generate the following:

- 5000t of waste, expected to be removed off site;
- importing of 1500t of pre-cast units;
- 500t of new canopy/footbridge steel to be erected or bases to be formed;
- 1000t of concrete to be used during the works;

- numerous Temporary Works schemes are required to be delivered for crane foundations, piling platforms, laydown areas, excavations etc, a total of circa 1500t of stone for temporary works is estimated.

Phase 4

4.5.23 Phase 4 is the 2nd blockade and during this period the track connections to the existing infrastructure will be completed, to suit the new platform alignment and station configuration.

4.5.24 The works will include all signalling and telecom works and final test and commissioning of the new station track alignment.

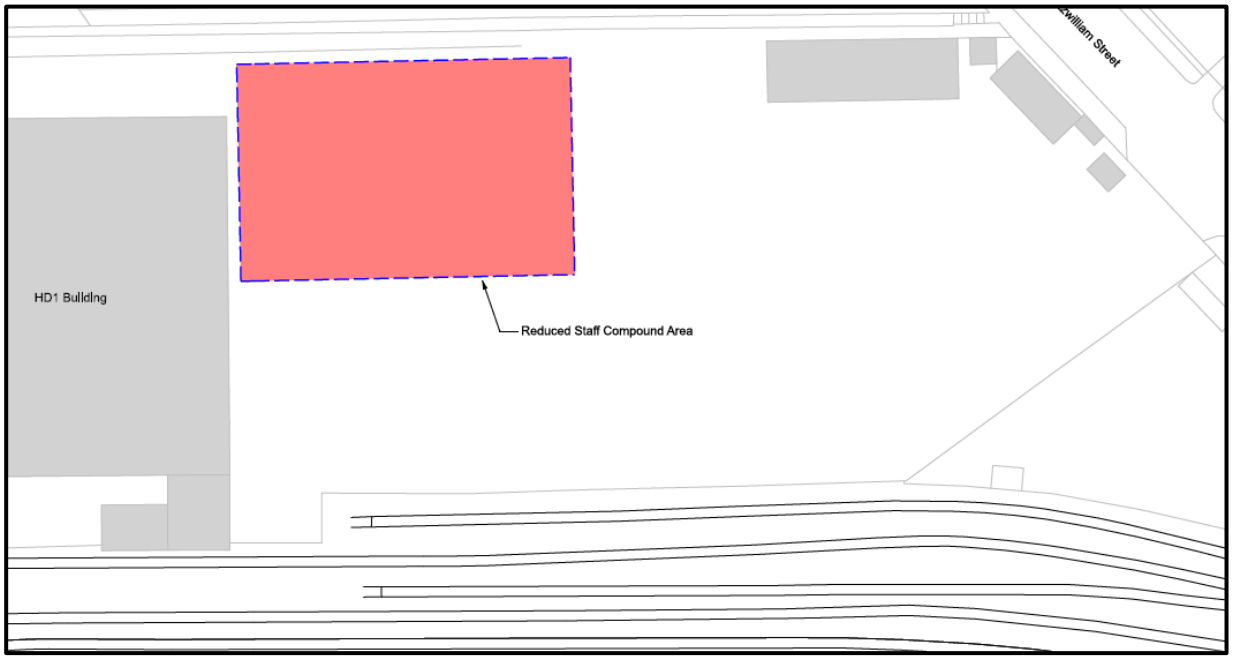
4.5.25 For these works to progress there will be some track and ballast stored within the compound area and a substantial amount of plant accessing from the compound to finalise works to Huddersfield Station.

4.5.26 Track and ballast deliveries will utilise rail deliveries where practicable to reduce the impact on the road network.

Phase 5

4.5.27 Phase 5 of the programme will be the installation of OLE equipment. The compound area is used as a staging area for the OLE materials and installation equipment, but its size will start to be reduced at this point due to the reduced numbers of Alliance staff and equipment that will be required. As the programme comes ever closer to the 2025 December deadline the compound area and physical presence will be reduced until finally removed altogether and the carpark will be reinstated and returned to HD1. Figure 4-14 below shows the staff and compound welfare area required at Phase 5.

Figure 4-14: Staff and compound welfare area at Phase 5

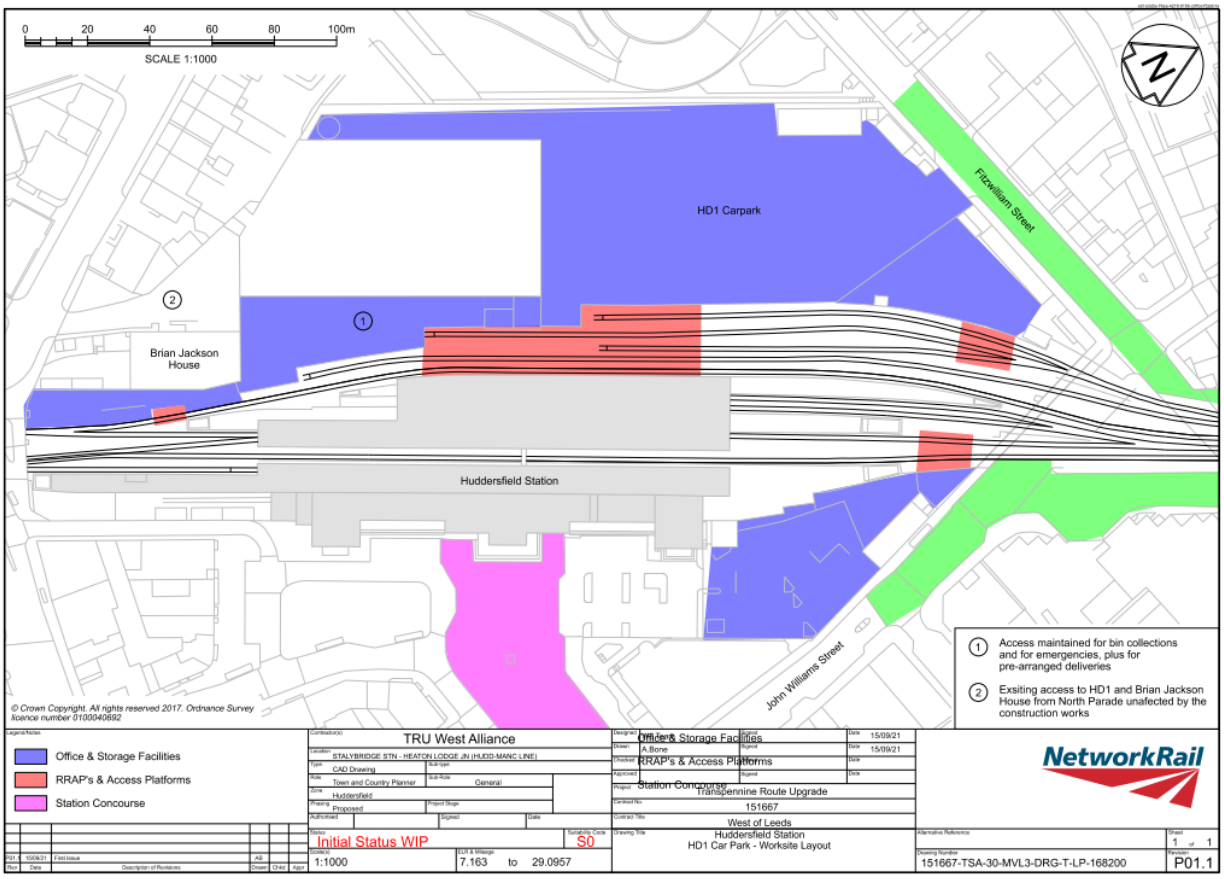


4.6 Mitigation measures for HD1 Building and Brian Jackson House

4.6.1 The compound layout makes provision for emergency vehicle access to both adjacent buildings and will allow for refuse collection from both. Planned deliveries to BJH can be facilitated through the proposed construction compound by prior agreement. However, the current parking arrangement immediately outside BJH will not be available for the duration of the works.

4.6.2 Access to BJH via New North Parade will be unaffected and whilst the car park is used for the construction compound, pedestrian and emergency access to the listed HD1 Warehouse is maintained via New North Parade – see Figure 4-15 below.

Figure 4-15: Access maintained to Brian Jackson House and HD1 via North Parade



4.7 Impact on Local Businesses, Tenants and Occupiers

4.7.1 With the compound situated in the car park at HD1, I believe this has limited impact on local businesses, tenants and occupiers, given the reduced number impacted at this location. During peak construction periods there will be a requirement to close parking bays on Fitzwilliam Street and all car parking will be removed from the HD1 car park.

4.7.2 If the alternative option to locate the construction compound on the Huddersfield Station forecourt is used, there would be a requirement for hoarding and increased traffic in the forecourt area to service the works. This is likely to add to congestion in peak periods and result in a negative impact on local businesses operating in the Market Place area.

4.7.3 There is a mental health charity located adjacent to Platform 1. I believe the design as developed and covered by Graham Thomas in the Engineering and Design Proof of Evidence (ref NR/PoE/GT/2.2) limits the interface of construction on the charity.

4.7.4 The Yorkshire Children's Centre (OBJ 14) located at BJH will be impacted by the removal of car parking. However, the existing pedestrian access from New

North Parade will not be affected. The rail upgrade design has been optimised to limit the impact of OLE on the building fabric.

4.7.5 The existing retail units and tea rooms at Huddersfield Station will be disrupted for periods during station remodelling works. I believe that the design and construction phasing has limited the impact.

4.8 Compound Location adjacent to the works, Castlegate Retail Park

Kinder Properties Limited (OBJ 15) Dominos (OBJ 16), Cubico UK Limited (OBJ 43), R&D Yorkshire Ltd (OBJ xx)

4.8.1 As described above, the strategic compound to support the works will be located to the north of Huddersfield Station on the HD1 car park site. Additional land for construction has been identified adjacent to the work site for the demolition and reconstruction of John William Street Bridge, and the refurbishment of Fitzwilliam Street between April 2024 and April 2025

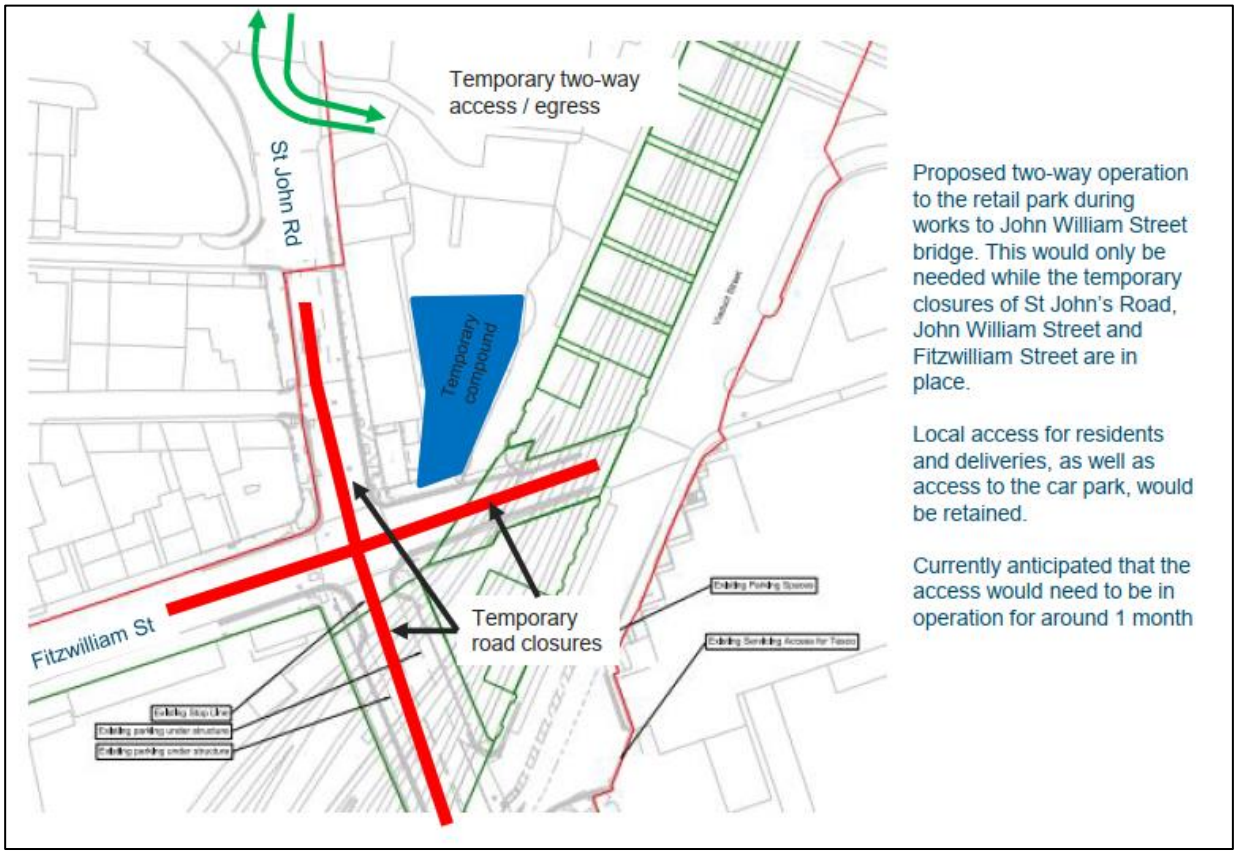
4.8.2 This additional compound is needed for the requisite lifting equipment (cranes); the handling and removal of the existing structures; and the delivery and installation of the replacement structures. During construction periods a portion of the Castlegate Retail Park car park is required for Blockade 1-April 2024 c. 15 days and Blockade 2 - April 2025 c.10 days as shown in Figure 4-16 to 4-19.

4.8.3 During Blockade 1, a crane is required to oversail the Dominos and Cubico retail units as shown in Figure 4-17 for an envisaged period of 2 to 3 days. To maintain public safety, it is imperative to temporarily close the businesses during these periods.

4.8.4 During Blockade 2, a crane is required to again oversail the Dominos and Cubico retail units as shown in Figure 4-19 for 1 to 2 days. To maintain public safety, it is imperative to temporarily close the businesses during these periods.

4.8.5 Between the blockades, we propose revised access arrangements that would enable the businesses to operate normally - see Figure 4-16.

Figure 4-16: Proposed Temporary Compound and Road Closures at Castlegate Retail Park

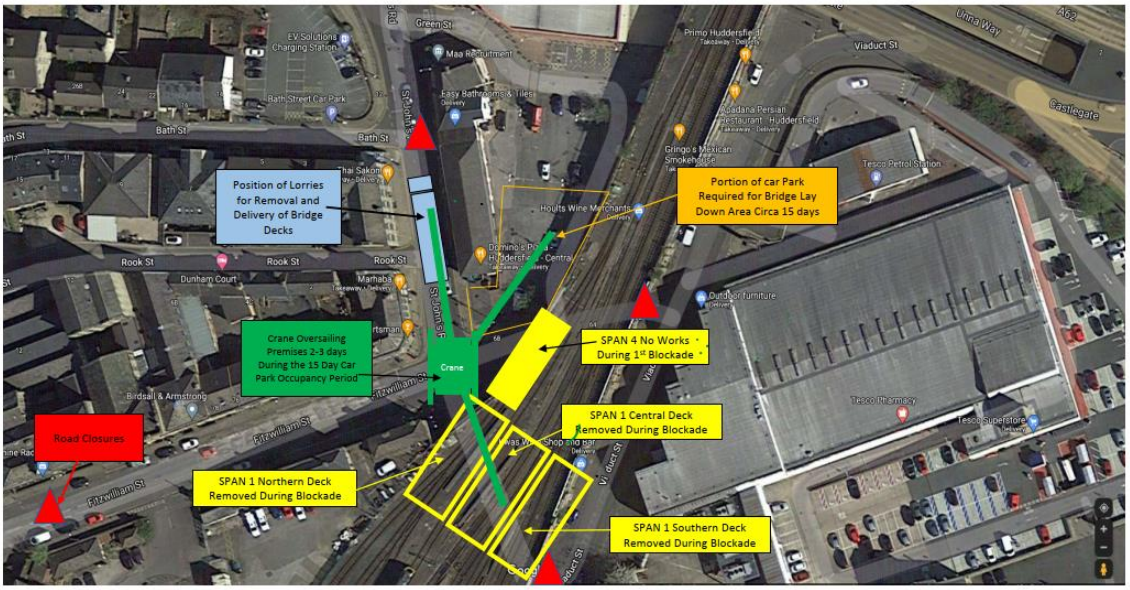


Duration of the Works

4.8.6 The additional compound for construction is required for preparation works before Blockade 1 and as noted in Figure 4-17 below.

Figure 4-17: Overview of Construction Works Blockade 1 Easter 2024

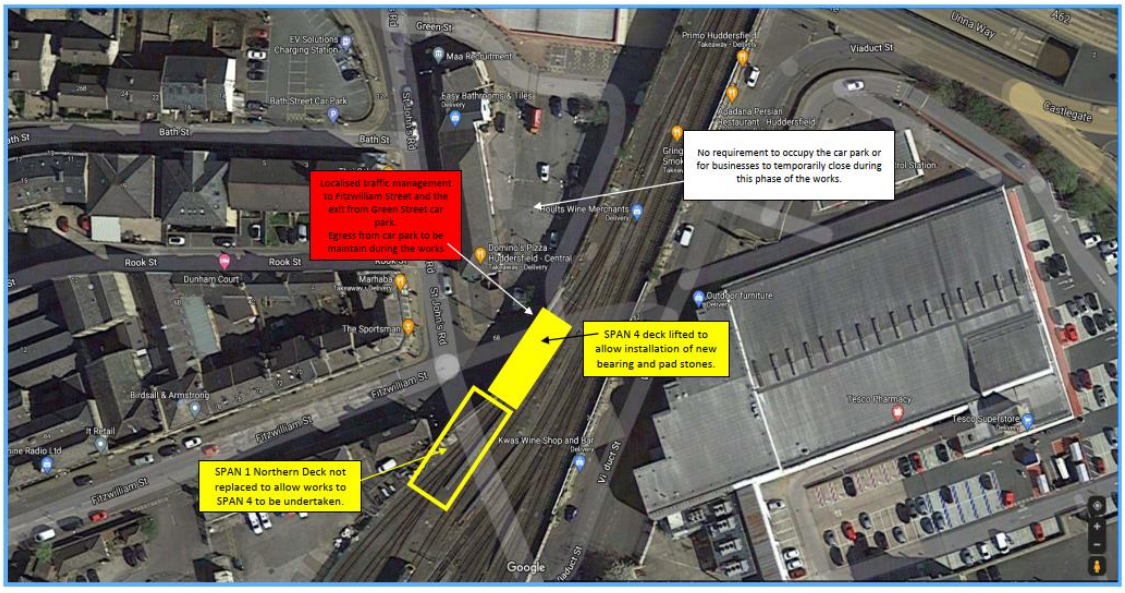
During 1st Blockade Easter 2024 (1of3)



4.8.7 Between blockades, the refurbishment of Fitzwilliam Street will progress. This will require the closure of the road for the back propping of the deck, and to ensure the safe containment of grit blast material, noxious dust, particles and paint. However, exit from the Castlegate Retail Park will be maintained from Green Street onto Fitzwilliam Street. Suitable diversions will be put in place for vehicles, cycles and pedestrians. See Figure 4-18 below

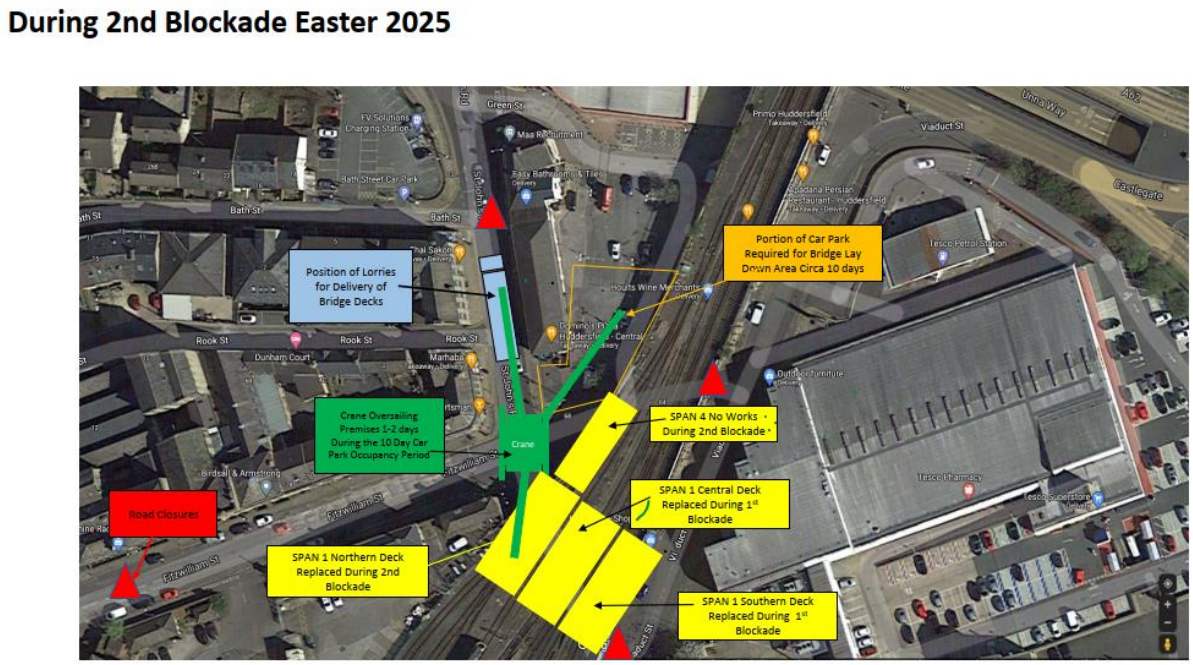
Figure 4-18: Overview of Construction Works between Blockades

Between 1st & 2nd Blockades April 2024 – April 2025



4.8.8 The additional land for construction is also required for preparation works ahead of Blockade 2 and for approximately 10 days during the blockade. See Figure 4-19 below.

Figure 4-19: Overview of Construction Works Blockade 2 (Easter 2025)



4.8.9 Without the land and compound at Castlegate Retail Park the removal and replacement of John William Street Bridge (3 spans) would not be reasonably practicable. The works could not be undertaken from the southern side of John Williams Street Bridge, adjacent to Tesco, as there is already a crane removing Span 1 as shown at Figure 4-19.

4.8.10 The replacement of the spans is key to allow the new track alignment for the remodelling of Huddersfield Station as detailed in the Engineering and Design Proof of Evidence of Graham Thomas (ref' NR/PoE/GT/2.2).

4.9 Mitigations to compound and construction land use:

4.9.1 I believe that the construction land identified has been reduced to the minimum required for the safe and efficient delivery of the Scheme. Between the blockades the land is returned to its original use. A reconfiguration of the access allows the site to operate normally for as long as is reasonably practicable.

4.9.2 The use of the Huddersfield Station main compound to support these works reduces the construction footprint only to that necessary to directly deliver the work. Welfare, parking storage, materials storage and handling etc will all take

place within the strategic HD1 compound and away from the Castlefield Retail Park.

4.10 Impact on Local Businesses, Tenants and Occupiers

4.10.1 The premises will only be closed on a temporary basis when the cranes are over sailing the premises and, for safety reasons, it is not reasonable for them to remain open.

4.10.2 Outside of these times, access will be maintained to both the Castlegate Retail Park, Dominos, Cubico, and R&D Yorkshire Ltd, and these businesses will remain open.

4.10.3 In order to install the OLE portals bracketry is to be fixed to the side of the viaduct – generally at pier location. Either a small access scaffold aligned to the pier or a Mobile Elevated Working Platform is envisaged for this work. Choice of approach is flexible as is the timing of the works (work conducted at night) and will be agreed with any affected party.

4.10.4 Erection of the portal frame will take place from the rail side, but access is required to the bracketry for the pinned portal connection – this element of the work would take place over night.

4.11 Emerald Street Waste Facility (OBJ33 Kirklees Council)

4.11.1 The key elements to be constructed in the Emerald Street area are as follows:

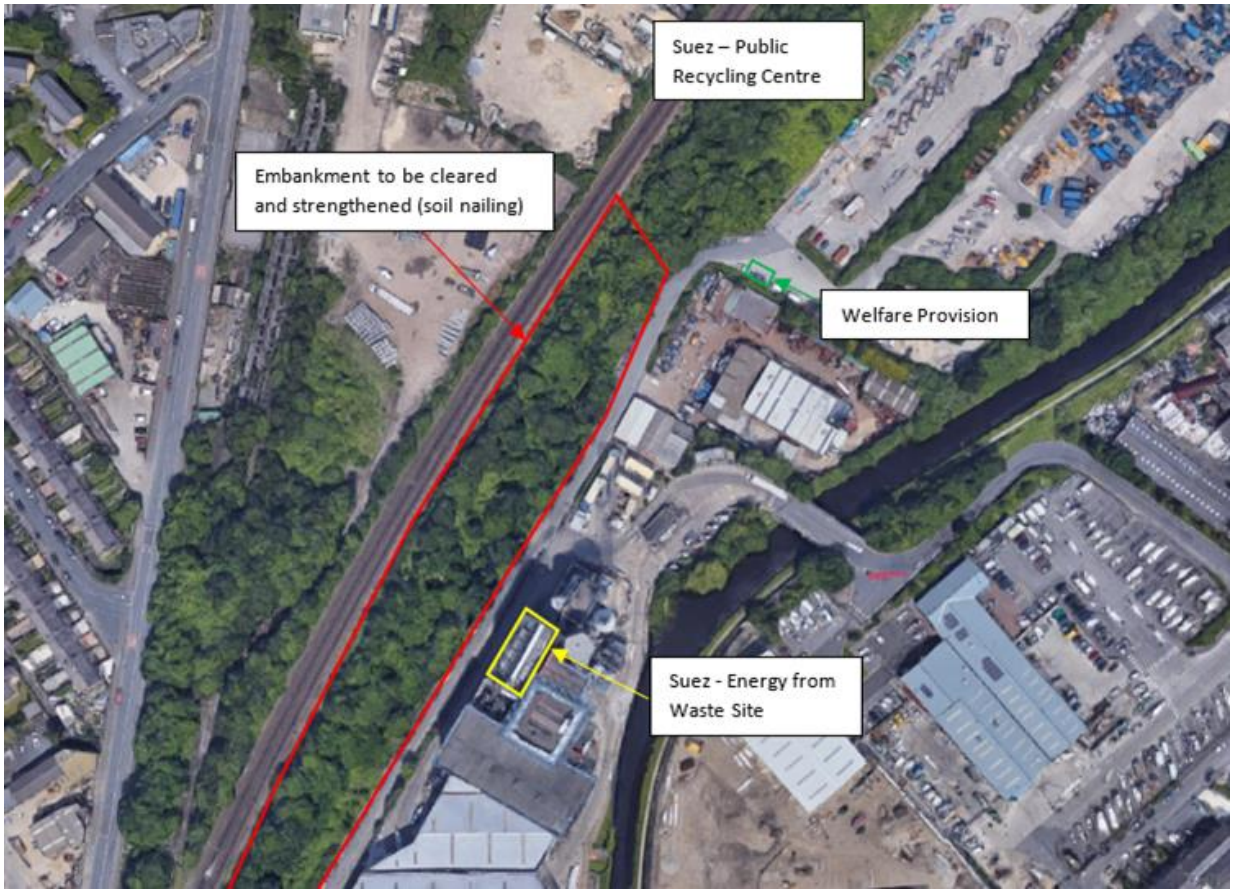
- Slope stabilisation of the south face of the existing rail embankment;
- Installation of two new fast lines to the upside of the rail corridor; and
- Realign existing tracks to accommodate new fast lines.

4.11.2 The key objector to the Scheme in this area is Kirklees Council (OBJ 33).

<u>Compound Details</u>

4.11.3 In order to support the efficient delivery of the works above, a small satellite compound for the provision of plant and equipment plus material storage and suitable welfare facilities will be provided on site; the main office and welfare provisions being provided at Huddersfield (see Section 4.2)

Figure 4-20: Emerald Street General Construction Arrangements



Provision of a site compound

4.11.4 The compound at Emerald Street will include the following as shown in Figure 4-20 (above)

- Access for delivery of materials to the worksite will be facilitated with traffic management and undertaken outside of Emerald Street Waste Facility's normal operational hours;
- Working area to be fully secured and plant, equipment and materials to be stored here;
- A welfare unit for breaks, preparing hot food and drinks and toilet facilities. This is to be located beyond the Emerald Street Waste Facility's secure gates and kept locked when not in use;
- Parking in the area is to be limited and on street parking is available nearby; and
- Central office and welfare provision at Huddersfield (see Section 4.2).

Suitable alternatives considered

4.11.5 Compound setup is to be kept to a minimum here to allow for emergency access along Emerald Street, with welfare and office provisions made elsewhere (see Figure 4-20 above). This proposal removes the need to impose lane closures during the working day and negatively affect business operations and traffic in the area.

Duration of Works

4.11.6 The works at Emerald Street will be contained within a small, fenced working area that will move along the embankment as the job progresses. Current construction programme states that the works will commence in April 2024 and will complete in August 2024.

Impact on Local Businesses, Tenants and Occupiers

4.11.7 Implementing the planned works during night-time shifts removes the need to impose lane closures along Emerald Street and put in place daily traffic management to control the flow of vehicles along this route. Working during non-operational hours 17:00-05:00 and always maintaining emergency access along Emerald Street, will not detrimentally affect public use of the recycling/waste centre, adjacent business operations or general access.

4.11.8 The nearby Energy from Waste (EfW) Plant utilises two large fans to condense coolant vapour, used in the incineration process, back into liquid form before recirculating. The performance of this cooling procedure is negatively affected by two main components; increases in ambient temperature and airborne dust (explained in a meeting with Suez representatives).

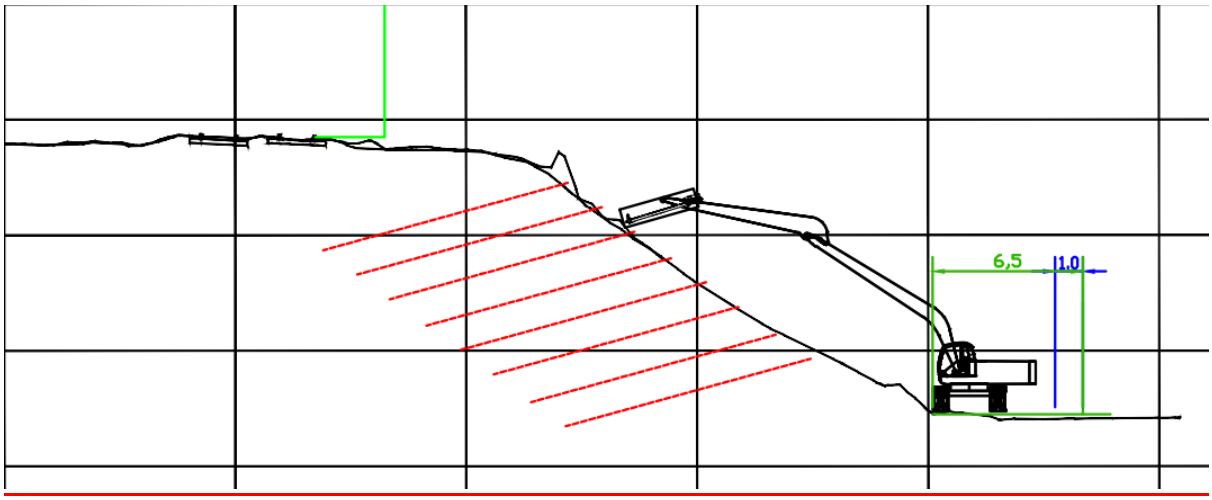
4.11.9 The Alliance's method of grout-flush soil nailing, where ground conditions permit, vastly reduces dust generation and the provision of a containment tent over the work area traps any dust that is generated and prevents it from entering the surrounding environment. For measures in respect of monitoring dust from the construction activity, please refer to the Environment PoE by Mr Jim Pearson (NR/PoE/JP/8.2).

4.11.10 De-vegetation shall be carried out along the rail embankment to create safe access for construction plant and personnel and allow the soil nailing activities to commence without obstruction. It is planned that these works will be done in winter months to minimise the subsequent dust generation (as the area will likely be wetter, cooler and leaves will have fallen), and this would be out with bird nesting season. Figure 4-21 indicates the proposed working arrangements for the nailing activity.

4.11.11 Traffic management will be in place at the nearby junctions with Hillhouse and this will serve to accommodate safe site deliveries during the designated site hours. Parking at site will be limited to operational plant and machinery only, with welfare provisions located at a lay-by within the recycling centre to prevent site staff from venturing towards the open highway

4.11.12 I understand that there is on-going negotiation with Kirklees Council and the operator Suez and that commitments have been made based on the construction methodology and mitigation measures identified above. On the basis of the evidence above, it is my expert opinion that the impacts on the site will be minimized

Figure 4-21: Cross section of proposed soil nailing activity



5. ROUTE SECTION 2: HILLHOUSE AND FARTOWN

5.1.1 There are no objections in this route section that I address in this PoE.

6. ROUTE SECTION 3: DEIGHTON AND BRADLEY:

6.1.1 The key elements to be constructed in the Deighton corridor are:

- Retaining walls adjacent to the 'Buy It Direct' warehouses; and
- Vehicle restraint systems and railway security fencing adjacent to the VW garage.

6.1.2 The objectors to the Scheme who raise matters that require address in this route section are:

- Reed Smith (WPC REIT Stretch and tenant Buy It Direct) **(OBJ 10)**; and
- Bramall Properties **(OBJ 9)**

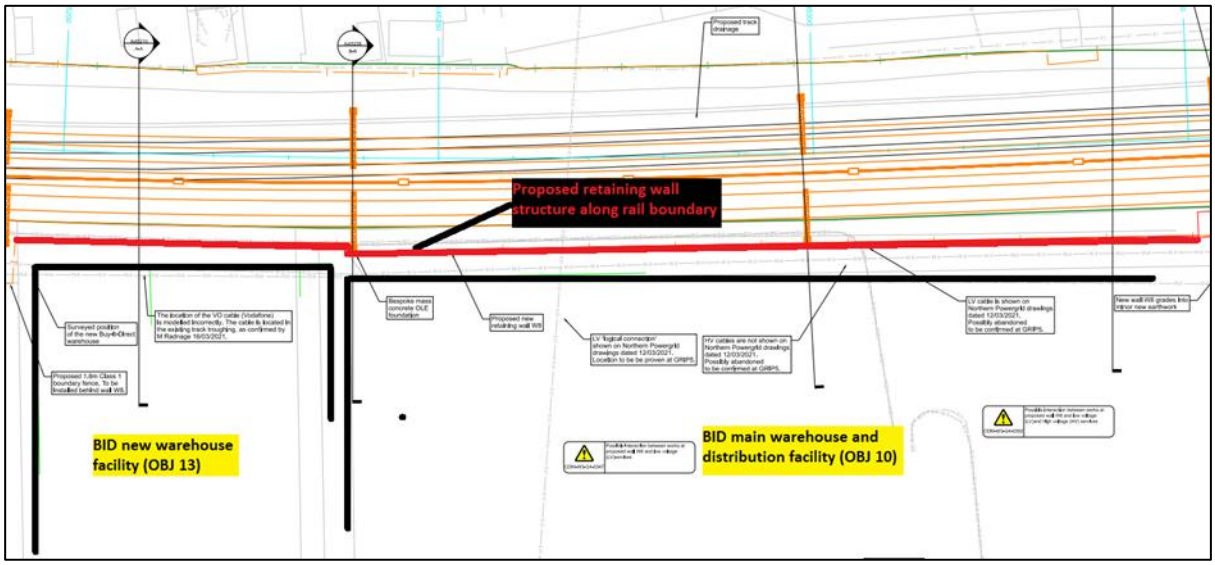
Reed Smith (WPC REIT Stretch and tenant Buy It Direct) (OBJ 10)

6.1.3 It is necessary to occupy an area of land to the North West elevation of the Buy It Direct (BID) warehouse facility, to enable construction of a retaining wall that supports the proposed fast lines. The works are planned to be undertaken in mid-2024, working from the rail side to minimise disruption to the emergency access, security, and maintenance at the warehouse.

6.1.4 To allow construction of the retaining wall which will run along the north west elevation of the two BID warehouse units adjacent to the railway (shown in Figure 6-1), it will be required to install a temporary fence line to secure the railway and BID property and assets. The proposed fence line is to be 2.4m high palisade fencing as current rail boundary fencing. The fence line will segregate works taking place adjacent to the track for the safety of the worksite and will allow BID operations at the warehouse to continue unimpeded by the construction works.

6.1.5 During discussions with BID, it was stated that the fire and emergency route will always need to be available for staff, with additional access to this elevation of the buildings for security patrols and maintenance. The fence line will allow all these activities to be undertaken as they do presently, albeit with a slightly narrowed width of walkway during the construction period. However, this still maintains use of the emergency accesses from the warehouse.

Figure 6-1: New Retaining wall running along the length of the BID North West elevation



6.1.6 The fences are proposed to be set up to allow construction works to be undertaken from the rail side, leaving a 1200mm walkway along the new warehouse building (shown in Figure 6-2) and 2m walkway along the main distribution warehouse (shown in Figure 6-3)

Figure 6-2: Temporary fence line along the new BID warehouse

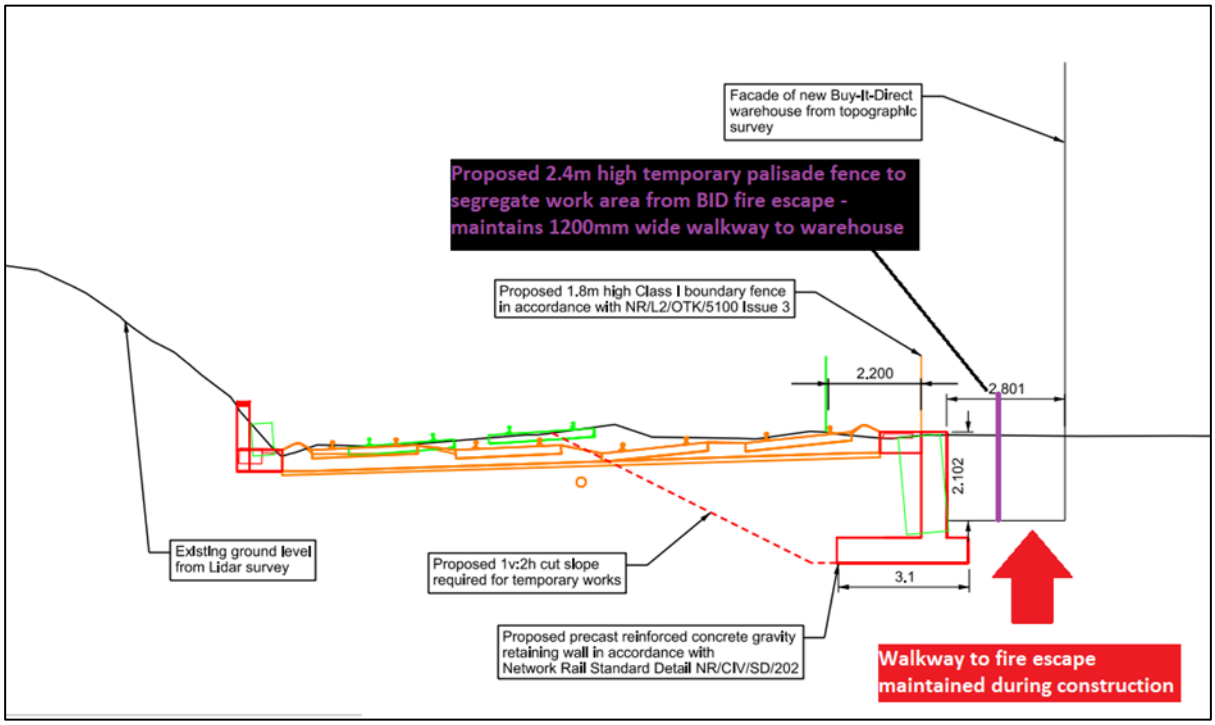
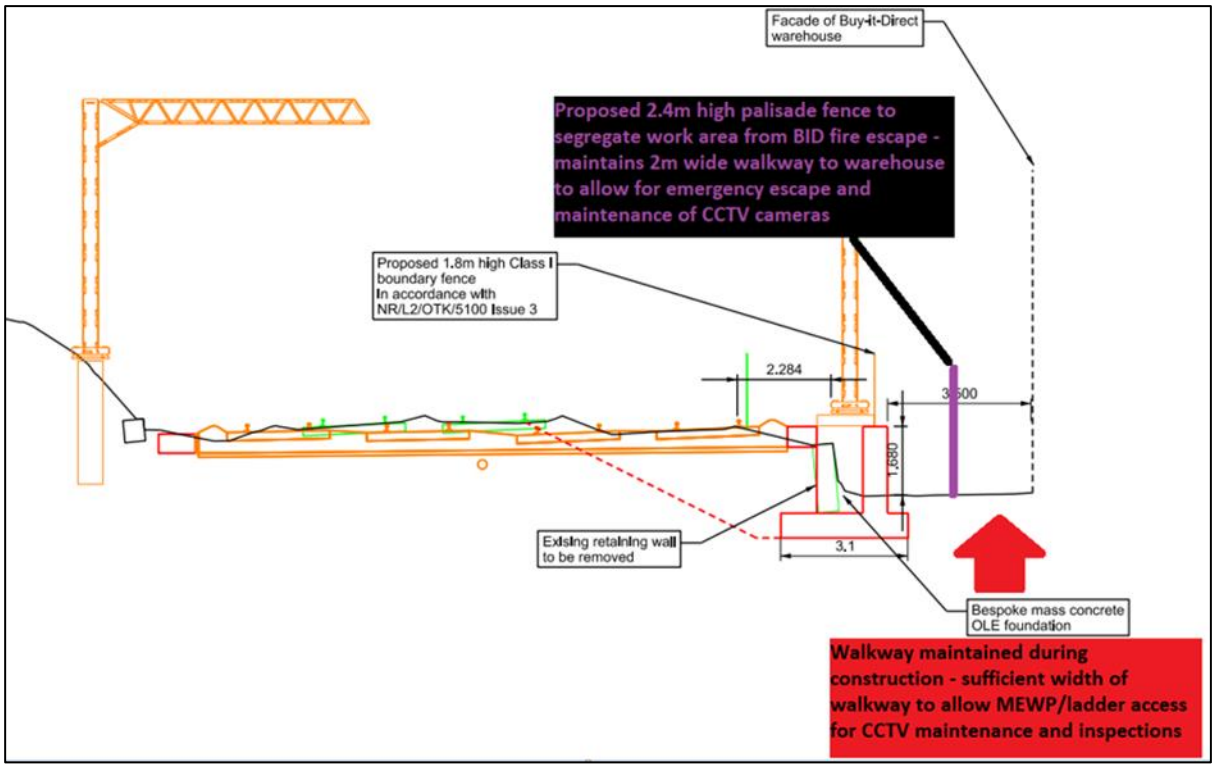


Figure 6-3: Temporary fence line along the BID main distribution warehouse



6.1.7 The temporary fence will be palisade, set at a height of 2.4m above ground, to secure the BID property and segregate the worksite (typical palisade fence shown in Figure 6-4).

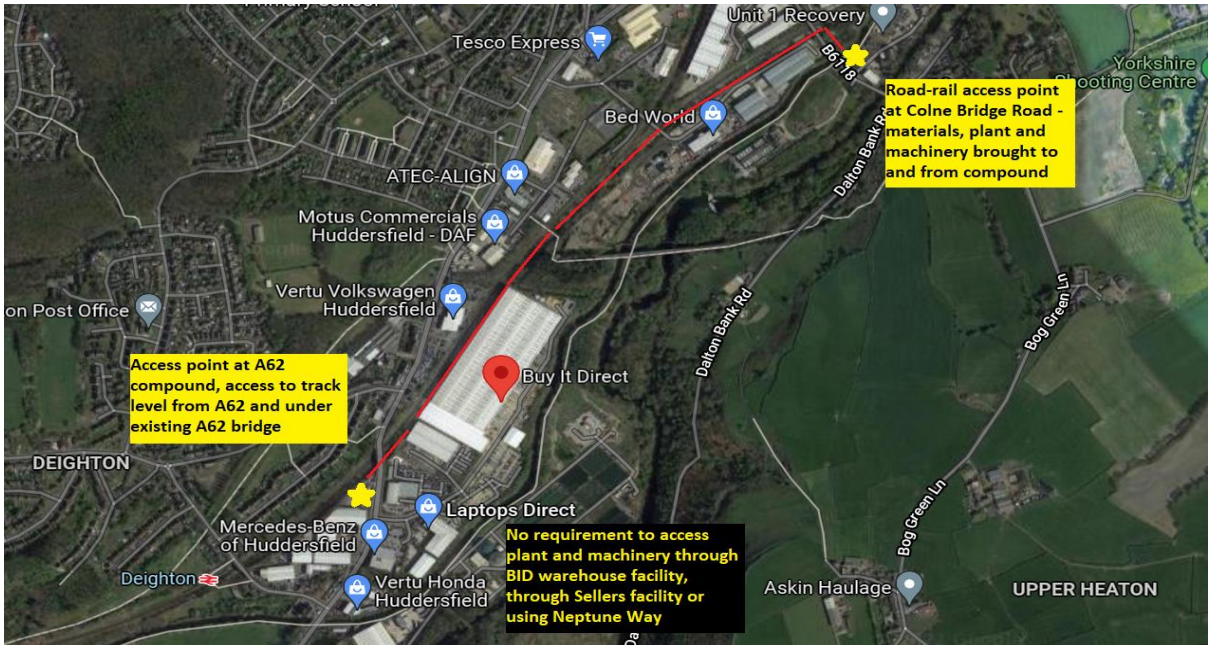
Figure 6-4: Typical 2.4m high palisade fence to be used as the temporary fence line

6.1.8 Following the construction works, the permanent fence line will be installed on top of the installed retaining wall structure (typical wall-mounted palisade shown in Figure 6-5) and the temporary worksite fence will be removed, giving increased distance between the BID buildings and the new rail boundary

Figure 6-5: Typical wall mounted palisade fence as permanent design

6.1.9 During construction works, labour, materials, plant and machinery will access the worksite from either the existing access point at Colne Bridge Road or through the construction worksite that will be established at the A62-Leeds Road bridge (ref to Figure 6-6). This means there is no requirement to access through the BID loading area, with limited construction traffic along Neptune Way.

Figure 6-6: Access to the construction worksite



Bramall Properties (OBJ 9)

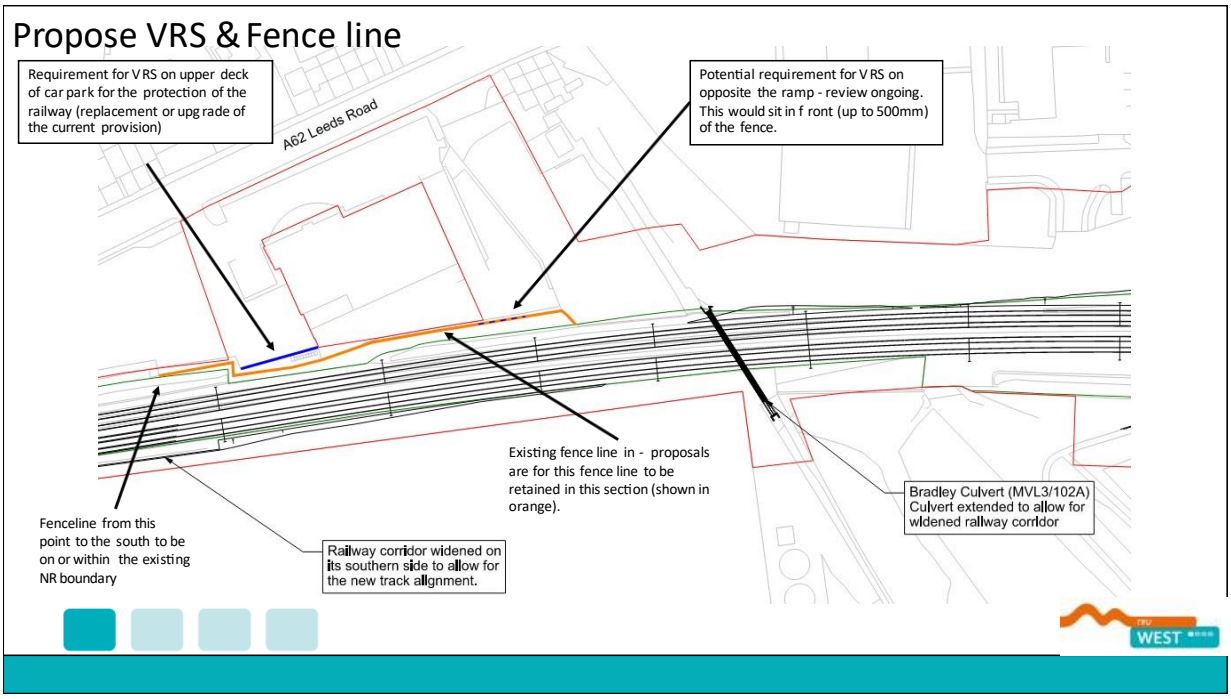
6.1.10 It is necessary to access across areas of Bramall Properties car dealership known as Vertu Volkswagen Huddersfield to facilitate the installation of a Vehicle Restraint System (VRS) and upgrade the current Network Rail boundary fencings ref' Figure 6-7

6.1.11 For safety and security reasons concerning both the operational electrified railway and the day-to-day business of car dealership it is necessary to install a modern substantive VRS and upgraded the boundary fencing.

6.1.12 In order to prevent accidental or malicious vehicle incursion onto the infrastructure, the section of VRS needs to be installed along a section of the high-level car parking area and potentially opposite the bottom of the access ramp adjacent to the railway infrastructure.

6.1.13 Upgraded boundary fencing is required to enhance security of the electrified railway.

Figure 6-7: Proposed VRS and Fence Line



6.1.14 It is necessary to access over the property for following reason:

- During installation of the VRS and fencing it is necessary to occupy areas of the high-level car park and lower section access route adjacent to the railway infrastructure.

6.1.15 Six months' advance notice shall be given to Bramall Properties before the works commence.

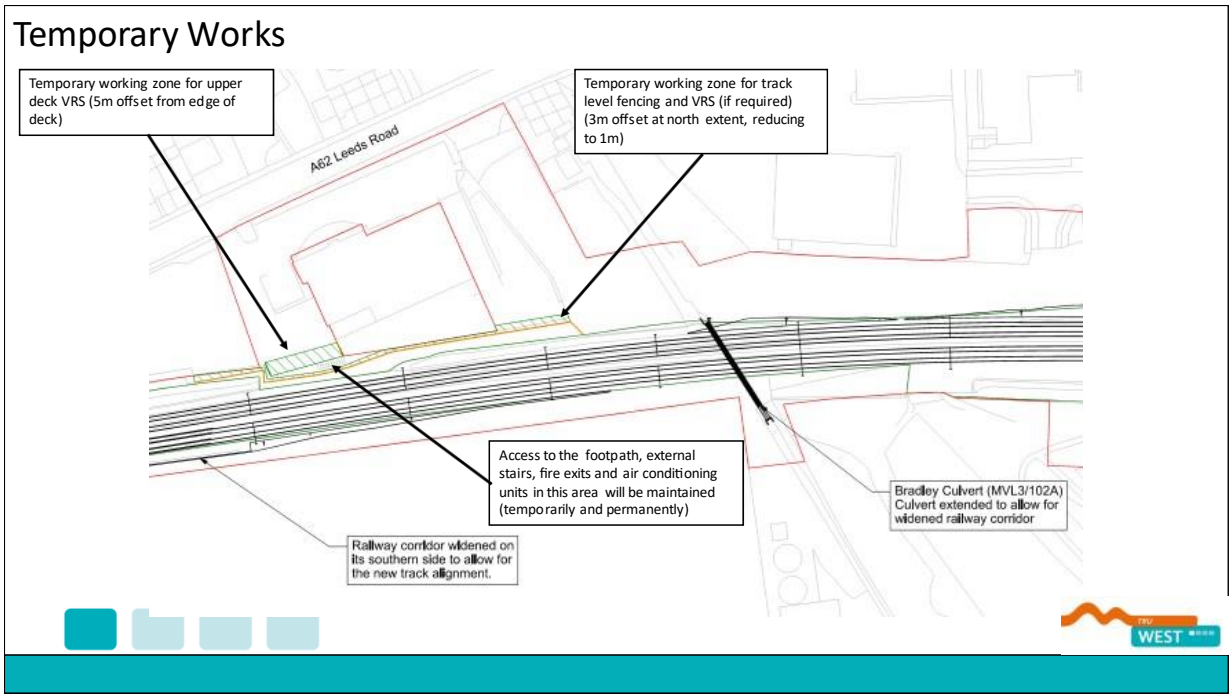
6.1.16 Also, reasonable endeavours will be used to schedule the VRS works so as to avoid any busy periods. This is on the basis that Bramall Properties provide details of such busy periods at least six months prior to the commencement of the works.

6.1.17 During the installation of the works, the following shall be implemented:

- Reasonable endeavours will be employed to manage the VRS works, and fence works to ensure that access is maintained to the air conditioning units, fire exits, footpath and the external staircase at all times throughout the construction period;
- Temporary working areas will be securely fenced and lit at all times throughout the undertaking of these works and CCTV will be present at the site until the new permanent security fencing is installed as part of the works (ref Figure 6-8 below);
- In undertaking the VRS works, no construction vehicles larger than a 7-tonne lorry will be brought to site;

- In undertaking the VRS works and the fence works, there will be no need to use the top or lower deck areas of the Garage other than for access purposes for the construction of the VRS works and fence Works; and
- Access to the basement level of the car dealership will be maintained at all times throughout the VRS and fencing works, and the turning circle will remain accessible for vehicles from the lower deck to the basement level of the car dealership.

Figure 6-8: Temporary Works



6.1.18 I understand commitments have been made to Bramall Properties **(OBJ 9)** based on the evidence above.

7. ROUTE SECTION 4: COLNE BRIDGE AND BATTYEFORD

7.1 Key elements

7.1.1 The key elements to be constructed in the Colne Bridge Road Area are:

- Reconstruction of the Colne Bridge Rd overbridge (MVL3/107); and
- Reconstruction of the Huddersfield Broad Canal underbridge (MVL3/108S).

7.1.2 The objectors to the Scheme who raise matters that require address in this route section are:

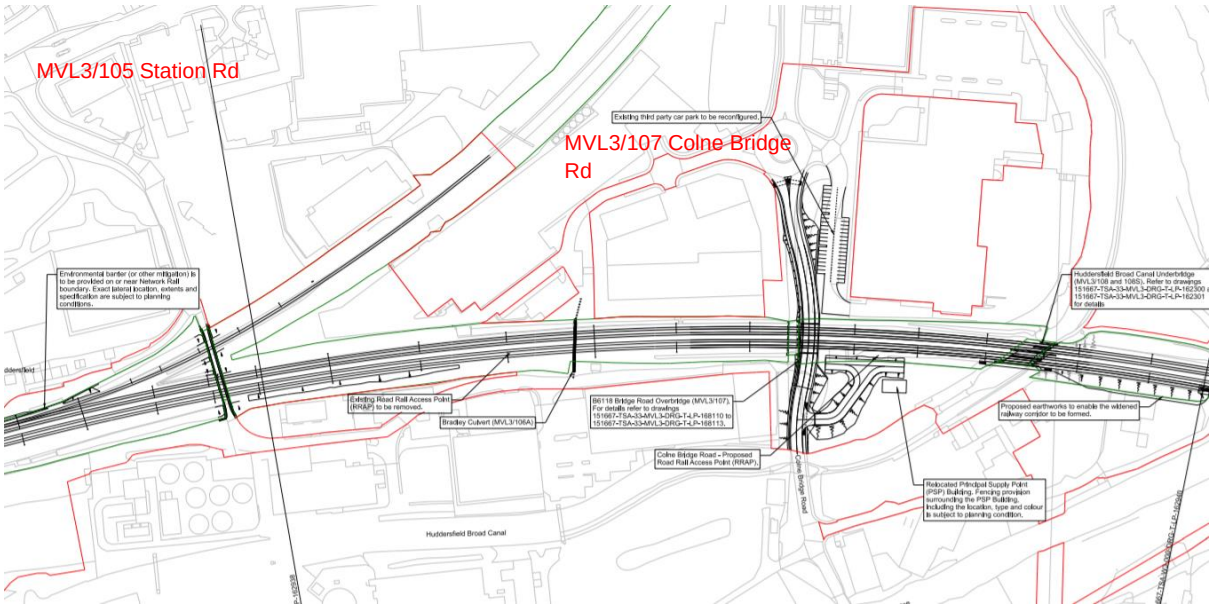
- **OBJ 11** Frank Marshall Estates
- **OBJ 27** Charities Property Fund

- **OBJ 35** Canal & Rivers Trust
- **OBJ 37** Mamas and Papas

7.2 Approach to Evidence in Route Section 4

7.2.1 Due to the interrelationship of the objectors listed in 7.1.2 and the works, I have approached the presentation of my evidence by geographical location in relation to the bridge structures, Figure 7-3 refers.

Figure 7-1: Colne Bridge Road – General Environment



7.3 Land Affected by the Reconstruction of MVL3/107 Colne Bridge Rd

7.3.1 As evidenced by the PoE Engineering and Design by Mr Graham Thomas (ref' NR/PoE/GT/2.2), the current MVL3/107 span at Colne Bridge Road requires the construction of a new bridge. The new bridge will be constructed offline to the east of the existing bridge (as shown in Figure 7-1 and Figure 7-2). Mr Chris Williams in his Highway Design PoE (NR/PoE/CW/11.2) explains and deals with the issues of alignment and cycling provision as part of the design.

7.3.2 Construction will require land in the permanent case and wider land in the temporary case. My evidence will focus on the temporary land required to construct the Colne Road Bridge.

7.3.3 The construction sequence is envisaged to be as follows:

- Relocation of the current Bradley Principal Supply Point (PSP);
- Realignment of Mamas and Papas access;
- Realignment of Bradley Access Point;

- Excavation for new abutment bases;
- Construction of new abutments;
- Infilling of redundant arches;
- Backfilling and construction of new reinforced soil walls;
- Construction of new bridge deck;
- Diversion of utilities into new bridge deck;
- Realignment of road alignment; and
- Demolition of existing deck.

7.3.4 Multiple parcels of land are required to facilitate these works. Below I detail the extent, reasoning and approximate envisaged duration for this land requirement.

Figure 7-2: Colne Bridge Road General Arrangement

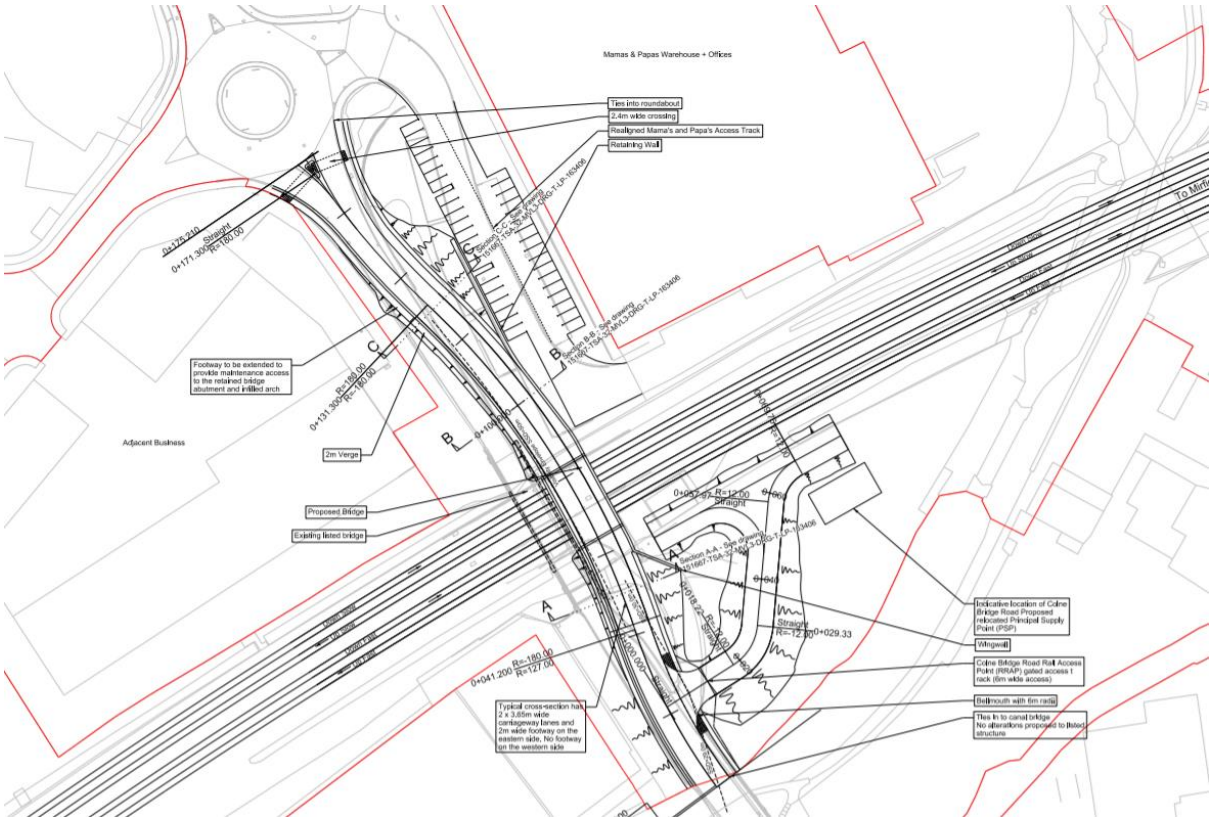
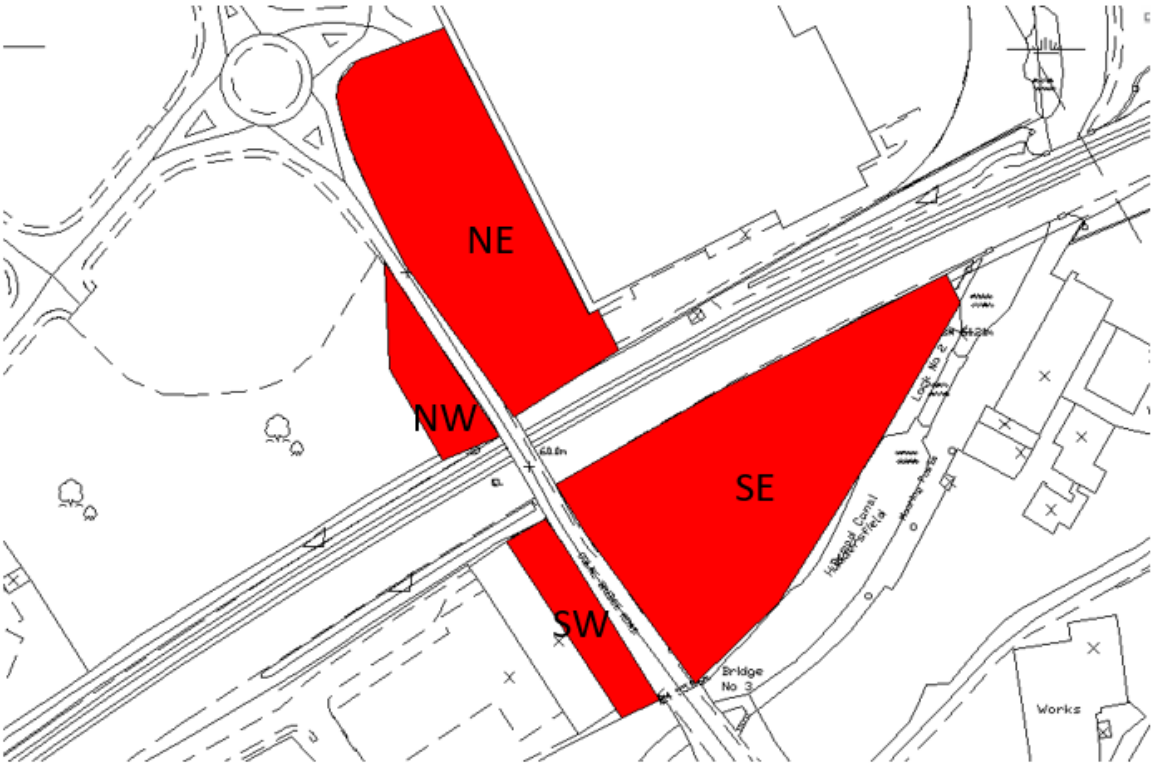


Figure 7-3: Colne Bridge Road – Affected Land Areas



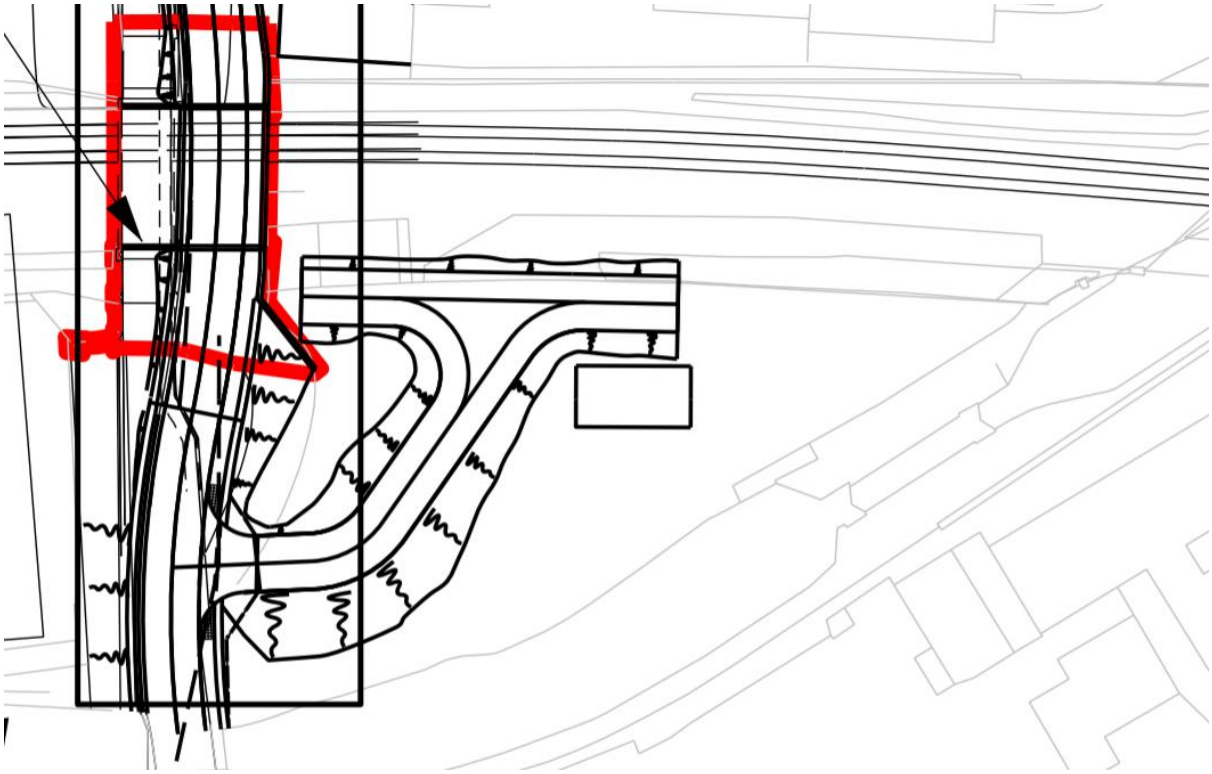
Temporary Land to the South East bounded by the Huddersfield Broad Canal & Railway

7.3.5 To reconstruct Colne Bridge Road (MVL3/107), temporary land is required to the south east of Railway Bridge bounded by the railway, canal and the existing Colne Bridge Road. This land will be required for both the reconstruction of Colne Bridge Road and Huddersfield Broad Canal Bridge (MVL3/108S), located to the east of Colne Bridge Road as well as an associated utility diversion of a Yorkshire Water asset

7.3.6 In this section, I will discuss the requirements for MVL3/107 only. The requirements for MVL3/108S will be discussed separately.

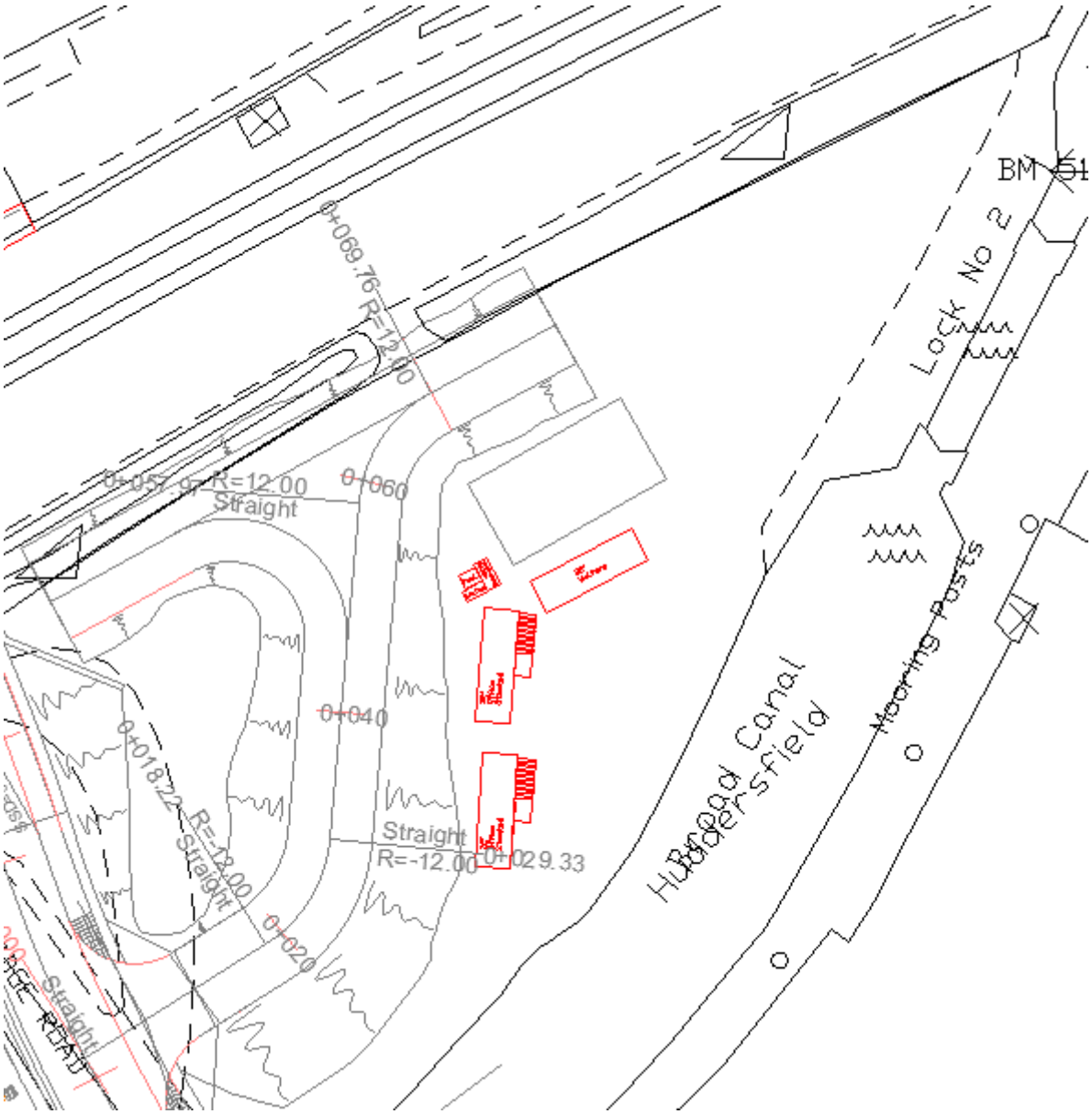
7.3.7 Figure 7-4 shows the proposed works to realign the access track and relocate the PSP. This permanent requirement occupies the majority of the plot.

Figure 7-4: Colne Bridge Road – Reconfiguration for Principal Supply Point



7.3.8 To construct the intervention, laydown and materials handling areas as close as is practical to the worksite are required, this area will also be used for suitable welfare facilities for the workforce. The only land in which this is practical for this intervention is to the south of the PSP as shown in Figure 7-5 below.

Figure 7-5: Welfare Location for Colne Bridge Rd



7.3.9 Figure 7-5 shows indicative portable cabins which may be double stacked if extra accommodation is required. This allows for the area to the east to be used for dry materials storage and access to MVL3/108S for the utility diversion and structure works.

7.3.10 Welfare provision will provide:

- Site offices for the project;
- Access for delivery of materials to the worksite;
- Secure storage and laydown for materials and equipment; and

- Area for the handling and distribution of materials and plan/equipment to the worksites on the other side of the road/railway.
- Welfare for the workforce including facilities to prepare hot food;
- Washing facilities;
- Parking for light construction vehicles (cars, light goods vehicles, minibus etc) in between the cabins and the canal;

7.3.11 The works to construct the access ramp and the PSP will at times impede access for the Canal & River Trust ("the Trust") to access the canal lock and bywash from the west. Through engagement with the Trust, I believe this access is required mainly for the renewal/replacement of the canal lock with large time intervals between visits.

7.3.12 I understand the access is required for more frequent inspections of the canal lock. The Alliance will not be able to facilitate access for canal lock replacement or significant vehicular access during the period of construction works due to the constrained site and the amount of work the Alliance needs to complete. However, in agreement and negotiation with the Trust at a reasonable notice period, subject to the construction programme, the Alliance will facilitate inspection access for the Trust to inspect the canal lock. This will need to be supervised and agreed by a representative from the Alliance to ensure the safety of the Trust's staff and/or contractors.

7.3.13 The anticipated duration of the works in this area is approximately from May 2023 to June 2024 including the works to MVL3/108S.

7.4 Land to the South West of Railway Bridge bounded by the railway, RYOBI and Colne Bridge Rd

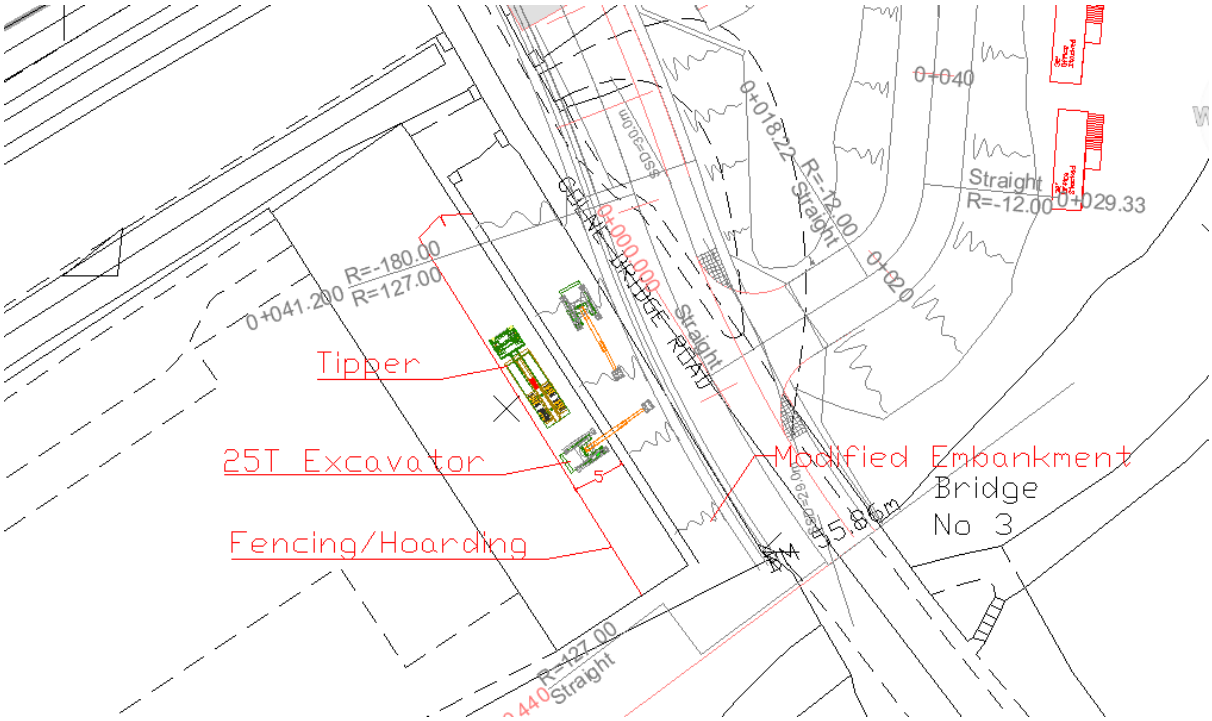
7.4.1 Temporary possession of land to the south west is required to allow utility diversions and boundary treatments on the land behind the kerb line between the railway and the access road. Aside for access of construction vehicles and for closures during works to raise the parapets on Station Road Bridge (MVL3/105), we do not propose to restrict access along this access route.

7.4.2 Access and temporary possession of land will be required from the Charities Trust Fund, to facilitate the boundary treatments and earthworks to support the new Colne Bridge Road alignment.

7.4.3 Earth moving equipment such as 8 wheel tipper wagons, dumpers and excavators will be required at the toe of the slope for this work, as shown in the Figure 7-6 below.

7.4.4 We have included provision for 5m from the current boundary. This will allow for a 25T excavator moving material to/from an 8 wheel tipper and a temporary hoarding to secure the site boundary.

Figure 7-6: Colne Bridge Road – Earthworks for the south embankment



7.4.5 During engagement with Charities Property Fund, they have indicated they need access for a drawbar articulated HGV. As shown below in Figure 7-7, this type of vehicle will not be able to access during periods in which we are completing the earthworks in this area. However, subject to the frequency of these vehicles, we can suspend works and move the fencing to allow the vehicle to access/egress. The largest vehicle which can access and exit whilst maintaining a 5 metre construction working area is a standard articulated HGV. This has been confirmed by tracking as shown in Figure 7-8.

Figure 7-7 Drawbar Articulated HGV Tracking

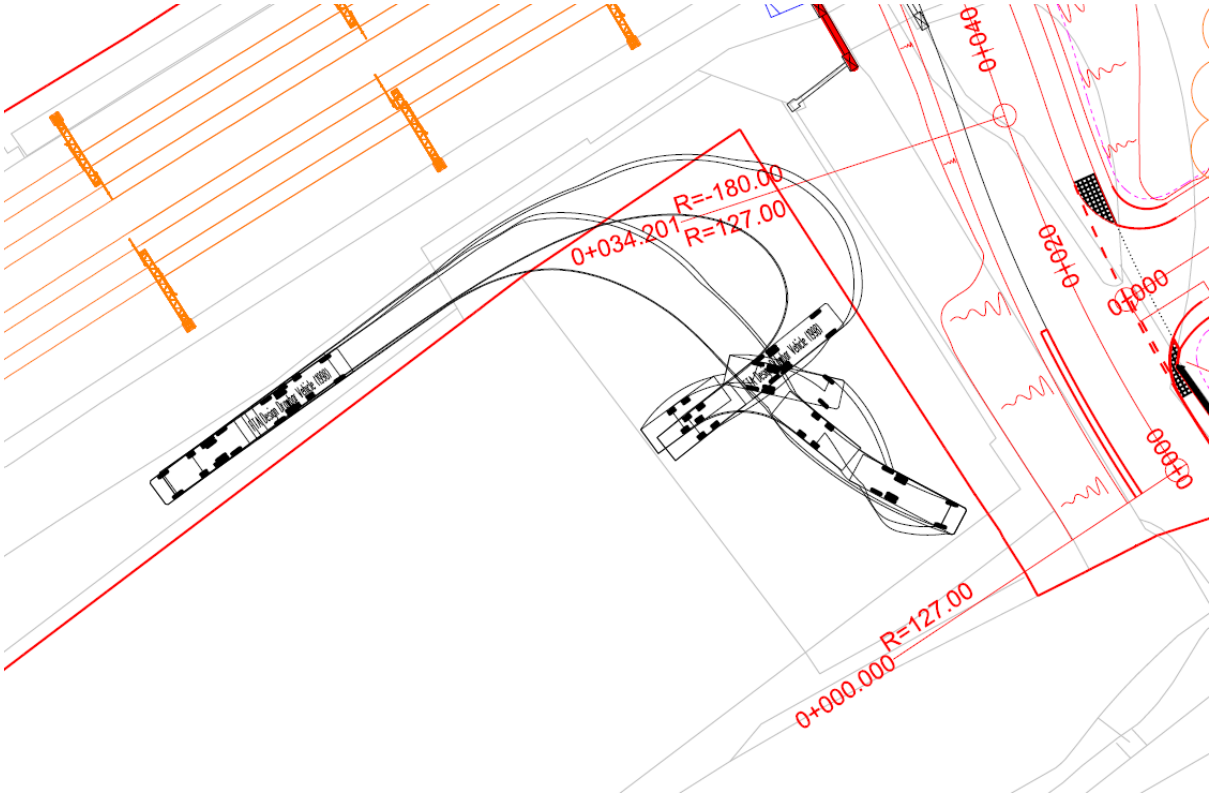
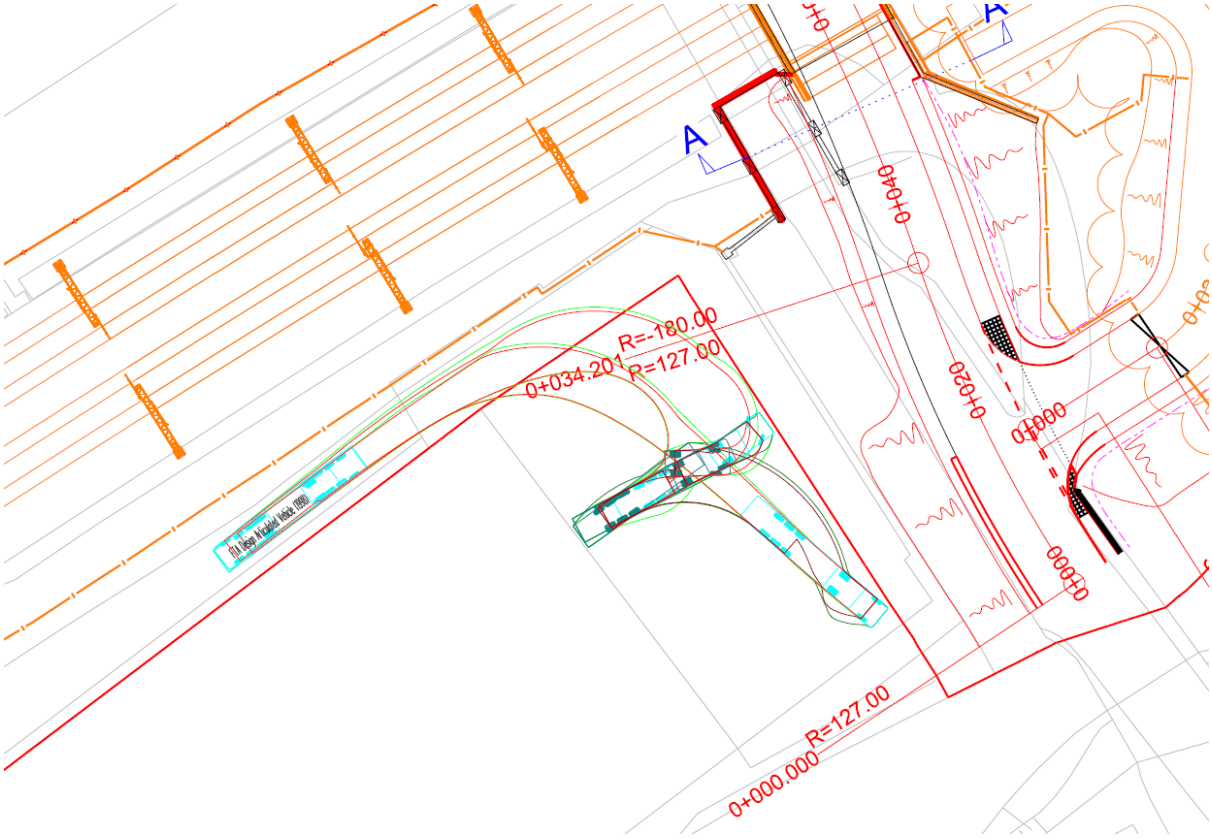


Figure 7-8 Articulated HGV Tracking



7.4.6 The works to the embankment impacting on the Charities Property Fund land are provisionally taking place from October 2023 to January 2024. It is unlikely the whole area will be required for the entirety of the work, but this will depend on design detail and hence construction methodology.

7.4.7 The plot of land will also be affected by parapet raising works to Station Road MVL3/105. To facilitate these works, the road will need to be closed during night times. Access for emergency services to the south of the railway will be maintained when required but other access will be restricted. This is provisionally programmed for 1 month in May/June 2023.

7.5 Land to the North West of Railway Bridge bounded by the railway, Frank Marshall and Colne Bridge Rd

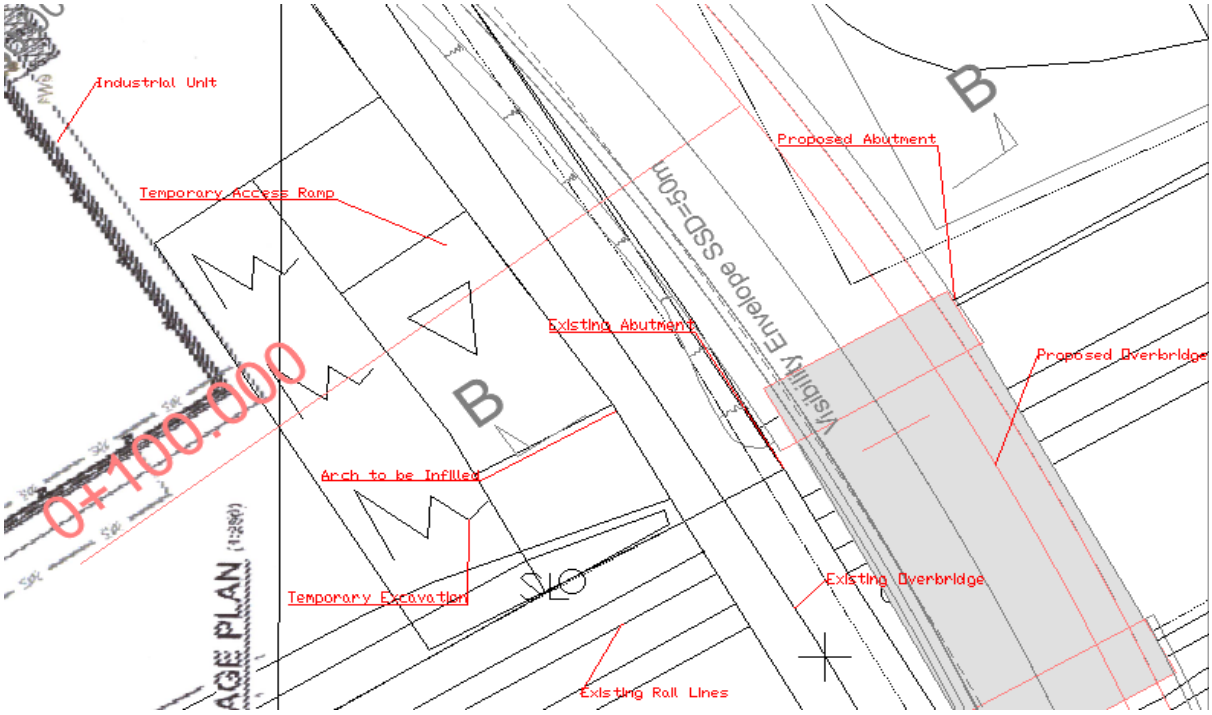
7.5.1 To the north of railway, the existing redundant arch of the railway overbridge requires infilling. In order to achieve this, a level working platform for an excavator and scaffold to construct a blockwork wall or formwork is required.

7.5.2 Temporary land is required from Frank Marshall Estates **(OBJ 11)** to gain access to the western side of the northern arch which is to be infilled. This will require temporary excavation and temporary earthworks retention to ensure the stability of the adjacent building.

7.5.3 The extent of the earthworks/temporary support will depend on the ground conditions and temporary work designs which are yet to be developed. These will be designed and constructed so as not to interfere with the operation of the building. An indicative layout is shown below in Figure 7-9 (below).

7.5.4 A previous concern of Frank Marshall Estates **(OBJ 11)** was the access to the industrial estate, however whilst undertaking works access to the Industrial Estate is maintained.

Figure 7-9 Temporary Excavation to the North West of Colne Bridge Rd Overbridge



7.5.5 The works to infill the northern redundant span of Colne Bridge Road are provisionally programmed for July/August 2023.

7.6 Land to the North East of Railway Bridge bounded by the railway, Mamas and Papas and Colne Bridge Rd

7.6.1 To construct the north east wingwall for the new road alignment, the access road to the warehouse operated by Mamas and Papas **(OBJ 37)** requires realignment to maintain access to the rear service yard during the works and after Colne Road Bridge has been realigned.

7.6.2 The realignment will allow the establishment of a construction compound to deliver the permanent works and space for materials management. There will be minimal welfare provision to the north of the railway, with the compound to the south east providing the main welfare provision.

7.6.3 The realignment works will take place at the beginning of the construction programme to facilitate the other works.

7.6.4 The construction will be phased as described below.

<u>Phase 1</u>

7.6.5 Initially the parking spaces to the south will be moved closer to the building, as shown in Figure 7-10 below, so the access track can be moved and reduced

to a single lane to facilitate the construction compound, shown in Figure 7-11. This will be controlled by temporary traffic management measures.

Figure 7-10 Mamas and Papas Parking Space Realignment

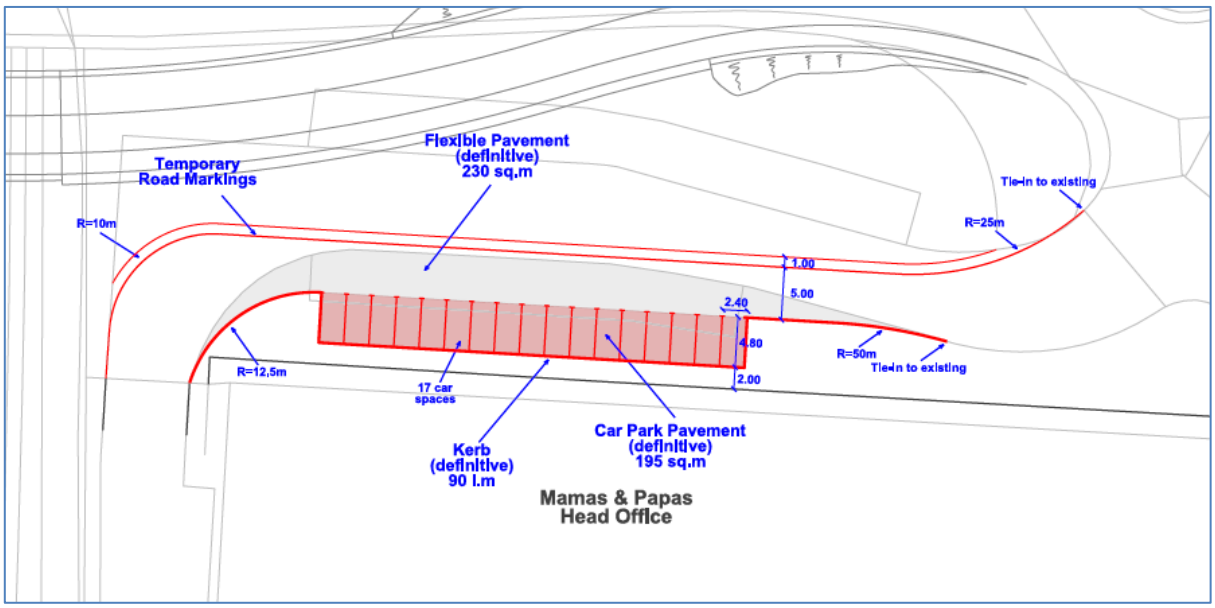
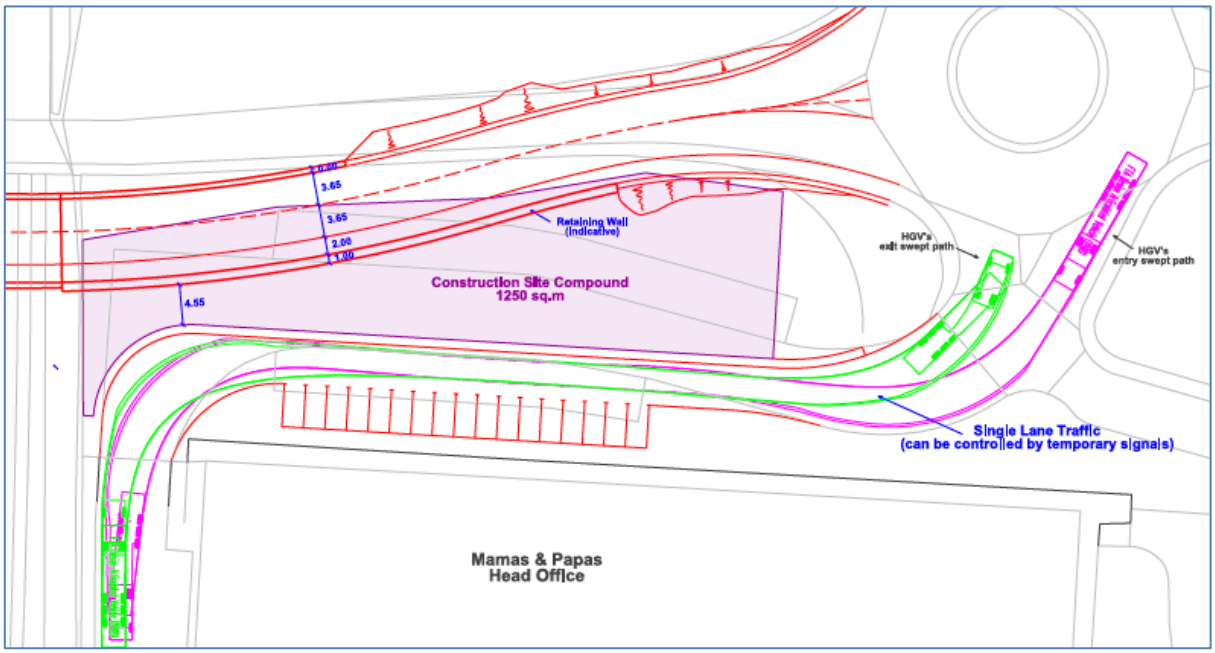


Figure 7-11 Temporary Case for Mamas and Papas Access

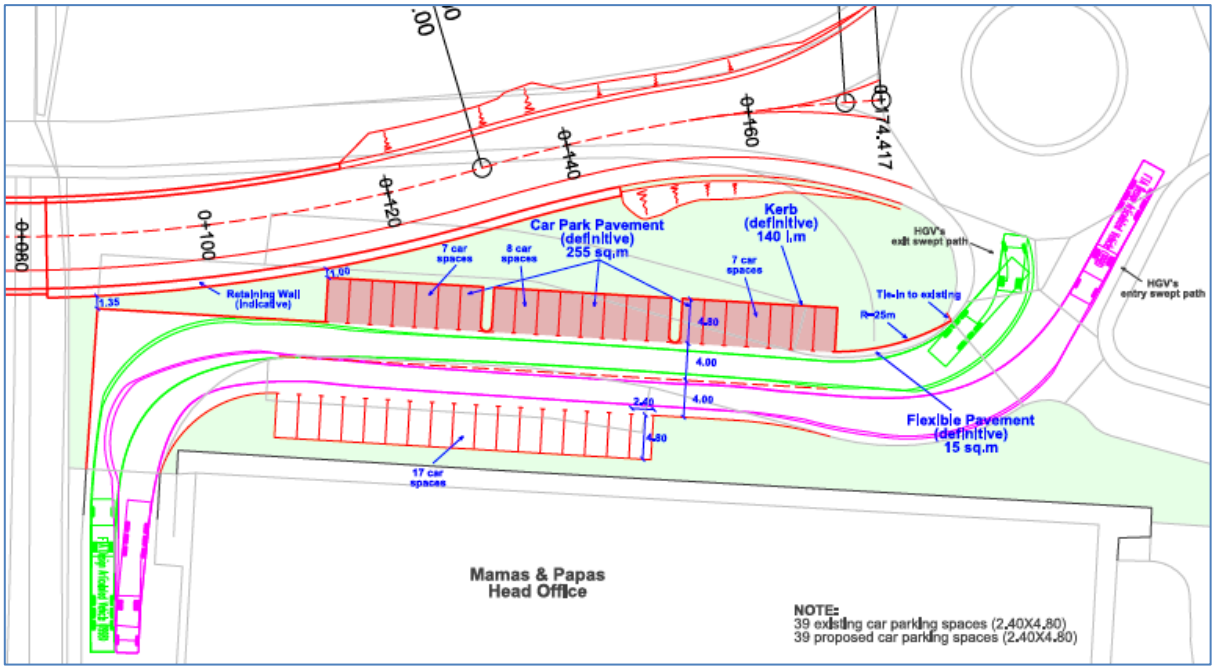


7.6.6 Construction traffic will also be required to gain access to the compound although this is not anticipated to affect Mamas and Papas' use of the access.

Phase 2

7.6.7 Following the construction work, once the new road is constructed, the western parking spaces will be reinstated and the land to the west will be returned to Mamas and Papas allowing bidirectional traffic.

Figure 7-12: Permanent Case for Mamas and Papas Access



7.7 Land Affected by the Reconstruction of MVL3/108S

7.7.1 As evidenced in the Engineering and Design Proof of Evidence of Mr. Graham Thomas (NR/PoE/GT/2.2), the southern span of MVL3/108S is understrength and unsuitable for carrying the new fast lines. A new structure(s) is therefore required to carry these fast lines. This will require the demolition of the current spans and replacement with new decks. Currently a third party (Yorkshire Water) asset runs through the bridge and so this must be diverted prior to the demolition.

7.7.2 The construction sequence is envisaged to be as follows:

- Construction of a new pipe supports south of the existing spans;
- Lift in new pipe bridge deck;
- Diversion of Yorkshire Water asset into new pipe bridge;
- Demolition of existing bridge spans;
- Break down abutments and construct new cill beams;
- Lift in new bridge decks; and

- Lay track over new bridge decks.

7.7.3 Temporary possession of land is required to facilitate these works. I will below detail the extent, reasoning and envisaged duration for this land requirement.

7.8 Land to the South West of Railway Bridge bounded by the railway, canal and Colne Bridge Rd

7.8.1 Similar to the usage for the reconstruction of bridge MVL3/107, the land to the south east of the railway bridge will be required for construction of the new canal span and separate pipe bridge. This land will facilitate a compound, access, permanent works, temporary works and materials management, as shown in Figure 7-5.

7.8.2 Due to the need to secure the worksite and the railway, we cannot facilitate unrestricted access for the Trust's to the western side of the canal lock. We will be able to facilitate access to the Trust under agreement and supervision by our site team for inspections, however, we will not be able to accommodate the Trust to undertake major scheduled maintenance or works during our temporary possession of the site e.g., renewal of Lock Gates.

7.8.3 We will require temporary possession of the site from May 2023 to June 2024 as noted above in the requirements to MVL3/107.

7.9 Land to the North West of Railway Bridge bounded by the railway, canal and Mamas and Papas A

7.9.1 The land to the north west of the railway bridge in Mamas and Papas loading bay and the embankment to the canal may be required to site a crane to facilitate the lifting of the pipe bridge, removal of the existing deck and lifting in of new bridge decks.

7.9.2 The works will be completed in two phases, as described below.

<u>Phase 1 – Installation of the new pipe bridge</u>

7.9.3 We anticipate that work will take place over three consecutive weekends requiring full loading bay closures during the rigging of the crane and the lifting works.

- First week: 1 weekend to rig the crane;
- Second week: 1 day (Saturday night likely) to install the pipe bridge; and
- Third week: 1 weekend to de rig the crane and demobilise from site.

7.9.4 There will be a gap of a period of months which is to be finalised subject to the utility diversion programme. This will be to complete the utility diversion into the pipe bridge to allow demolition of the existing deck. We will then remobilise

for the second visit during which we will demolish the existing deck, cut down the abutments, install new cill beams and install the new decks. This will require full loading bay closures during the rigging of the crane and the lifting works. Figure 7-13 below illustrates the current craneage plan.

7.9.5 We anticipate that work will take place over four weekends: (2 lots of 2 consecutive weekends).

- First week: 1 weekend to rig the crane; and
- Second week - 1 weekend to demolish the existing deck.

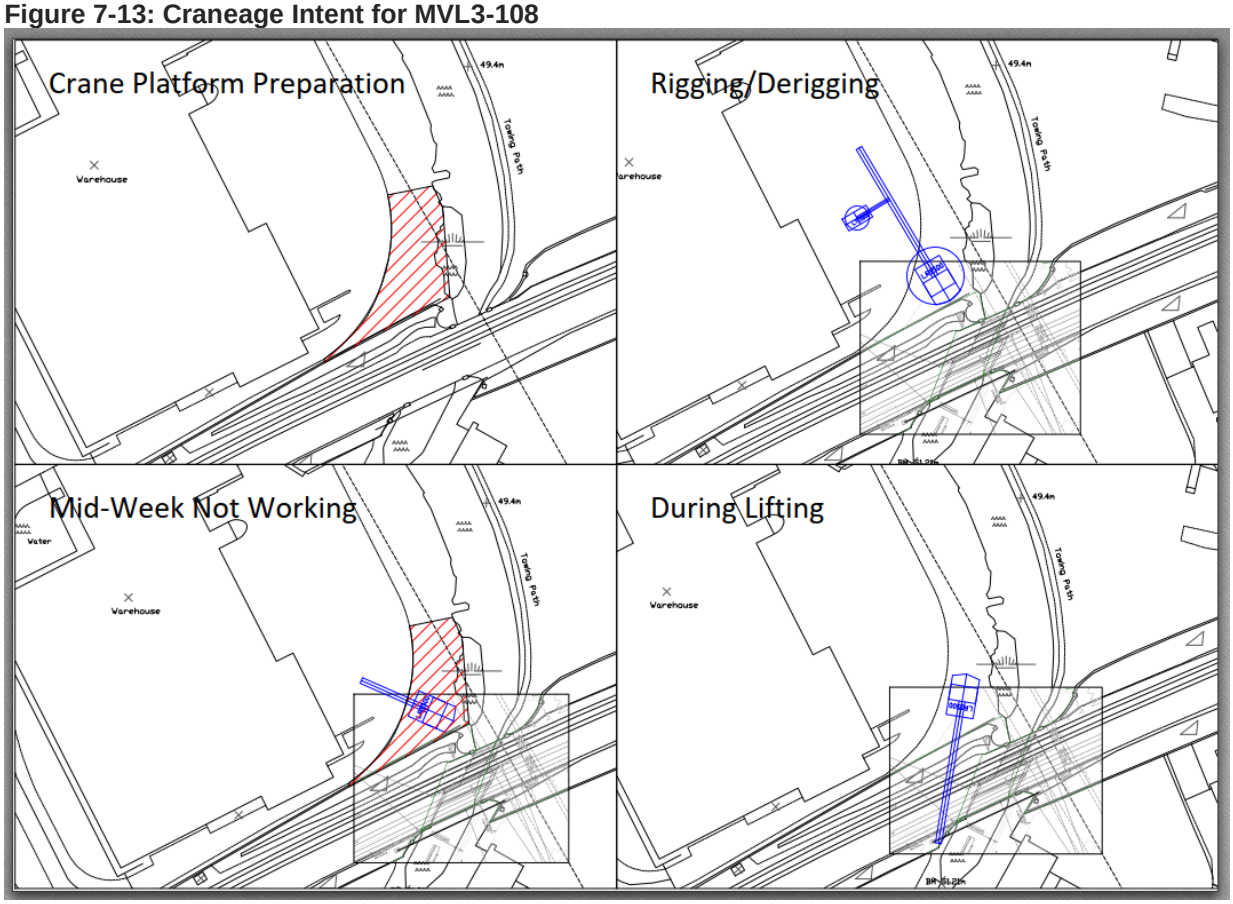
7.9.6 There will likely be a delay of a small number of weeks before the third weekend closure. This will allow us to prepare the abutments to accept the new cill beams and decks.

- Third week: 1 weekend to install the new cill beams and deck; and
- Fourth week: 1 weekend to de rig.

7.9.7 Outside the weekend closures of the loading bays, we will establish a site fence/hoarding along the line of the existing kerb line. This will ensure we do not impact on the operation of the business during the week while we prepare for the crane and construct the working platform. We will require access through the loading bays to the work site and will manage this locally with Mamas and Papas.

7.9.8 To ensure the crane platform and working area are restrained to within the kerbline and not affect the operation of the loading bays, we may be required (subject to temporary works design) to increase the level of the slope to the canal to create a level working area and so may require temporary earthworks structures.

Figure 7-13: Craneage Intent for MVL3-108



7.9.9 The works in this location are provisionally scheduled to start in summer 2023 for the first visit and to be completed by June 2024.

8. ROUTE SECTION 5: MIRFIELD AND LOWER HOPTON

8.1.1 Section 7.7 of the Statement of Case **(NR28)** provides a detailed overview of the construction works in Route Section 5.

8.1.2 The objectors to the Scheme who raise matters that require address in this route section are:

- **OBJ 24** Rosemary Elizabeth Carr
- **OBJ 26** Dr Reddy's Laboratories
- **OBJ 39** The British Bung Manufacturing Co Ltd

8.1.3 There have been three objections in relation to this section of Scheme. I have taken each objection in turn and addressed the need for the temporary land or rights to deliver the construction activities, as well as measures to be taken to minimise impacts on the objectors.

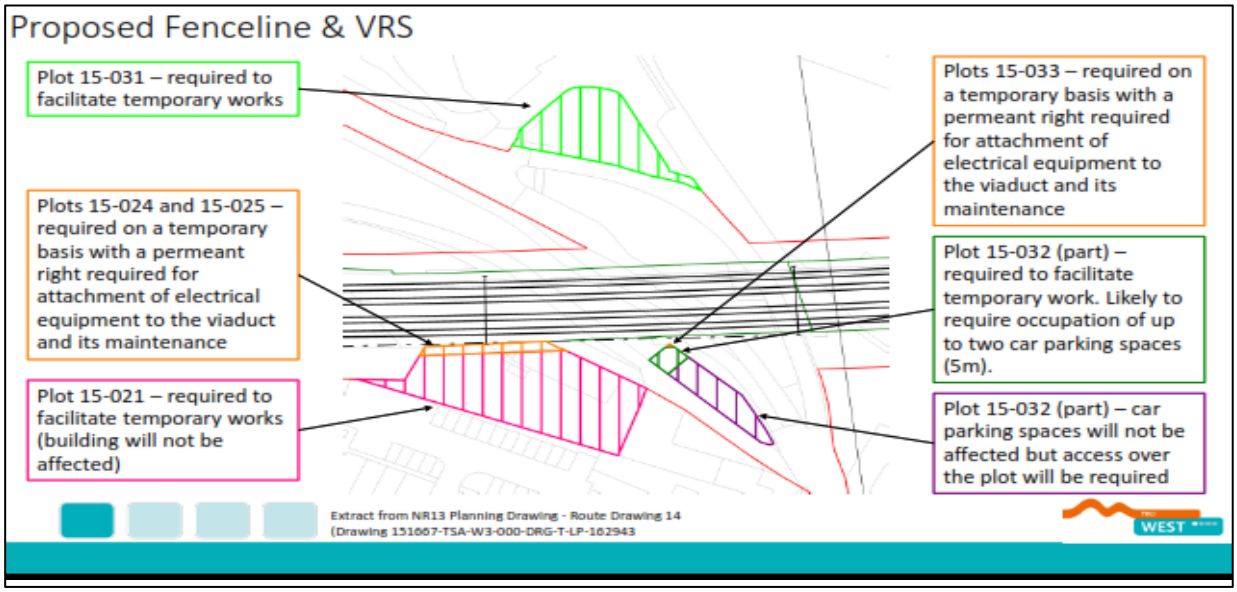
8.2 OBJ 24 Rosemary Elizabeth Carr

8.2.1 The objection from Rosemary Carr is in relation to access through Mirfield Viaduct and temporary use of land for construction activities. This is a key access point for construction to both undertake work to Mirfield Viaduct as well as access the railway via Calder View.

8.2.2 The works to Mirfield Viaduct involve the attachment of OLE which requires temporary road closures, as detailed below. I will not be addressing the objection in relation to Air Rights.

8.2.3 Temporary access is required at Plot 15-031 (shown hatched light green on the Plan below) for the purpose of use as a working site and access for construction in relation to Work No.14 which comprises works to the Mirfield Viaduct, as described above and in more detail in Section 7.7 of the SoC (NR 28). Without access to this plot the works would not be able to be undertaken on the Viaduct. I can confirm that the proposed area of Network Rail's temporary possession of Plot 15-031 would only temporarily impact on the operation of the southern extent of the proposed planning boundary of the proposed development. On the basis of my understanding of the proposed development, which appears to comprise proposals for the provisions of 9 car parking spaces that will serve the proposed new commercial unit(s). Accordingly, the impact of Network Rail's temporary possession of Plot 15-031 would be in my view appear to be limited to the temporary loss of these car parking spaces.

Figure 8-1: Overview of Plots for Objector 24 - Rosemary Carr



8.2.4 Impact on 8 residential properties at Chadwick Fold Lane (South of Mirfield viaduct). To deliver the works to Mirfield Viaduct Network Rail requires

temporary use of Plots 15-032 and 15-033 and acquisition of rights over Plot 15-033.

8.2.5 On the south side of Mirfield Viaduct, it is proposed that Network Rail will need to undertake some localised structural works to Mirfield Viaduct. These structural works to Mirfield Viaduct will be undertaken via the provision of a tower scaffold or a Mobile Elevating Work Platform (MEWP). This tower scaffold or MEWP would be located partly within Plot 15-032 (shown hatched dark green on plan) and partly within Plot 15-033 (Ref Figure 8-1 above and shown coloured orange on the Plan). The location of a tower scaffold or a MEWP within this part of Plot 15-032 and within Plot 15-033 would possibly temporarily impact during the period of the construction of the structural works to Mirfield Viaduct on the use of up to two of the car parking spaces (which are currently located within part of Plot 15-032 shown hatched dark green in Figure 8-1 above), that serve the residential properties.

8.2.6 To facilitate the construction of these structural works to Mirfield Viaduct, Network Rail will also still need temporary possession of the remainder of plot 15-032 (shown hatched purple in Figure 8-1 above) for the purposes of construction access. To deliver the works I am not anticipating having to restrict either vehicular or pedestrian access by the tenant occupiers of the adjacent 8 residential properties. I understand this part of Plot 15-032 as well as being used for parking by tenants, is also used by tenants as a means of emergency access/egress when access over Chadwick Fold Lane/Calder View is restricted or closed due to flooding.

8.2.7 I understand Network Rail has provided a commitment to maintain access for these tenants to that part of plot 15-032 shown hatched purple on the Plan at Figure 8-1 at all times during the period of Network Rail's temporary possession of this area of land.

8.2.8 With respect to timescales, the structural works to the south side of Mirfield Viaduct to be undertaken from Plots 15-032 and 15-033 are anticipated to take no longer than 12 months and would commence from approximately early 2024. However, I am unable to provide a definitive start date for the construction works to be undertaken from Plots 15-032 and 15-033 as this is very much dependant on the timing of when Network Rail is granted the Order

8.2.9 I understand that commitments have been offered in writing to the Objector and currently Network Rail are awaiting a response to that offer.

8.3 OBJ 39 The British Bung Manufacturing Co Ltd

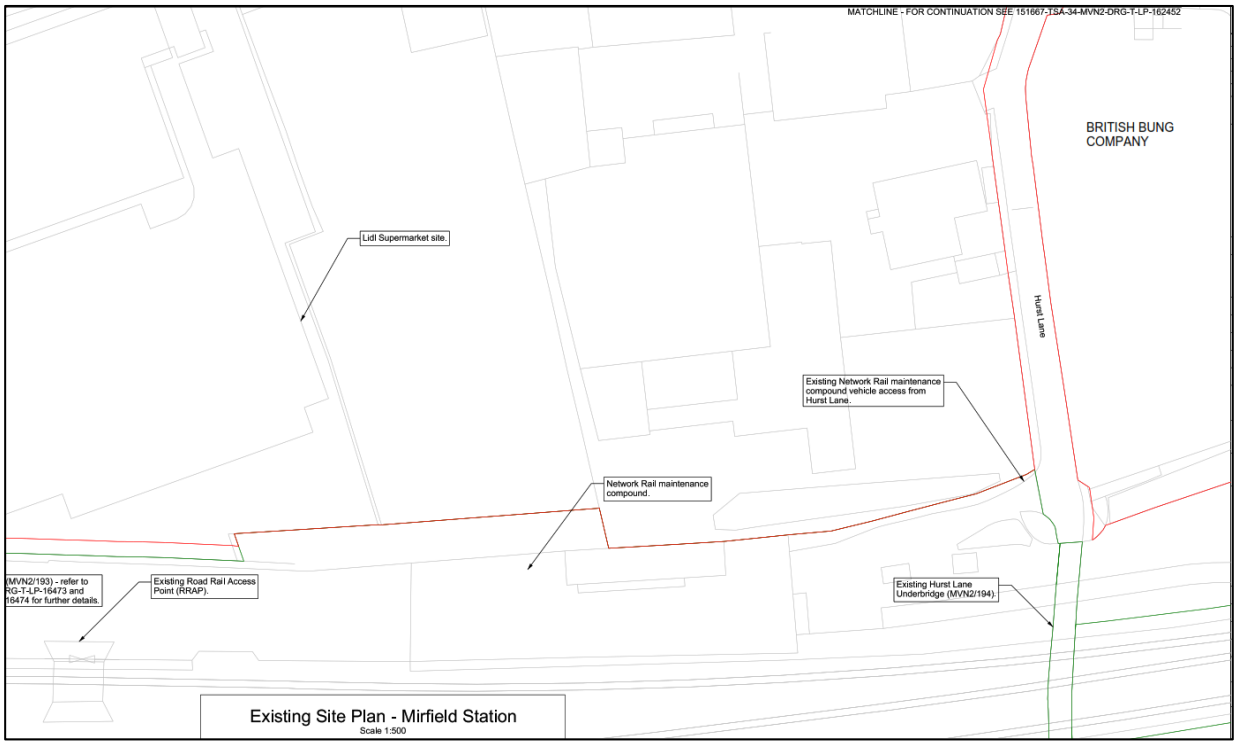
8.3.1 With regard to The British Bung Manufacturing Co Ltd.'s ("British Bung") objection, I will not be covering the permanent access rights. I will only

address the objection in relation to the temporary rights required for construction traffic.

8.3.2 To deliver the works the temporary use of land at Plot 16-064 is required for construction traffic to access the existing Network Rail depot via Hurst Lane. Temporary access is required over the full length of Hurst Lane. Traffic management measures will be utilised to allow unimpeded access for British Bung so far as reasonably practicable during the works. Traffic movements will be coordinated to further remove the risk of congestion on or along Hurst Lane. There is no intention to alter the alignment of either the entrance to British Bung facilities, the boundary fencing, flood alleviation measures or Hurst Lane itself as part of the works

8.3.3 This is a critical access point for the delivery of the construction as it is a RRAP which allows access to the railway. RRAPs are limited and therefore, all are critical to the efficient delivery of the Scheme. Figure 8-2 shows the location of British Bung & Hurst Lane. A letter of commitment has been provided to British Bung detailing the above.

Figure 8-2: Plan showing access to Network Rail Access Point Via Hurst Lane



8.4 OBJ 26 Dr Reddy's Laboratories

8.4.1 With regard to Dr Reddy's objection, I will not be addressing the objection in relation to any permanent rights which are required by Network Rail. I will limit

my evidence to the temporary rights required to construct the Scheme at this location.

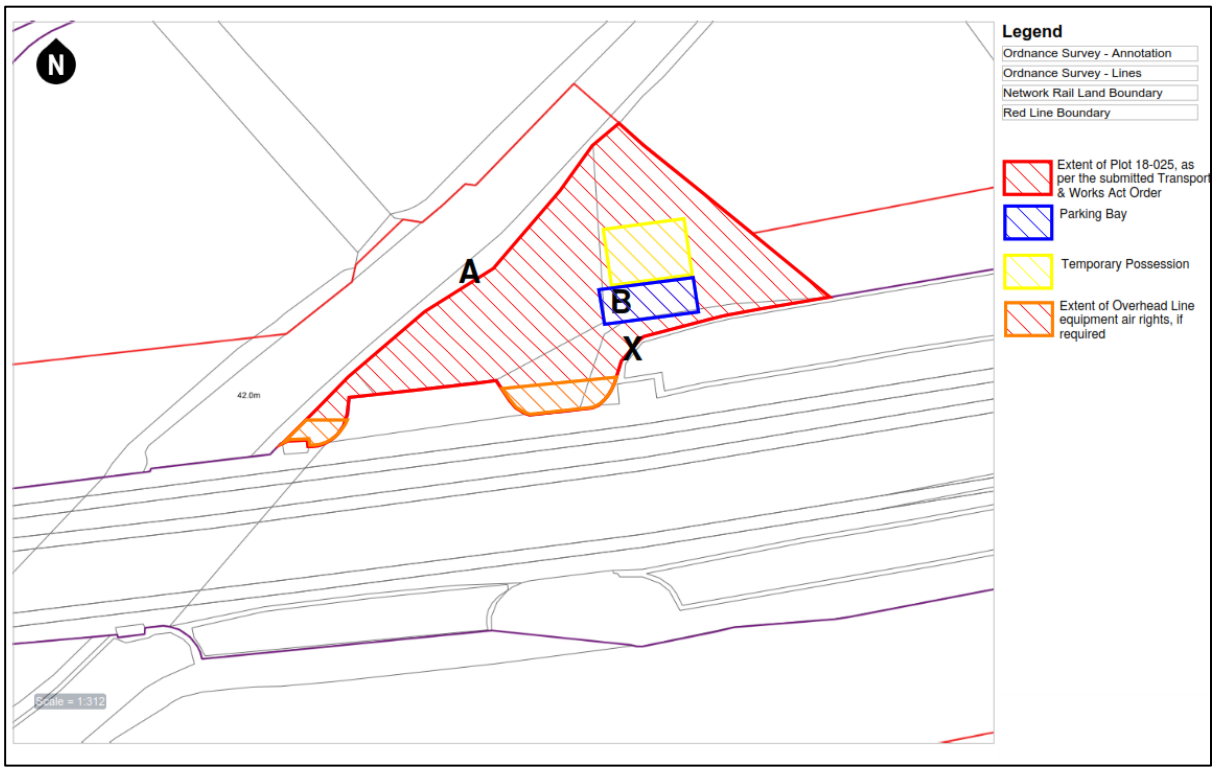
8.4.2 To construct the works in this area, temporary possession is required over plot 18-025 – please refer to Figure 8-3. This is to allow access to the railway and to undertake works on the railway line. Access will be for pedestrians only with the plot used as drop off and pick up point for the workforce.

8.4.3 Temporary possession of land is also required to construct a parking bay [shaded blue] Figure 8-3 to allow maintenance of the Scheme. Network Rail will take temporary possession of the area [shaded yellow] on the Plan – Figure 8-3 - to facilitate construction of the parking bay.

8.4.4 The construction of the parking bay will take approximately 2-3 weeks and Network Rail will engage with Dr Reddy's regarding the timing of the construction works.

8.4.5 I understand that an agreement has been provided to Dr Reddy's by the Alliance outlining the above. In my view the construction works at this location will have no impact on Dr Reddy's main site and limited impacts on the turning circle which in my view are manageable.

Figure 8-3: Plan showing areas of Temporary Possession for Construction



9. ROUTE SECTION 6: RAVENSTHORPE TO WESTTOWN

9.1.1 Section 7.8 of the SoC **(NR 28)** provides a detailed overview of the construction works in Route Section 6.

9.1.2 The key elements to be constructed in the Ravensthorpe area are as follows:

- Major utilities diversions (High Voltage Over Head and buried 33Kv route) plus High-Pressure Gas;
- Construction of the intersection structure (grade separation/flyover structure);
- Construction of Baker Viaduct;
- Major earthworks consisting of a cutting to the west of the intersection structure;
- Embankment between the intersection structure (Grade Separated Junction – the flyover) and Baker Viaduct;
- Retained embankment to the East of Baker Viaduct (Weaving Lane);
- Reconstruction of Calder Road bridge crossing the railway plus remodelling of the Calder Road river bridge resulting from a vertical alignment lift over the bridge;
- Static Frequency Converter – electrical supply point for the electrified network;
- Associated track, drainage, OLE and signalling work;
- Reconstruction of Thornhill Road bridge; and
- Demolition and reconstruction of Ravensthorpe Station.

9.1.3 The objectors to the Scheme who raise matters that require address in this route section are:

- **OBJ 05** Northern Power Grid
- **OBJ 07** Shackletons
- **OBJ 12** Northern Gas Networks
- **OBJ 19 to 22 and 29 Newlay** (Asphalt, Readymix, Concrete, Dewsbury Sand & Gravel, Wakefield Sand & Gravel)
- **OBJ 33** Kirklees Council
- **OBJ 35** Canal & Rivers Trust
- **OBJ 36** Dewsbury Riverside Ltd
- **OBJ 42** Veolia

9.2 Newlay (OBJ18-22) Flyover vs Dive-under:

9.2.1 The construction input to selection of the grade separation solution (flyover versus dive-under) was based on comparison of the general arrangement drawings 151667-TSA-11-MVN2-DRG-Z-MF-143040 (P02.1) for the Fly Over and 151667-TSA-11-MVN2-DRG-Z-MF-143041 (P02.1) for the Dive-under, see extracts contained in Appendix 1. This is summarised in Table 9-1 below.

9.2.2 I have produced Table 9-1 based on the Option Selection Assessment which was undertaken during GRIP 3 for which I was the Construction expert for the GRIP 3 Option Selection. This table provides an overview & summary of the differences in construction challenges between the flyover and dive-under options.

Table 9-1: Construction challenges of fly over and dive-under options

Subject/Area	Fly Over		Dive-under	
Geotechnical	Pile supported reinforced concrete portal structure minimises excavation into the ground and reduces the excavation over balance on the project. Also, this is a conventional, well understood & simple construction technique. The piles for this solution are simple individual bored piles of relatively simple construction.	✓	In comparison the dive-under is a complex secant piled box, this is a more complicated form of foundation method in comparison to the flyover. Increased piling and excavation through the Demex 'asbestos' landfill site is necessary for the diveunder. In the interest of ground movement and structural efficiency, this would be delivered via a 'top down' sequence for the box section which is more complex involves mining techniques which require underground working which is far more restrictive construction method. The simplest & most efficient approach is to build bottom up. See image below of upper section secant wall and construction of top prop below from Bond Street Station (Crossrail). Image represents circa 20m long north west shaft compared to some 675m of secant wall and box required for the dive-under structure.  Dive-under solution has an increased risk of larger scale short and long-term ground movements in the trough sections where the walls are propped cantilevers, especially through the made ground and landfill sites. To reduce this risk requires larger/stiffer piles and more expensive piling techniques and/or temporary propping arrangements which all increase costs and programme.	×

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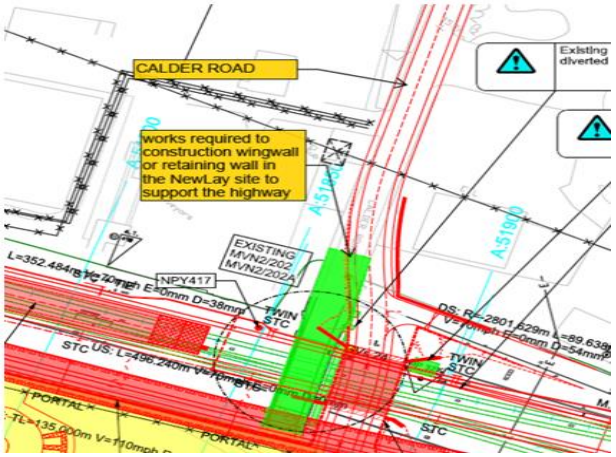
Mining Risk	Mining risk for the flyover structure viewed as being low as only required to the area of the piled structure. Mining mitigation would have to be undertaken before the main construction works.	✓	Secant piled top-down box with cantilever trough section likely to have a more significant impact on shallow mine workings and to require a much higher level of mining mitigation measures. The area of mitigation is circa triple that of the flyover and the dive-under leads to more mining risk with the remediation being in the form of grouting. This would have to take place before the main construction works.	×
Asbestos	Reduced volume of asbestos from the Demex site being handled and reinterred or being rehandled to alternative landfill sites.	✓	Excavation derived from the pile volumes and from the dive under box/trough within the Demex site is more extensive, with increased volumes of asbestos bearing material needing to be transported off site for internment.	×
Northern Gas Networks (NGN) (HP Gas)	Single phase delivery of necessary diversion, requiring a UTX across the tracks and a corridor through the project.	✓	Double diversion – first stage over Calder Road Bridge which facilitates construction of the Phase 1 eastern box and trough, then a second stage diversion from redundant Calder Road bridge to the new bridge. This is likely to lead to additional impacts on the road network during the second stage of diversion and an extended programme and utilities cost.	×
Calder Road (North) - Newlay	Additional land outwith the permanent land acquisition required for construction of the approach embankments to the proposed Calder Road bridge and for piling rigs and laydown areas for the bridge construction. Reconfiguration of Newlay site (primarily the concrete batching plant) proposed to maintain operability. Disruptive roadworks scheduled for outside of normal business hours to maintain business operations and access can be maintained to Newlay. Calder Road bridge built offline to minimise construction impacts and road closures.	× × ✓ ✓	Two phase construction of Calder Road required for the west wingwall which can only be facilitated once the new deck is commissioned – thus a temporary retaining structure is required to support the highway adjacent to the abutment. Construction of the west wingwall would either require temporary access via the Newlay site or further road closures on Calder Road. 	×

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			Reduced temporary land required for construction of western face approach embankment. Calder Road bridge built offline to minimise construction impacts and road closures. Alternative long term road closures for an on-line reconstruction are perceived to be untenable and a temporary realignment and temporary bridge would incur additional schedule and expense when compared to a single offline solution. Secant piled retaining wall required on the east side of the north approach embankment and to retain around the Spenborough site. Rigs, handling cranes and equipment will be located on Calder Road, resulting in an extensive closure of the road affecting Newlay and the general public. As noted above additional road restrictions for the NGN diversions are necessary for a 'double diversion'.	✓ ✓ × × ×
Calder Road (North) – Spenborough and Ravensthorpe Station	Largely unaffected as diversion to the west of the existing bridge. Some traffic management required e.g., lane restrictions resulting from the roadworks at the tie-ins.	✓	Western secant piled retaining wall significantly affects Spenborough land and business operation. Highways alignment would need development to avoid the indicated clash between the embankment and the south building, but it is anticipated that this could be achieved Road closure required for the secant wall that returns along the station approach road resulting disruption of station access and the need for either temporary station closure or an alternative pedestrian route in through the industrial estate. Road closures required as secant piling rigs, equipment and service cranes are located on the road.	× × ×
Calder Road (South) - Veolia	Diversion of the NGN gas main requires the partial possession of the existing Veolia facility for the construction works and the creation of a compensatory vehicle standage to the south of Calder Road. On completion of the project there is a land exchange adjacent to the	×	Phase 2 secant piling works for the completion of the eastern box, the intermediate trough and for the east end of the western box make the maintaining of the existing Veolia facility, in my opinion, impractical as a result of the multiple piling rigs and working platforms required, service cranes and high quantum of reinforcement cages, and concrete materials, exaction arisings removal etc for this scale of construction. Calder Road closure for construction of the Spenborough/station retaining wall impact vehicular and pedestrian access, access through Ravensthorpe	× ×

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	NR boundary that would increase the available space for the storage of vehicles.	✓	precluded. In addition, the two-phase NGN gas diversion has similar impacts with road restrictions required.	
Life Cycle Cost	Capex £380m Structure circa 325m in length, including wingwalls.	✓ ✓	Capex £421m, with extended liability for maintenance and operation of drainage pumps and a much larger structure. Structure circa 675m in length, including wingwalls.	× ×
Aesthetics and Canal & River Trust	Flyover arrangement provided a consistent Baker Viaduct elevated soffit height and the ability to diverge the slow line decks from the fasts, thereby decreasing the shade effect from the viaduct as it crosses the canal and its tow path. This being desirous following consultation with Canal and Rivers Trust.	✓	The vertical alignment of the fast lines is depressed compared to the slow line's as the route climbs out of the dive-under. Also, the differences in level lead to increase in construction complexity in comparison to the Flyover arrangement over the canal.	× ×
Programme Commence Work on Site Civils ready for Track	Advantageous construction programme that provides a less complex project critical path and float on the grade separation structure activity. March 2023 March 2025 (achieves July 2025 Thornhill LNW Blockade)	✓	Multi-phased highly complex programme with circa 9 month extended programme compared to the flyover based on assumption at the time of Option Selection. Post option selection, further assessment & engagement with the rail industry has demonstrated that the construction duration increase compared to the flyover would lead to the summer blockade being missed (mid-July) and result in a year delay until the next available blockade. The 23 day blockade for the associated Thornhill Junction is only available in mid-summer (July), as a result the Thornhill junction works are pushed forward to July 2026 and the Entry into Service would be a year later than planned. March 2023 October 2025 (misses July 2025 Thornhill LNW Blockade and therefore due to access planning rules, in negotiation with TOC/FOC, leads to +12 month disruptive access delay).	×

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Completion of civils structure	February 2026		February 2027	
Thornhill LNW Block	July 2025		July 2026	
OLE section proving complete	June 2026		October 2027	
Infrastructure Ready to use	December 2026 (Timetable change)		December 2027 (Timetable change)	

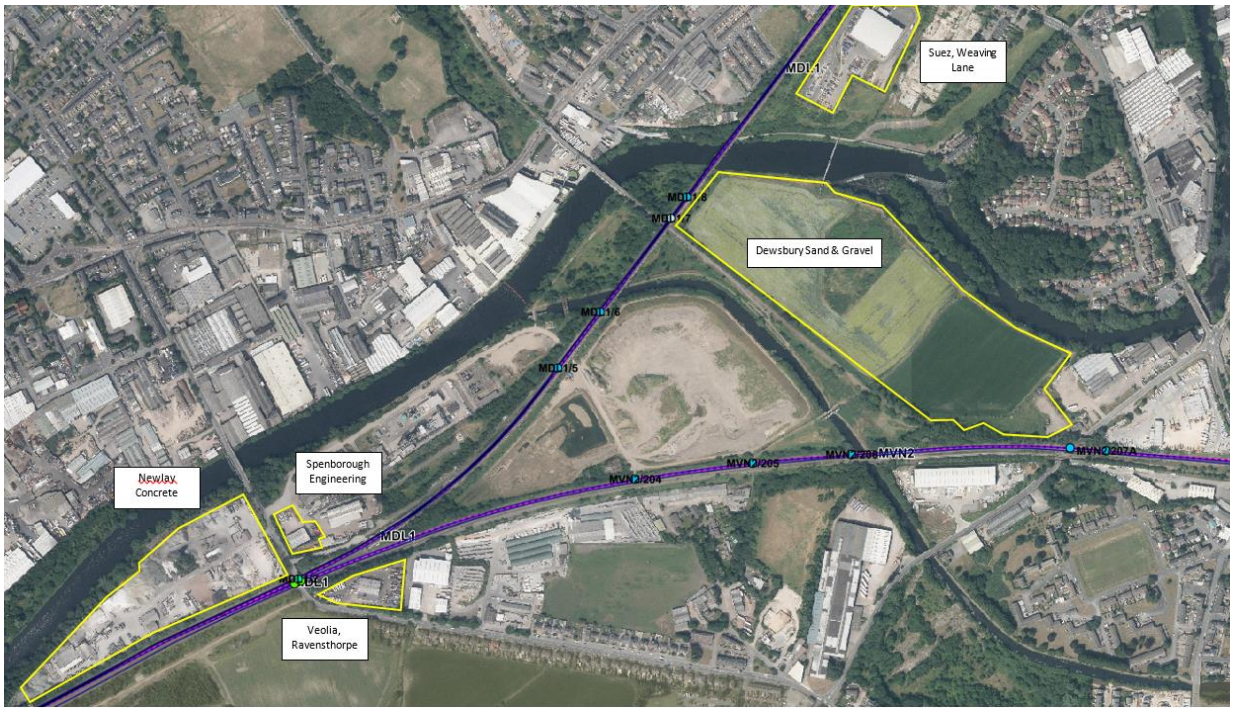
9.2.3 In conclusion, based on the Option Selection assessment which I was involved in, the summary above, and my 35 years of professional engineering experience; the dive-under option presents a considerably more challenging and complex construction and has significantly greater risks; for example, in relation to mine workings, asbestos arisings, general exposure to geotechnical risk and overall complexity of the construction method (top down compared to bottom up). The programme developed for the dive-under does not include the risks of ground conditions and mine workings which could lead to longer programme durations and increased disruption both to the travelling public, businesses and local community. Therefore, one year delay on completion of the dive-under vs the flyover is a best case assessment which would result in a one year delay of entry into service.

9.2.4 The flyover option in my expert opinion, is standard construction methodology, with less risk exposure and therefore, greater programme and cost certainty.

9.3 Flyover Construction Delivery

9.3.1 I now focus on the construction delivery of the flyover and address the specific objections in relation to this, which are **OBJ 18** Hargreaves (GB) Ltd,**, OBJ 19** Newlay Asphalt Ltd**, OBJ 20** Newlay Readymix Ltd, **OBJ 21** Newlay Concrete Ltd**, OBJ 22** Dewsbury Sand and Gravel Ltd and **OBJ 29** Wakefield Sand and Gravel Ltd. Figure 9-1 below illustrates the geographical location of the works.

Figure 9-1: Ravensthorpe Geography and Key Stakeholders

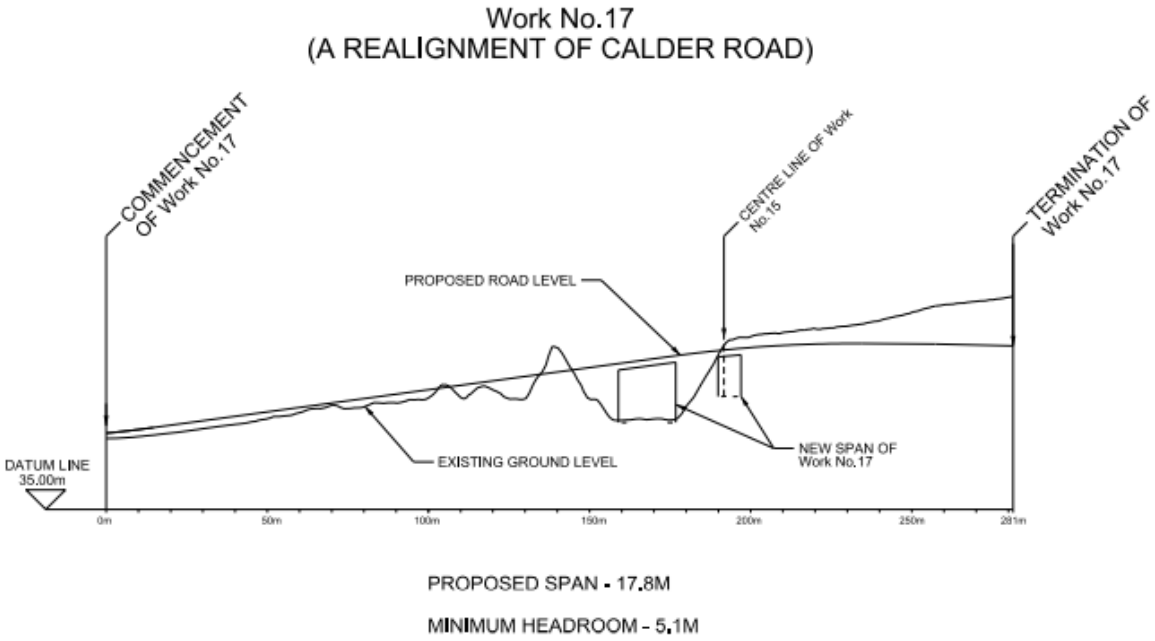


Works on and adjacent to Calder Road

9.3.2 The works on and around Calder Road to the north of the existing rail corridor include the reprofiling and realignment of the road. The reprofiling of the road is needed to give a consistent gradient from the existing River Calder Bridge (MDL1/3 to the left of the drawing shown at Figure 9-2 below) to accommodate an increase in elevation at the proposed new rail bridge (MVN2/202 the new spans shown on the drawing below at Figure 9-2).

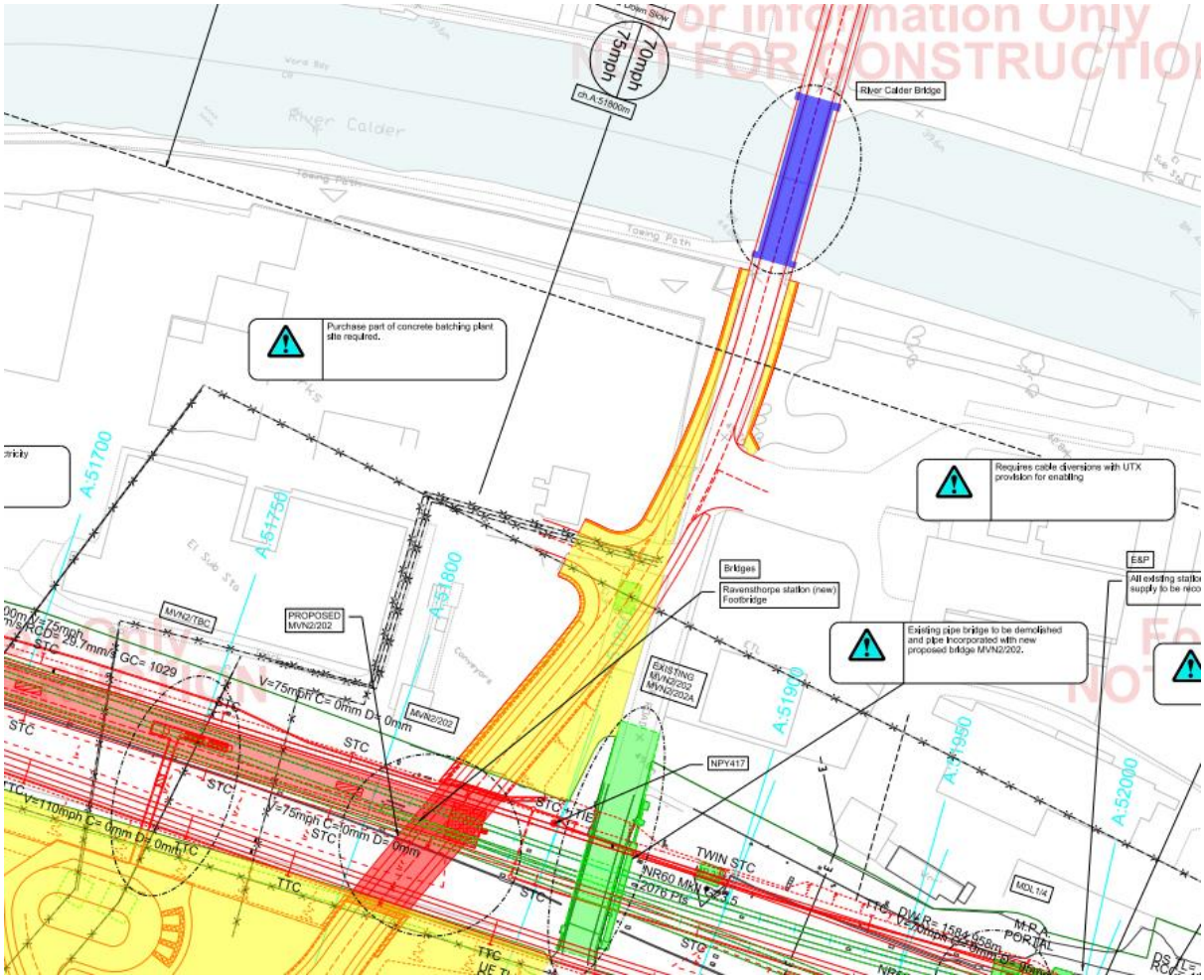
9.3.3 To enable the road level to be raised at the south end of the river bridge a complete closure of Calder Road will be required for a prolonged period of time. Current assessment is a 6 month closure but through ongoing design development this may be reduced. Note that a similar closure was in place for the relatively recent full refurbishment of this structure. During this work all access to the Newlay site would be from the south.

Figure 9-2: Realignment of Calder Road



9.3.4 Realignment of Calder Road is needed to allow the proposed new Calder Road Bridge to be built offline which will allow the existing Calder Road Bridge to remain in service up to the time when the new bridge is brought into use. The proposed new Calder Road Bridge is located to the west of the existing bridge alignment, Figure 9-3 refers.

Figure 9-3: Calder Road realignment



Realigned Calder Road in Yellow, with Calder River bridge Blue, and new rail bridge MVN2/202 Red, existing rail bridge MVN2/202 Green.

9.3.5 To accommodate the new Calder Road alignment, part of the Newlay site will be needed for both temporary and permanent use. The land is required for a construction compound and for the construction of the north abutment of the proposed new bridge.

9.3.6 Before occupation of this site is taken the road junction from the site onto Calder road will be remodelled and the operations within the Newlay site will be reconfigured. Two options have been proposed to Newlay for the reconfiguration of the site and these are shown below (Figure 9-4 and Figure 9-5). There is ongoing engagement with Newlay regarding these options.

9.3.7 The works are proposed to be undertaken at a time when the plant is closed to allow the reconfiguration without disrupting the Newlay businesses i.e., Newlay have indicated this could be at Christmas time when the customers of Newlay (the construction industry) traditionally take a two-week break;

although more recent communication with Newlay has indicated that building a new batching plant on the site in parallel to operation of the existing might be preferred.

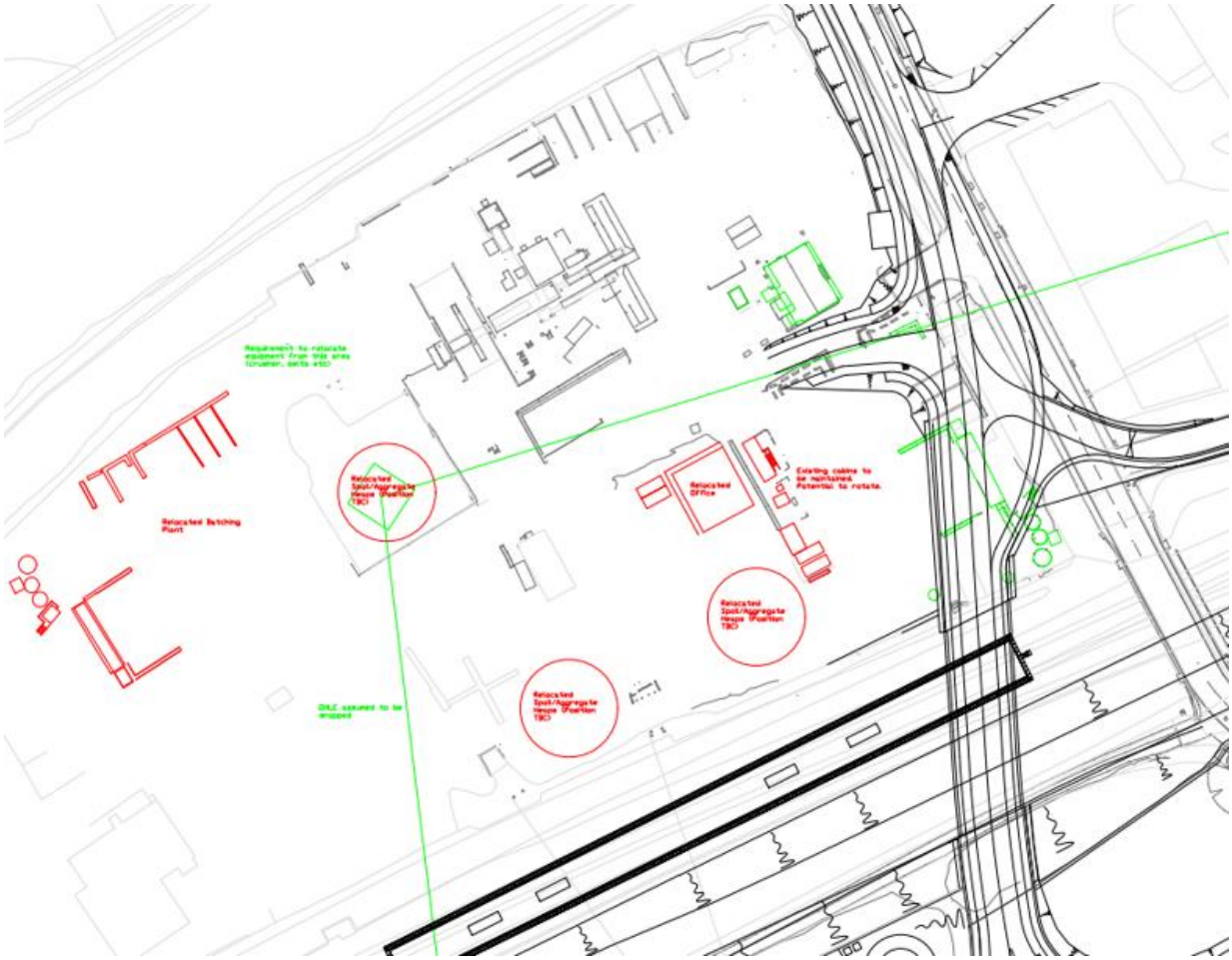
9.3.8 Other works that affect the Newlay site are associated with the removal of Northern Powergrid (132kv) Overhead Power (OHP) Lines. This work will be completed over a number of phases.

- Phase 1: Northern Powergrid to run a new underground 132kv power line to be routed to the south of the rail corridor and to cross the lines on the existing Calder Road Bridge MVN2/202 (Green on Figure 9-3 above);
- Phase 2: Northern Powergrid decommission the existing 132kv OHP Lines and remove them along with the support structures Pylon/poles; and
- Phase 3: When the proposed new Calder Rd Bridge is constructed (Red on plan above) to the west of the existing bridge, Northern Powergrid will divert the power lines onto the new structure.

9.3.9 It is reasonable to infer that the removal of the 132Kv OHP from the Newlay site will be a long term benefit for the operators of the site.

Figure 9-4: Option 1 Reconfiguration of the Newlay Site, Red proposed, Green existing

Figure 9-5: Option 2 Reconfiguration of the Newlay Site, Red proposed, Green existing

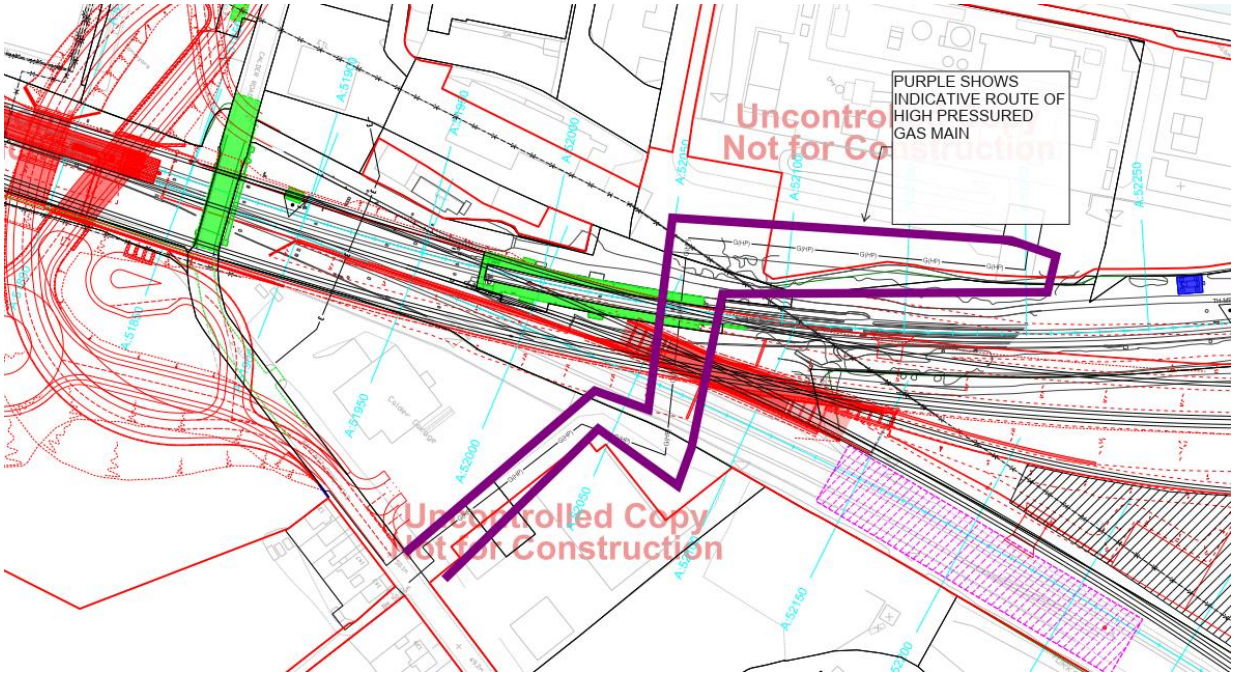


9.3.10 The programme for the works in this area are planned to commence in May 2023 and be completed by January 2025

Works to the south of Calder Road Bridge and new Intersection Structure (flyover)

9.3.11 The intersection structure will be built offline to the east of the existing Thornhill Rail Junction, and to the north of the Wakefield lines MVN2 and south of the Leeds lines MDL1. Access for the construction works will be from Forge Lane to the east of the proposed structure, over the Huddersfield and Calder Navigation canal via a temporary bridge. The compound for the works will also be to the east of the structure (as described in section 9.4).

Figure 9-6: Intersection carrying the new fast lines over the realigned MDL1 slow and MVN2 lines in Red



9.3.12 The construction of the intersection structure will necessitate the diversion of a High Pressure (HP) Gas main which supplies gas to Thornhill Power Station located to the north of the lines. At present the HP Gas Main crosses from south to north under both the MVN2 and MDL1 rail lines directly under the location of the proposed intersection structure, shown on the plan above denoted G(HP) and highlighted with the bold purple outline. The level of the gas main is too shallow to accommodate the new construction and so a diversion is necessary, refer to Figure 9-6 (above).

9.3.13 The proposed new route for the HP Gas Main will run to the west, into the Veolia site and then north, via a micro tunnel, under the rail lines and from there to the east into Thornhill Power Station as denoted below at Figure 9-7.

Figure 9-7: Proposed Gas Main Diversion shown in yellow on the plan above with intersection structure shown to the right.

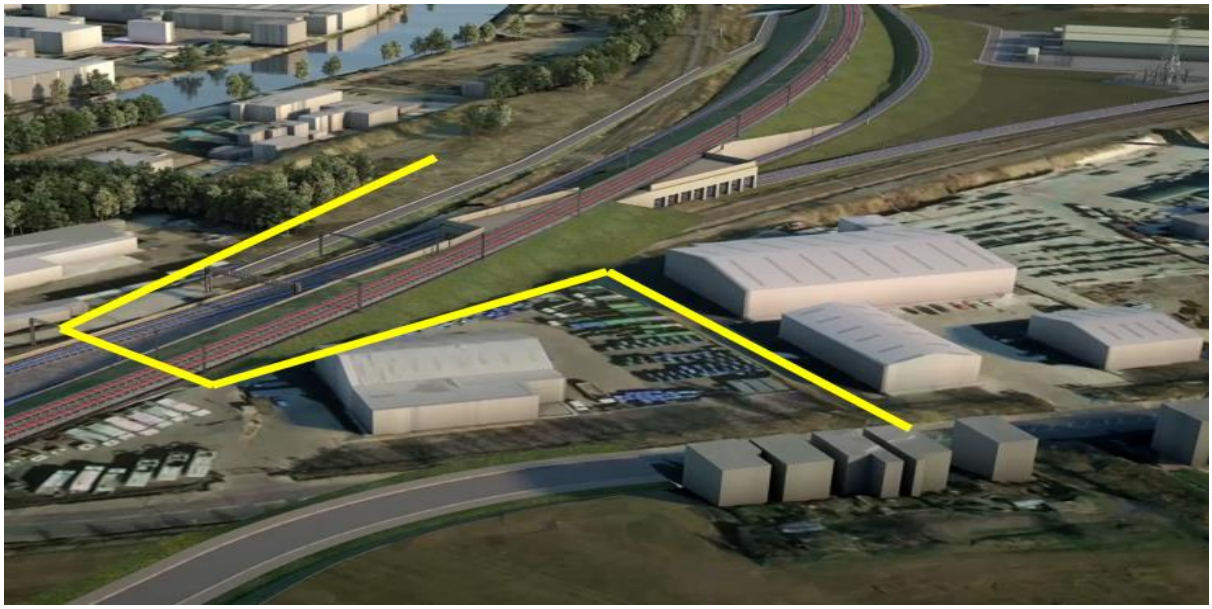
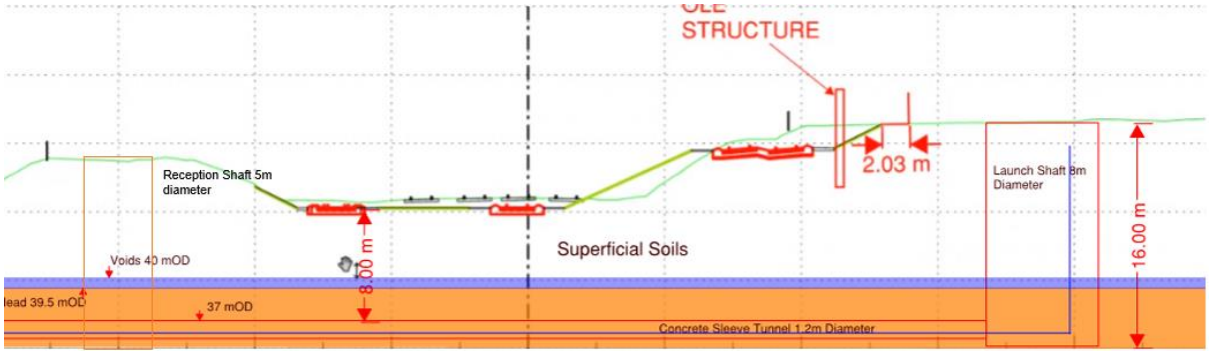


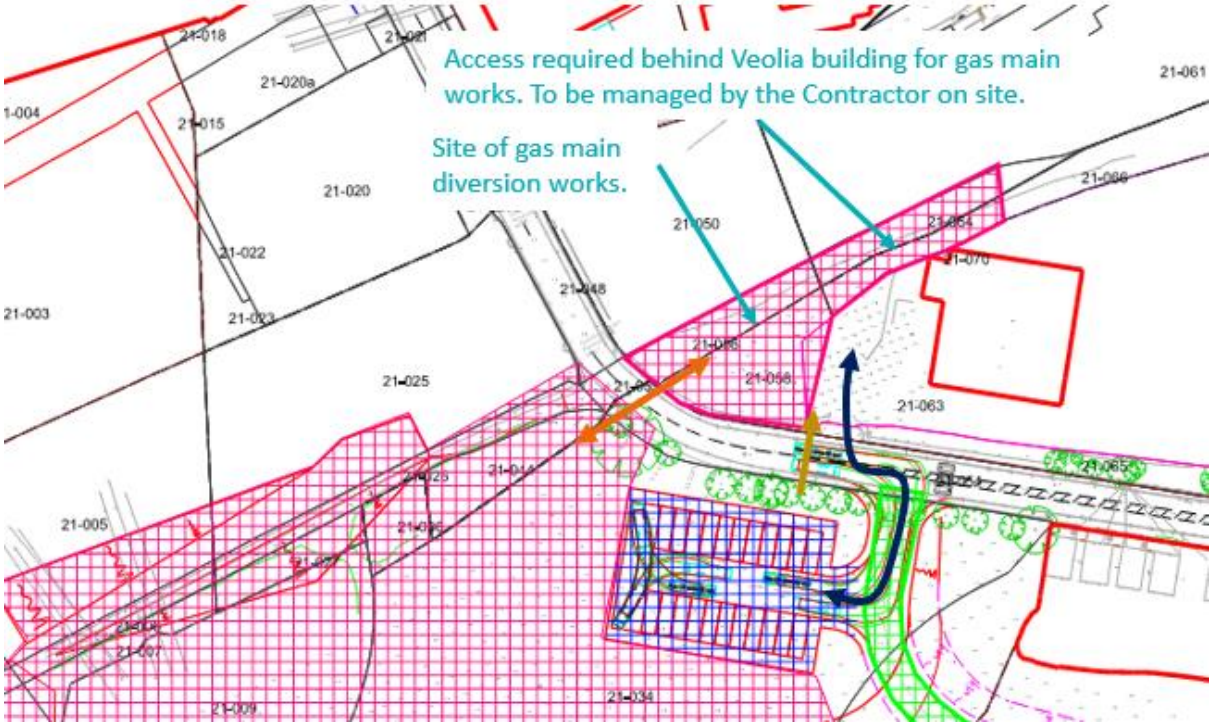
Figure 9-8: proposed cross section of the gas main diversion



9.3.14 Figure 9-8 above shows the proposed cross section of the gas main diversion with the tunnel launch shaft to the right, in the Veolia site and the reception shaft in the existing Network Rail Ravensthorpe Station access road.

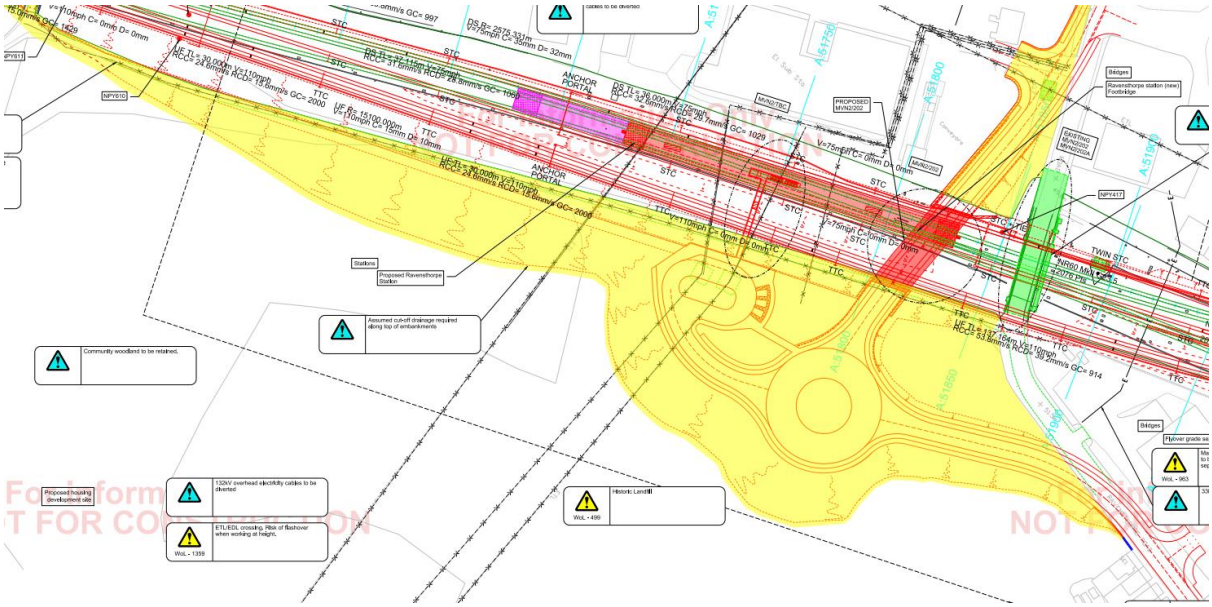
9.3.15 The gas main diversion is planned to take place early in the programme, commencing in October 2023. Alternative parking for the vehicles which operate from the Veolia site will be provided whilst these works take place for example as shown in Figure 9-9 (below). I understand there are ongoing discussions between Network Rail and Veolia to agree the mitigation measures required to facilitate these works.

Figure 9-9: Alternative parking for Veolia vehicles shown above marked blue on the opposite side of Ravensthorpe Road.



9.3.16 The alternative parking area will be provided early in the programme commencing in May 2023 and will precede the gas main diversion.

Figure 9-10: Construction of new roundabout, earthworks, and road diversion to the south of the rail corridor



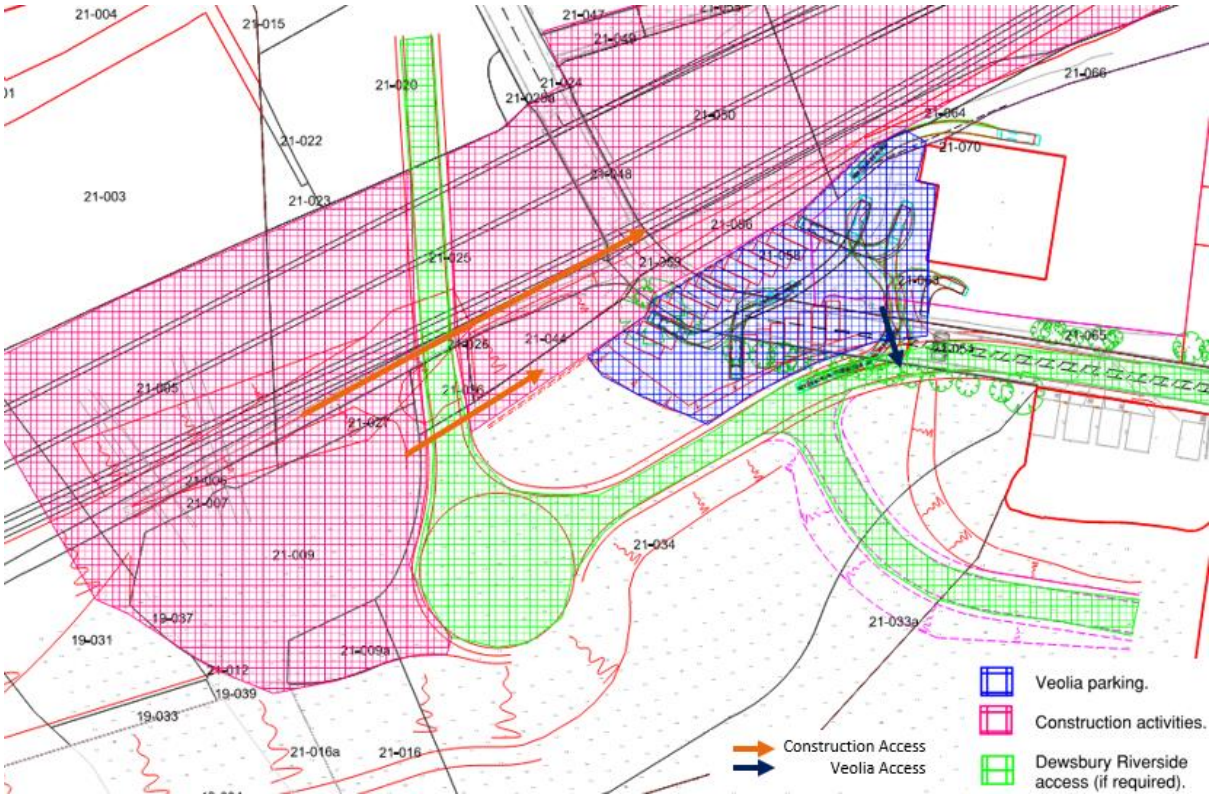
9.3.17 The extent of the proposed works is shown in yellow on the above plan at Figure 9-10 and will comprise the widening of the existing rail cutting to

accommodate the new fast lines, the construction of a new roundabout and new station concourse, with drop off parking and turning area. The works will also incorporate the diversion of Overhead Power Lines as previously described. There are two buried water mains which run along the crest of the existing cutting slope which will also be required to be diverted.

9.3.18 These works will be accessed from the corner of Ravensthorpe Road, south of the existing rail bridge MVN2/202. A hard standing area will extend to the road for vehicles entering and leaving the site. A wheel wash will be located on the hard standing area for vehicles leaving the site.

9.3.19 The strategic compound for these works will be located within the Ravensthorpe Triangle near to the viaduct construction site. There will be a minor satellite welfare compound to service these works located behind the existing Ravensthorpe Station at the end of the access road.

Figure 9-11: final road layout and Veolia site layout including parking in autumn 2024



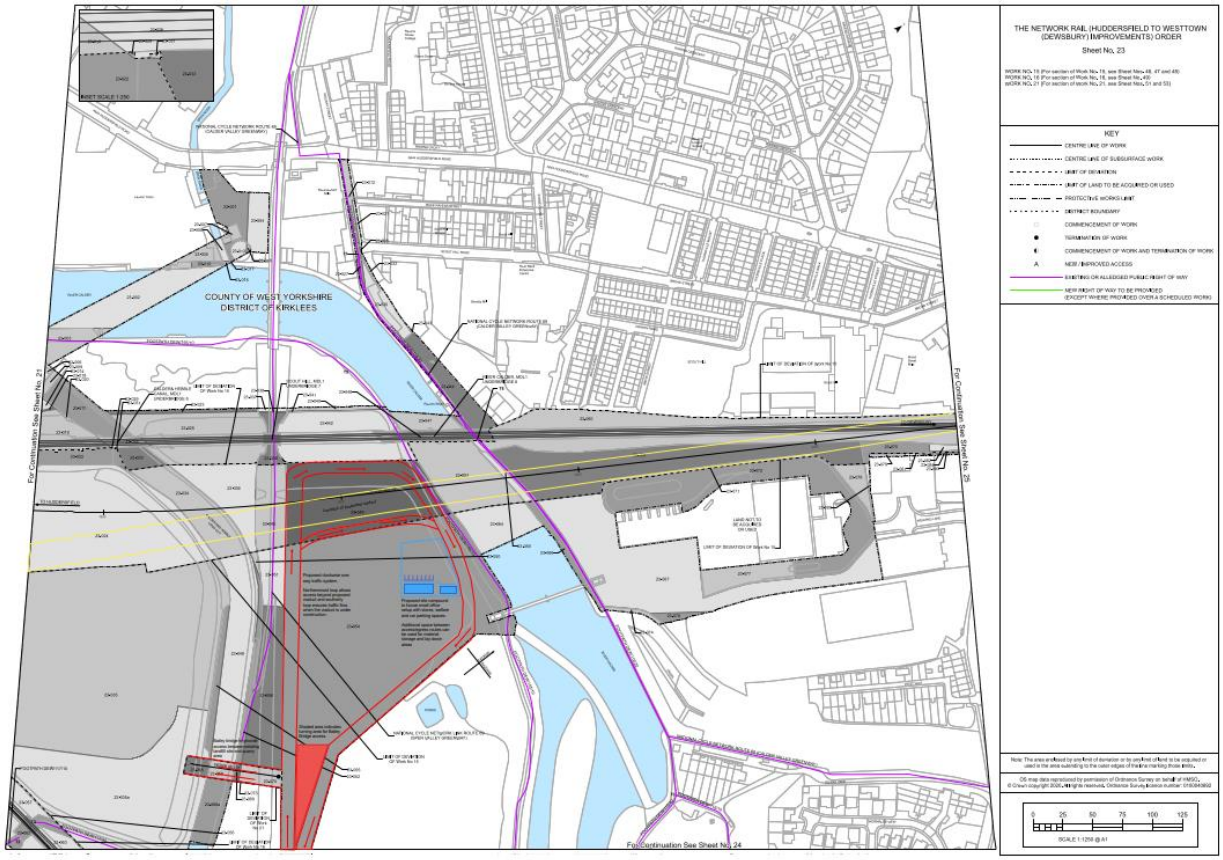
9.3.20 The works will be phased to complete the remaining railway earthworks on the north side of the Veolia site after the completion of the road diversion. The existing Calder Road Bridge will be demolished in November 2024 which will allow the final works to the top of the cutting to the rear of the Veolia site. A vehicle restraint barrier will be installed together with a new boundary fence, Figure 9-11 refers.

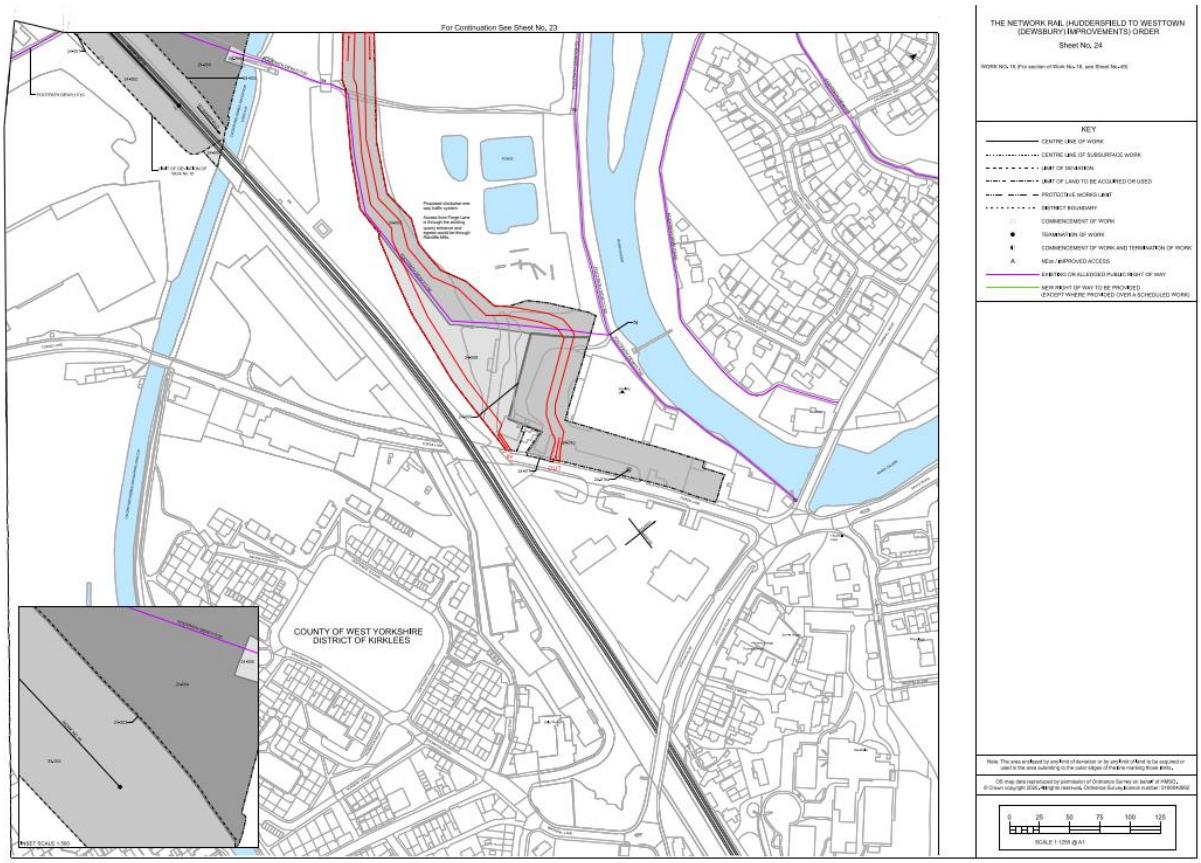
9.4 OBJ 22 Dewsbury Sand & Gravel Ltd

Compound Location

9.4.1 In order to support the efficient delivery of construction, a strategic compound located adjacent to the works at the existing sand and gravel quarry is necessary. This compound will include site lay-down areas, materials storage and handling areas, main site offices and parking provision, see Figure 9-12 below.

Figure 9-12: Ravensthorpe Main Compound and Access





Provision of a site compound

9.4.2 The compound at the existing sand and gravel quarry, Ravensthorpe will include the following:

- An office facility for project staff, serving as the central hub for several surrounding interventions, where only satellite provisions will be made;
- Access for delivery of materials to the Viaduct worksite will be facilitated with a new haul road from Forge Lane, through the existing quarry entrance and egressing through Ratcliffe Mills. Access from this area to the existing landfill site, where the embankment and western section of Baker Viaduct is to be constructed, will be via two parallel “Bailey” bridges over the Calder and Hebble Navigation Canal, creating a one-way system through and around site;
- Working areas will be fully secured for the plant, equipment and materials to be stored here;
- Parking of plant, equipment and personal vehicles; and
- A welfare area for breaks, preparing hot food and drinks and toilet/washing facilities.

Suitable alternatives considered

9.4.3 The compound setup is to make use of the temporary acquisition of the existing sand and gravel quarry. This area is fully separated from public spaces and minimizes the impact on nearby businesses and residents. The alternative of providing multiple compounds at each local intervention (i.e., Calder Rd, Thornhill Rd, Weaving Lane, Occupation etc) would have significant negative impacts on the landowners/business operators in those areas. Therefore, this strategy was discounted in favour of a larger strategic compound at Dewsbury Sand & Gravel.

9.4.4 A large compound and haul road at the Dewsbury Sand & Gravel site will allow safe, separated delivery and management of materials including imported fill for the embankment construction, large structural elements for the construction of Baker Viaduct and the intersection structure to the east (see Figure 9-12 above). A large area in the vicinity of both the flyover and Baker Viaduct structures will allow for pre-assembly of structural elements, facilitating a safer construction methodology than assembling in-situ.

Duration of the Works

9.4.5 The current programme states that the works at Ravensthorpe will commence in May 2023 for the Viaduct and August 2024 for the embankment and will cease in October 2024 for the embankment and February 2025 for the Viaduct

Impact on Local Businesses, Tenants and Occupiers

9.4.6 My understanding from discussions with this objector are that the sand and gravel quarry where the works and compound will be located is almost spent, in terms of materials available for extraction, and plans are in place to remediate the area following completion of quarry activities. Allowing for the completion of quarry activities prior to acquisition would significantly mitigate the negative effect on business here.

9.4.7 Access via Forge Lane will be managed with a suitable traffic management plan and the residents at 2 Forge Lane will be completely separated from site activities. Egress through Ratcliffe Mills will require attention in the traffic management plan and coordination with the owner and tenants, to ensure safe movement of vehicles and plant through the area.

9.4.8 The existing landfill site has been capped and landfill operations ceased, there are thus no envisaged impacts on this business. Access between this site and the quarry area will be via temporary “Bailey” bridges which reduces the need to direct construction traffic along public routes and separates plant movements from areas with a potential public interface.

9.4.9 Operations to construct the foundations and install the "Bailey" bridge arrangement will be communicated and coordinated with the Trust, under the Protective Provisions within the Order, ensuring the effects on the towpath and navigation of the canal are minimised.

9.5 Weaving Lane, Retaining Walls

9.5.1 The key elements to be constructed in the Weaving Lane area are:

- Construction of two new retaining walls to accommodate the widening of the existing rail embankment to allow the new tracks over Baker Viaduct to tie in with the existing MDL1 tracks; and
- Installation of four new tracks (from Baker Viaduct) that become two before the point of tying in with MDL1.

9.5.2 The objectors to the Scheme who raise matters that require address in this area are:

- **OBJ 07** Shackletons Ltd
- **OBJ 33** Kirklees Council (Suez Waste Sites)

9.5.3 The general geography of the site can be seen in Figure 9-14.

Compound Location

9.5.4 A satellite compound located adjacent to the works at Suez, Weaving Lane will include lay-down and materials handling areas a small parking provision and suitable welfare arrangements for the workforce. The strategic compound located at the sand and gravel quarry east of Ravensthorpe (see Figure 9-12) provides the substantive administration/office support for these works.

Provision of a site compound

9.5.5 The compound at Suez, Weaving Lane will include the following

- Access for delivery of materials to the worksite will be facilitated with traffic management, ensuring Suez's working area is relocated and sufficiently segregated;
- Working area to be fully secured and plant, equipment and materials to be stored here;
- Parking of plant, equipment and a limited number of personal vehicles;
- A welfare unit for breaks, preparing hot food and drinks and toilet facilities. This is to be located beyond Suez's secure gates and kept locked when not in use;

Suitable alternatives considered

9.5.6 The compound setup is to be fully separated from the temporarily relocated recycling facility and welfare. This proposal removes the need to reduce the capacity of the recycling centre and completely removes plant-pedestrian interface around the construction area. An alternative of sharing the existing access arrangement was considered, however this placed restrictions upon both the operation of the Suez site and the construction site and increased the interface between construction activities and the public resulting in health and safety concerns which are not favoured.

9.5.7 As a result of this conclusion, the existing recycling facility is to be temporarily relocated to the south east as shown in Figure 9-13, with a separate access road constructed to serve the temporary layout. Construction site traffic will access the area currently used as the recycling facility via the existing route.

9.5.8 On completion of the construction works the Suez site will be returned to its original arrangement.

Duration of the works

9.5.9 The works at Weaving Lane will move along the embankment as the job progresses. The current construction programme indicates that the works will commence in June 2023 and will be complete in December 2023.

Impact on Local Businesses, Tenants and Occupiers

9.5.10 Temporary reconfiguration of the existing recycling centre will allow for a larger construction compound area and remove the need to reduce capacity of the recycling facilities (see Figure 9-13). Complete separation of the recycling facility and construction area also removes the risk of plant-pedestrian interface. Traffic management and signage will direct the public to the new route setup to the east of the existing access roundabout and all provisions currently in place at the recycling facility will be relocated to the new position. I understand that there are on-going discussions with Kirklees Council and the operator Suez with a side agreement being drafted to confirm the commitments made by Network Rail.

9.5.11 The construction area to the rear of Armley Chairworks and Shackletons will be fenced off to ensure the existing fire escape route is safely maintained and segregated from site operations. Commitments have been offered to Armley Chairworks and Shackletons in relation to maintaining the fire escapes and operation of their businesses. Emergency procedures will be discussed and agreed with both stakeholders prior to commencement of the works. Any site

deliveries will access from the RRAP installed near MDL1/9 Thornhill Road or the compound at Suez, Weaving Lane.

Figure 9-13: Suez Site Temporary Reconfiguration

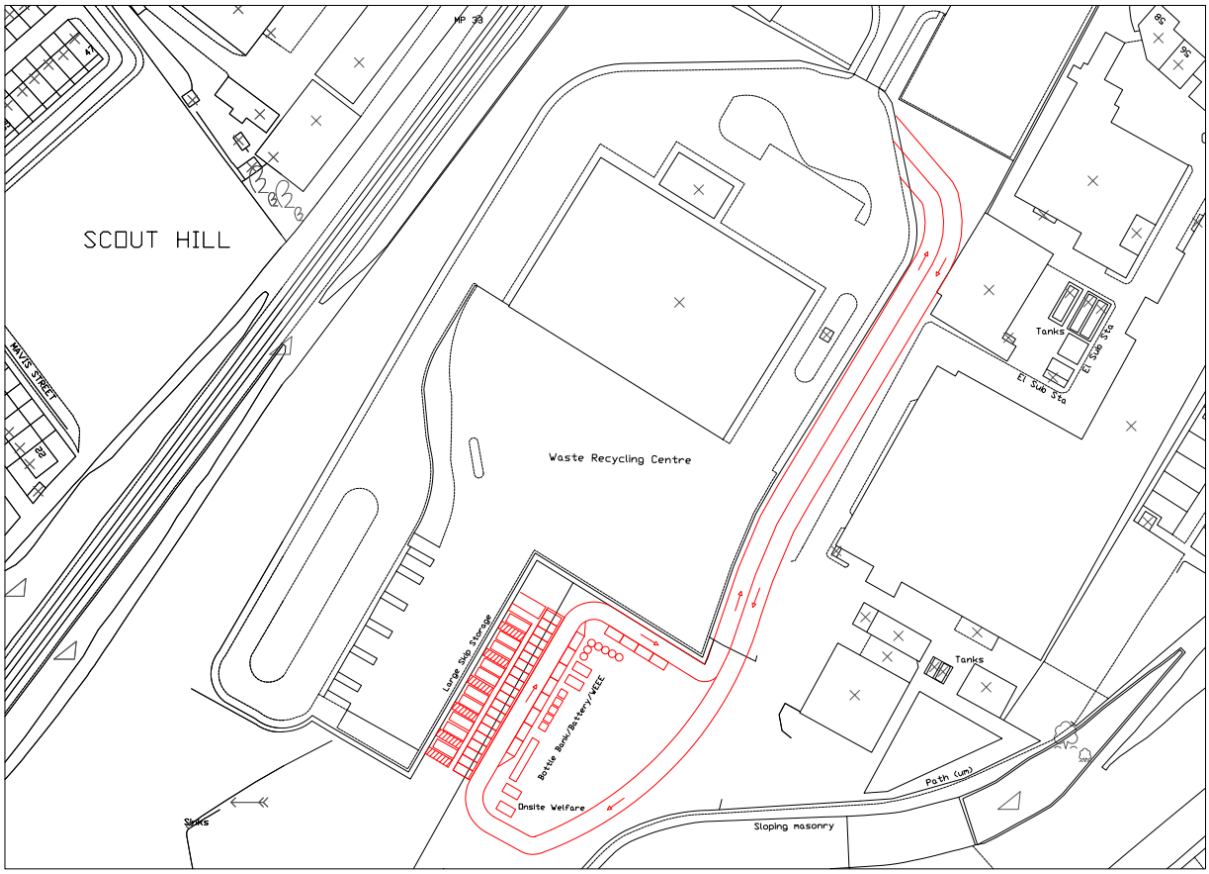
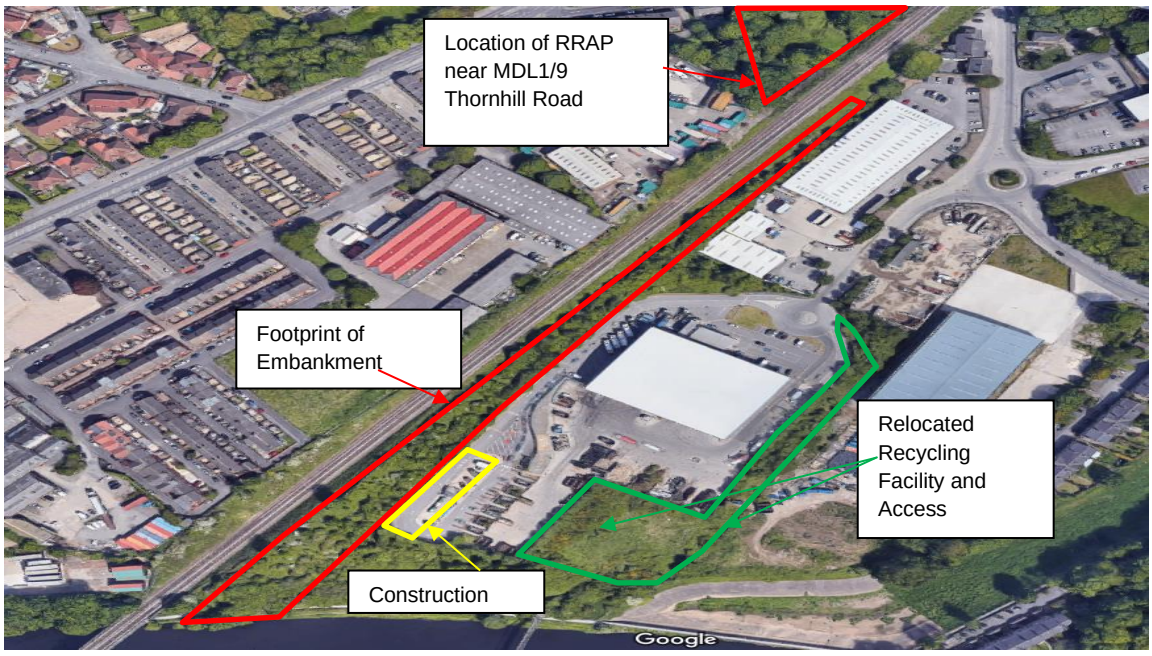


Figure 9-14: General Geography and Key Stakeholders at Weaving Lane



10. WITNESS DECLARATION

Statement of declaration

10.1.1 This Proof of Evidence includes the facts which I regard as being relevant to the opinions which I have expressed, and the Inquiry's attention has been drawn to any matter which would affect the validity of that opinion.

10.1.2 I believe the facts which I have stated in this Proof of Evidence are true and that the opinions expressed are correct, and,

10.1.3 I understand my duty to the Inquiry to help it with the matters within my expertise and I believe I have complied with that duty.