

TRANSPORT AND WORKS ACT 1992
TRANSPORT AND WORKS (INQUIRIES PROCEDURES)
RULES 2004
NETWORK RAIL (STALYBRIDGE TO DIGGLE
(SADDLEWORTH) ENHANCEMENTS) ORDER

CONSTRUCTION
PROOF OF EVIDENCE
KEITH GARDNER

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1. INTRODUCTION

1.1 The Order

- 1.1.1 On 7 November 2025 Network Rail Infrastructure Ltd (“Network Rail”) applied to the Secretary of State for Transport for the Network Rail (Stalybridge to Diggle (Saddleworth) Enhancements) Order (the Order). The application was made under Sections 1 and 5 of the Transport and Works Act 1992 (the TWA).
- 1.1.2 The purpose of the Order, if made, is to give Network Rail the necessary powers to construct, operate and maintain an improved railway, including the upgrade and reconstruction of the existing railway, railway electrification works and associated works on the Transpennine line between Stalybridge and Diggle (Saddleworth), The Order also authorises the construction of a new relocated station at Mossley, railway electrification works and bridge reconstruction works. The Order also confers powers to close and replace existing level crossings at Stockport Road and Moorgate Halt.

1.2 Qualifications and experience

- 1.2.1 My name is Keith Gardner, I have a BSc (hons) in civil engineering and now a semi-retired Chartered Civil Engineer with over 40 years of experience in the Civil Engineering Contracting industry. My career has included more than 20 years dedicated to the successful management and delivery of major rail infrastructure projects.
- 1.2.2 I have extensive experience at senior leadership level, having previously served as Project Director for a major civil engineering contractor. Throughout my career, I have led multidisciplinary teams, managed complex and high-value schemes, and ensured projects were delivered safely, on programme, and within budget.
- 1.2.3 I am currently engaged in the technical review of complex engineering schemes, providing strategic input on buildability, cost planning, risk management, and delivery strategy. My background also includes significant involvement in bid leadership and estimating management, supporting the successful procurement of major infrastructure works.

1.3 Role on the project

- 1.3.1 My role on the project is to act as an expert witness in relation to the civil engineering construction activities for the proposed W2B/C scheme on behalf of Network Rail.

1.4 Statement of Matters

1.4.1 The Statement of Matters (“SOM”) received for construction activities includes:-

1. The likely effects of the exercise of powers in the proposed Order on highways, access and traffic.
2. Impacts on residential amenities, community facilities, local businesses and tourism
3. The use, siting and operation of construction compounds, including Brookfields and other green space locations, impact on future developments in this area
4. Construction programming, phasing, timing, duration and sequencing, including interaction with local events and emergency access.

1.4.2 The above statement of Matters during construction is described in the following sections: -

Item 1: - Please refer to the Proof of Evidence of Chris Cary [NR/PoE/CC/5.2]

Item 2: - The staging of the works is described in section 10. Please also refer to the proof of evidence of Mark Ashton [NR/PoE/MA/1.2] and Chris Cary. [NR/PoE/CC/5.2]

Item 3: - Please refer to section 9.0

Item 4: - Please refer to section 10.0

2. SCOPE OF EVIDENCE

2.1 This Proof of Evidence is presented in the following sections:

- Mossley Station
- Moorgate Halt
- Oldham Road Bridge
- Station Road Bridge
- Ward Lane
- Royal George Bridge

- Compound Strategy
- Staging of the Works

3. MOSSLEY STATION

3.1 Background

- 3.1.1 Mossley is a small town within Tameside, Greater Manchester, circa 4km east of Ashton-under-Lyne, and 13km north-east of Manchester City Centre. The rail station is located 500m southeast of Mossley town centre. Mossley station is part of the TransPennine Route Upgrade (TRU) scheme to improve services between Leeds and Manchester. Currently, only platform 1 has step-free access via the station car park near Manchester Road (A635). The only connection between platforms 1 and 2 is via the station footbridge and Platform 2 stairs, and so there is no step-free access to Platform 2.
- 3.1.2 A Validation Panel held on 3rd March 2021 with all the relevant stakeholders, determined that the preferred option was to relocate Mossley station approximately 300m to the north of its current location on Manchester Road (A635). This is because it was deemed not feasible to meet the project requirements, including electrification, 150 m-long platforms, and step-free access within the existing station, due to site constraints, particularly the rock cutting adjacent to Platform 2. For further details, please refer to the evidence of Emma Clarke. [NR/PoE/EC/2.2]



Figure 1 Aerial view of Mossley Station

3.2 Summary of construction works

- 3.2.1 As part of the TRU programme, the relocated Mossley station will include an accessible footbridge connecting platforms 1 and 2, providing step-free access to both. The design features 150m platforms with secondary escape routes, a new station building, car parks, and a RRAP (Road Rail access point) to support ongoing operations. Mechanical and Electrical works will also be needed to power the station and associated facilities, including the car park, footbridge, and all access and egress routes. Items requiring power include lighting and telecoms assets such as help points, Consumer Information systems and the CCTV system. Furthermore, the relocated station will require drainage systems, including an attenuation below the access loop.
- 3.2.2 Works are also planned at the existing station to facilitate Overhead Line Equipment and track works. The work includes removal of the existing footbridge, partial demolition of the existing platforms, removal of platform furniture and rewiring of the existing car park close-circuit television and lighting. The proposed works are illustrated in Figure 2 below.

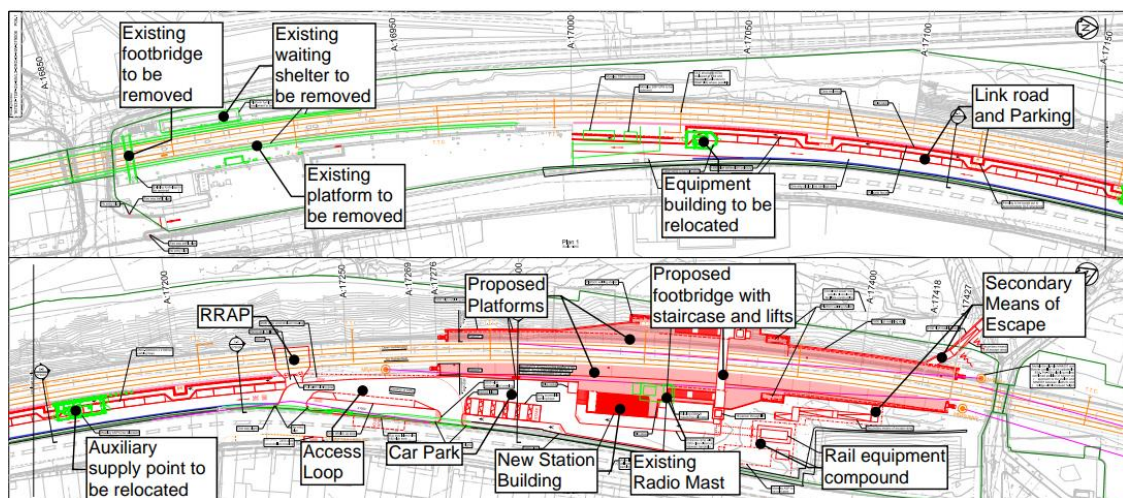


Figure 2 Annotated Extract from Option 2 drawing showing the proposed works

3.3 Objections

- 3.3.1 The summary of objections received include: -

1. Use of Mill Lane and Archer Street for construction Access (Objection received: OBJ 67, OBJ 68, OBJ 72, OBJ 75, OBJ 78, OBJ 79, OBJ 80, OBJ 81, OBJ 82, OBJ 84, OBJ 85, OBJ 86, OBJ 88, OBJ 89, OBJ 90, OBJ 92, OBJ 94, OBJ 96, OBJ 98, OBJ 99, OBJ 102, OBJ 104, OBJ 105, OBJ 106, OBJ 108, OBJ 110, OBJ 111, OBJ 113, OBJ 114, OBJ 115, OBJ 123, OBJ 125, OBJ 131,

OBJ 132, OBJ 135, OBJ 136, OBJ 143, OBJ 145, OBJ 153, OBJ 166, OBJ 174, OBJ 175, OBJ 180, OBJ 182, OBJ 187, OBJ 194, OBJ 196, OBJ 197, OBJ 201, OBJ 202, OBJ 207, OBJ 210, OBJ 213, OBJ 216, OBJ 217, OBJ 218, OBJ 222, OBJ 228, OBJ 229, OBJ 230, OBJ 231, OBJ 232, OBJ 237, OBJ 240, OBJ 246, OBJ 249, OBJ 250, OBJ 252 & OBJ 258)

2. Use of Brookfields for compound and construction access (Objection received: OBJ 27, OBJ 36, OBJ 49, OBJ 50, OBJ 57, OBJ 71, OBJ 75, OBJ 104, OBJ 106, OBJ 107, OBJ 108, OBJ 110, OBJ 113, OBJ 114, OBJ 115, OBJ 116, OBJ 120, OBJ 123, OBJ 135, OBJ 138, OBJ 143, OBJ 145, OBJ 153, OBJ 166, OBJ 169, OBJ 175, OBJ 176, OBJ 182, OBJ 187, OBJ 197, OBJ 199, OBJ 207, OBJ 210, OBJ 213, OBJ 216, OBJ 217, OBJ 218, OBJ 227, OBJ 229, OBJ 230, OBJ 231, OBJ 232, OBJ 237, OBJ 240, OBJ 241, OBJ 243, OBJ 246, OBJ 248, OBJ 249, OBJ 250, OBJ 252 & OBJ 258)
 3. Location of New Mossley Station (Objection received: OBJ 39, OBJ 49, OBJ 50, OBJ 57, OBJ 89, OBJ 111, OBJ 145, OBJ 182, OBJ 199). Please refer to Evidence of Emma Clarke in respect of the location of the new station [NR/PoE/EC/2.2]
 4. Car Parking and traffic along Manchester Rd (Objection received: OBJ 89, OBJ 107, OBJ 166, OBJ 169, OBJ 172, OBJ 180)
 5. Impact on properties due to the construction of the new Mossley Station (Objection Received: OBJ 27, OBJ 39, OBJ 66, OBJ 145, OBJ 180, OBJ 240, OBJ 249, OBJ 250, OBJ 252)
- 3.3.2 On consideration of the objections received, I believe it to be important to describe the construction issues, a summary of activities in relation to the new build of Mossley station, along with the decommissioning of the existing station. In this description, I will outline the measures to address the concerns and objections listed above.

3.4 Temporary Construction Access

- 3.4.1 The existing access off Manchester Road will be widened to facilitate the access and egress of site vehicles during construction. This will require the removal of a section of the existing retaining wall on Manchester Road. It is proposed to widen the access, primarily to the south of the existing gate, as there is a level difference between Manchester Road and the proposed site compound. This level difference is more pronounced to the north of the current access, making the southern location preferable as it minimises the extent of engineering work.

Currently, private vehicles park on both sides of Manchester Road at this location. The parked vehicles would restrict HGV and construction traffic to left-in, right-out only. It is proposed to implement a parking suspension of approximately 50m on both sides of Manchester Road, this suspension should extend beyond the temporary access as indicated in **Figure 3** below.

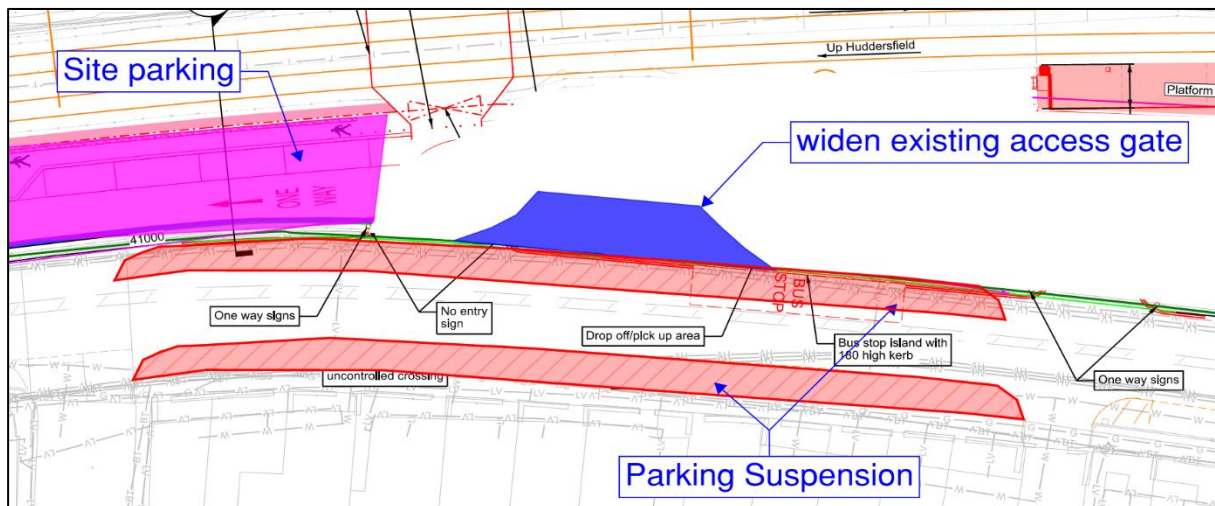


Figure 3- Temporary access off Manchester Road

- 3.4.2 The Brookfields Secondary Temporary Construction Area, located at the top of the slope on the Platform 2 side, is required to support construction of the station. Retention of the embankment within the Brookfields area is necessary to enable the safe construction and future operation of Platform 2.
- 3.4.3 Materials and excavated spoil will primarily be transported to and from the Secondary Temporary Construction Area by rail rather than by road. The area will also be accessed from the Manchester Road satellite compound via the temporary road-rail access point to be constructed as part of that compound. This avoids the need for HGV movements from the Secondary Temporary Construction Area. With this approach, the land area required in the Brookfields area is significantly reduced, as shown in the sketch below.
- 3.4.4 There will inevitably be occasions when access is required via the local road network, including Mill Lane and Archer Street. However, this part of the road network and the surrounding residential streets are not considered suitable for use by large construction plant or HGVs for material delivery or removal. It is anticipated that road access will therefore be limited to light vehicles, such as transit vans and pick-ups, as well as workforce access. There is no intention of any Temporary Traffic Regulation Orders (TTRO) being required, and only limited parking restrictions in the area of the lay-by on Spring Street.

- 3.4.5 On the staging diagram in section 10 there is an indication of a road closure of Mill Lane. Please note that this is limited to weekend nights for work at the rail level on the bridge parapet, rather than in relation to the station construction.
- 3.4.6 All access arrangements will be defined within the Traffic Management Plan. This will take full account of local school drop-off and pick-up periods and will recognise existing parking restrictions along Mill Lane, Archer Street and surrounding roads.
- 3.4.7 It is important to note that operations within the Brookfields area are very sequential and, as such, are not particularly labour- or plant-intensive. The bulk of material import and removal will occur via the temporary rail crossing; therefore, I can only envisage a labour force of 10-15 people at peak. This limits the amount of access required via Spring Street.
- 3.4.8 Another reason for requiring access via Spring Street and Archer Street is plant breakdowns (such as piling rigs or excavators) or emergencies that require access outside rail possession times, when the Brookfield compound cannot be accessed across the railway.
- 3.4.9 To provide safe access across the Brookfields area, a suitable temporary running surface will need to be installed and removed upon completion of the works. This surface is proposed to extend from the existing lay-by on the south side of Spring Street, along the existing path line across the Brookfields area, as illustrated in the accompanying sketch below. (Figure 4). This limits the amount of land used at Brookfields and therefore the amount of vegetation which will need to be removed. The area will be reinstated after construction has been completed.



Figure 4 Sketch showing the extent of land take (Red) and path access from Spring Street (Blue)

3.5 Access for All Footbridge with Lifts

- 3.5.1 New piled foundations are to be installed beneath the platform to support the new footbridge and lift shaft steelwork. Depending on the GI results, this may be reduced to shallow foundations. The lift shafts will be framed using rolled hollow steel sections and clad in brick until the footbridge deck level. Above the deck level, standing seam aluminium sheeting will be used. The footbridge superstructure is a modification of the Network Rail series 400 footbridge standard design, comprising of a flat deck (without canopy), staircases and Circular Hollow Section (CHS) support columns. The deck is a modified U-frame deck consisting of steel plates and stiffeners.

3.6 Platforms

Platform riser walls

- 3.6.1 Platforms 1 and 2 are to comprise of precast Z-unit riser walls supporting precast concrete copers on the rail side, each extending 150 m. These precast Z-unit riser walls will be supported on reinforced concrete footings.

Platform 1 back of platform wall

- 3.6.2 Platform 1 will require a rear back-of-platform retaining wall with a height varying from approximately 3 m at the low-millage end to 1.5 m at the high-millage end. The currently proposed wall is a precast concrete 'L' unit with stone-clad panels.

However, this will be fully designed during design development, once the ground investigation results are received.

Platform 2 back-of-platform retaining wall

- 3.6.3 The back of platform 2 retaining wall design is awaiting the receipt of GI before being fully developed. The main options considered for the retaining wall at this stage are a king-post retaining wall and a contiguous piled wall. The piles are located a substantial distance from nearby properties and are relatively short (6-7m) due to the area's geology. Piles will be installed by auguring rather than the 'driven' technique, which reduces noise and vibration.
- 3.6.4 An existing sewer runs along the crest of the cutting slope and is assumed to be approximately 3 m deep. At its nearest point, the sewer is approximately 5 m away from the platform 2 retaining wall. This will need to be confirmed before any works to the retaining wall commences.
- 3.6.5 The ground above the cutting slope is saturated and there is potential evidence of a spring. The water in this area is expected to flow downslope toward platform 2 and will require management. As illustrated on Figure 4, a crest drain is proposed in this area, but the required depth is unknown due to the lack of sufficient geotechnical information at this stage.

3.7 Additional Car Parking and Drainage

- 3.7.1 The proposed car park is to be located at the rear of platform 1 and will require excavating approximately 2 m down from the existing ground level to the proposed car park level. The excavation is anticipated to generate a significant volume of spoil, which will be transported off-site by road via Manchester Road, when rail transport is impractical.
- 3.7.2 Temporary works will be required to provide support for the excavation to prevent collapse. A permanent retaining wall will then be constructed at the rear of platform 1, in place of the temporary support. Traffic control on Manchester Road will be in place during this period to manage the traffic flow.
- 3.7.3 A positive surface water drainage system shall be installed for the station access loop and accessible parking, link road, station building and platforms. A Under Track Crossing (UTX) will be required from platform 2 to platform 1, to allow surface water from platform 2 to be discharged into the drainage system. This system requires attenuation and therefore, an additional excavation of approximately 1.5 m in depth is required below the access loop and accessible

car park for the proposed attenuation tank and bypass separator. In addition to the collector pipes, gullies and channel drains, the system requires an outfall into the wider water network. The outfall location, max flow rate and water quality standards are to be determined. The current outfall options are limited to either the United Utilities combined sewer or 1500 diameter culverted watercourse that outfalls to the River Tame. The tie-in point for both assets will be at the junction of Mill Lane and Manchester Road and will require lane closures on Manchester Road to install the required connection. Furthermore, a positive foul water drainage system shall be provided to the station building and outfall to a nearby combined sewer on the residential side of Manchester Road.

3.8 New Station Building and Waiting Shelters

- 3.8.1 A modular station building is proposed, consisting of steel frames and cladding. A crane is required for the lifting of steel beams and columns. The station building is proposed to be constructed after the car park is completed. Therefore, the crane may be positioned on the car park for lifting operations. Shallow foundations are proposed.

3.9 Mechanical, Electrical and Plumbing (MEP), Station Information and Security System (SISS), Telecoms Works and High Voltage substation

- 3.9.1 The station will need both standard and emergency lighting for Platform 1 and 2, as well as all access and egress points, including the footbridge, lifts and secondary means of escape. New Telecoms assets, including CCTV, Public announcement, and Customer information systems, will also be provided on the platforms, the new footbridge, and all egress routes, as required. The proposed station building will require telecoms connections in addition to a power supply.
- 3.9.2 Furthermore, the car park and the link road to the existing station will require lighting and CCTV.

3.10 Deconstruction at Existing Station

Removal of existing footbridge

- 3.10.1 The existing station footbridge MVL3/14 footbridge needs to be removed due to a lack of clearance with the proposed OLE. Before demolition, a thorough inspection and assessment of the footbridge must be conducted to develop a detailed deconstruction plan. Suitable lifting and cutting points should be identified to ensure safe and efficient removal. It is anticipated that a 300t crane

will be positioned on Manchester Road at the existing station entrance to lift the main span out, which will require a temporary road closure (see table 3.1). Additionally, the new station must be commissioned before the footbridge can be demolished.

Proposed deconstruction sequence:

1. Remove electrical ducts and wiring
2. Install access scaffolding to gain safe access to the bridge deck and support brackets. Install the lifting tackle close to the brackets.
3. Move the crane into position on Manchester Road (requires road closure) and set up for deck span lift.
4. Support the bridge deck span on a crane, secure with guy ropes, and remove the deck span support brackets.
5. Lift out bridge deck span and lay down on special delivery vehicle waiting on Manchester Road.
6. Demolish staircase on platform 2 side, followed by removal of rubble from site.
7. Seal the opening to the removed footbridge from the existing station building.

Coper & platforms

- 3.10.2 The existing platforms will need to be partially demolished. The existing copers and oversail blocks are to be cut back to the face of the riser wall. The surfacing shall then be made good with asphalt or paving slabs to prevent water ingress and maintain the durability of the remaining platform. This work can only be carried out during rail possession and will take place after the new station has opened.
- 3.10.3 As maintenance access will be restricted, the waiting shelter roof and cast-iron columns are to be removed. The architectural features of the waiting shelter, cornice stones and cast-iron columns, shall be taken down with care to allow reuse.

3.11 Site Setup

Site Compound & Storage

- 3.11.1 Given the scope of work and the restricted space available on-site, multiple site compounds are proposed. The local welfare facilities and offices will be positioned along the pathway between the existing car park and the new station. Due to limited vehicle parking space, it is proposed that staff parking be provided at the R. Plevin & Sons site compound, which is approximately a five-minute drive from the site. A bus service is envisaged to transport staff between the parking area and the site, thereby preventing construction staff vehicles from parking on or adjacent to the site.
- 3.11.2 An alternative option was considered to allow parking along the pathway between the existing car park and the new station. However, this would require early relocation of the Mossley electrical distribution equipment before the installation of the new substation and LV cables to feed power to the station rail equipment. This approach is not feasible, as relocating the equipment early would render it inoperable until the LV cable is installed later in the sequence, thereby compromising railway operations.
- 3.11.3 If parking at R. Plevin & Sons compound were not available, an alternative approach was considered which would provide the LV supply earlier in the construction sequence. This would require coring through the Manchester retaining wall near the HV substation and routing the LV cables through the wall. However, this option is not preferred due to the significant level difference on either side of the retaining wall, which would necessitate constructing a deep chamber to accommodate the cable transition.
- 3.11.4 The option of using land on Queen Street as an extended compound was also considered; however, the route was deemed unsuitable for HGVs and was therefore not preferred.

Construction

3.11.5 The top of the slope on the Platform 2 side can be utilised for storage; however, the only access to this would be via a rail crossing and steep ramp (ref Figure 5 below).

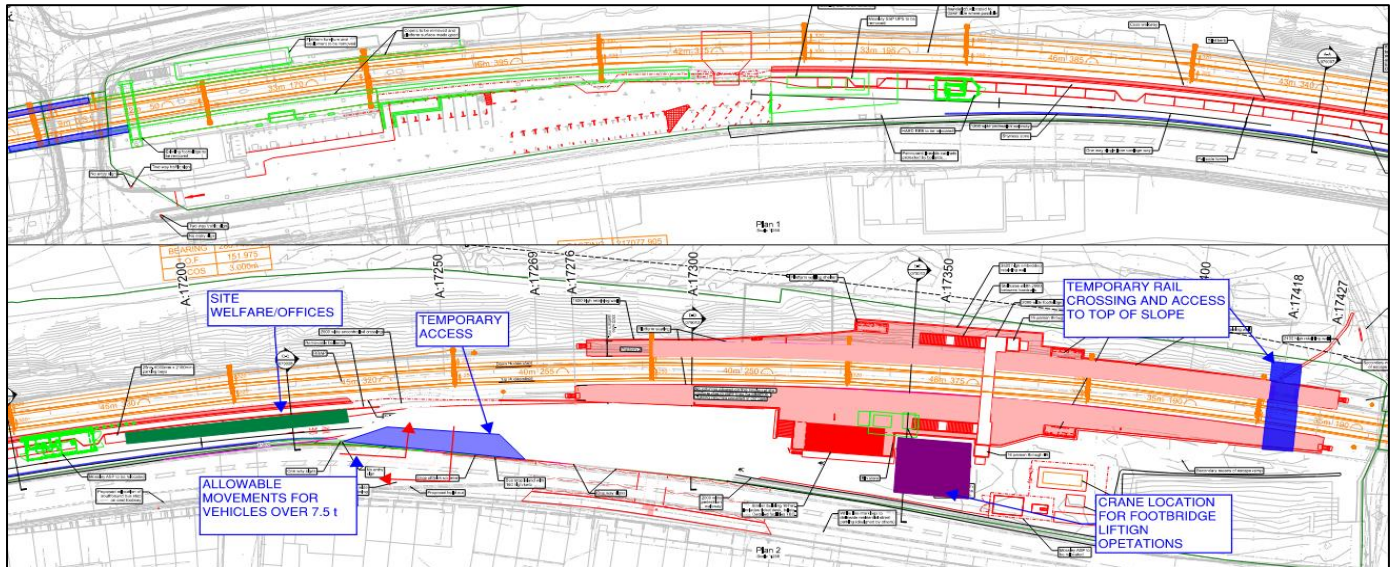


Figure 5 - Temporary Rail Crossing

3.11.6 Additionally, access to this location will become restricted after the construction of the footbridge lift shaft on platform 1. It will not be feasible once Platform 2 secondary means of escape is complete.

Road Rail Access Point (RRAP)

3.11.7 A permanent RRAP will be installed south of the proposed station, at the interface of the existing carpark and link road to support ongoing operations. In addition, a temporary access point will be provided to the north, serving as a rail crossing. The RRAPs indicated on Figure 6 would facilitate the construction of platform 2 retaining wall, crest drain and platform 1 and 2 riser walls

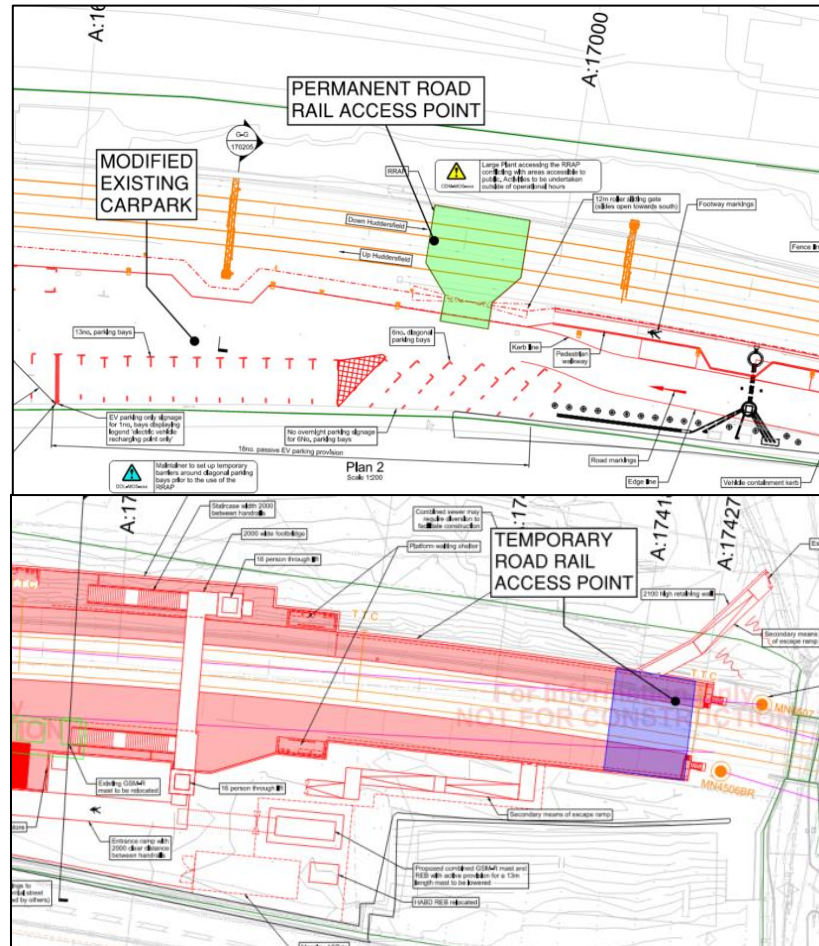


Figure 6 Road Rail Access points

3.12 Possession Strategy

3.12.1 The possession strategy for Mossley Station has not been finalised yet and will need to be integrated with the wider scheme works. This document has assumed minimum disruptive possessions and utilises working under ROR (Rules of the Route which are usually mid-week and weekend maintenance times) where possible. There is an opportunity to gain time and cost efficiencies by utilising the wider disruptive possession planned for the TRU W2 works. It is assumed that disruptive possessions will occur during 52-hour weekend possessions, which are usually weekend closures of the railway.

3.13 Outline Construction Methodology Summary

3.13.1 The following is an overview of civil and MEP construction tasks planned for each of the five proposed construction phases. Rail related activities not involving the station, such as Track, S&T, and Lineside civil works, are also scheduled during these periods but are addressed separately and not included in the lists below.

Stage 1 – Normal working hours - Site preparation

Off-track works with ROR Track access.

1. Set up of Vortok fencing.
2. Installation of permanent RRAP.
3. Establish site compound, including temporary site cabins, site parking, and access junction. (Parking will not be available within the site compounds; it will be provided at a nearby location instead.)
4. Site clearance – removal of redundant material and de-vegetation.
5. Construction of an access road and piling platform.
6. Installation of temporary sheet piles at platform 1 side.
7. Installation of temporary Road Rail Access point
8. Create a working platform to track level on platform 2 side.

Stage 2 – Core possessions 1

On-track works during Rules of the Route and 54-hour weekend possessions.

1. Installation of platform 2 retaining walls, and excavation on the trackside of the retaining wall.
2. Installation of 3 no. under-track crossing.

Stage 3 Between disruptive possessions normal working hours supplemented with On-track works with mid-week possessions

1. Establish access onto the embankment for regrade via temporary RRAP.
2. Regrade slope on platform 2 side.

Construction

3. Excavate carpark area, replace temporary retaining wall on platform 1 side with permanent retaining wall.
4. Install platform 2 lift pits.
5. Install platform 2 riser wall & back fill behind the riser wall.
6. Install platform 2 secondary means of escape and remove access to platform 2 embankment and temporary Road Rail Access Point
7. Install the Crest drain on embankment as piling platform is being removed.
8. Establish foundations and riser walls for platform 1 and backfill working from the high millage end.
9. Install Platform 1 lift pit/foundation.

Step 4 –Disruptive Possession 2

29hr possession.

1. Install Lift Shafts, and footbridge/stairway trestles.

Step 5 – Core possession 2

On-track works with mid-week possessions.

1. Install platform 2 surfacing, copers and tactiles.
2. Install platform 1 surfacing, copers and tactiles.
3. Install platform 1 secondary means of escape.

Stage 5 – Finishing works

Off-track works with lane closures on Manchester Road to allow utilities connections

1. Construction of station building on platform 1 side, steel modular type building with concrete raft foundation. Installation of station building cladding.
Installation of Electrical and telecoms equipment.
2. Install car park surfacing, including drainage, kerbing and fencing.
3. Remove site establishment & set up one way system through existing station car park.
4. Commission station.

Stage 6. Deconstruction of assets at the existing station

On-track works with ROR Possession and full closure of Manchester Road Junction for Crane deployment

1. Re wiring and removal of MEP equipment.
2. Removal of copers and partial deconstruction of platforms.
3. Deconstruction of existing footbridge, mobile crane and buggies to be utilised.

At this stage, it is envisaged that RoR possession is utilised; however, the option of completing the works whilst adjacent blockades of possessions are in place will be a consideration.

3.14 Transportation Considerations

3.14.1 Site deliveries will travel by road to be unloaded at the site compound or storage areas. It is expected that, during construction, 40 HGV deliveries per day, equating to 2-3 per hour, will be required for spoil removal during peak excavation activities, which will last for 4-6 weeks, along with 20 private vehicles for construction workers arriving and leaving once per day. As explained above, HGV movements will be from via Manchester Road and not through the secondary temporary construction compound at Brookfields. The M60 and M62 are the primary motorways that can be used to reach Mossley. The details will be agreed with the highways authority via a CTMP which is a condition imposed on the scheme requiring authority approval. For further information, I refer to the proof of evidence of Chris Cary. [NR/PoE/CC/5.2]

3.15 Temporary Works

Access to the Down Track Cutting Slope

3.15.1 A temporary ramp is proposed at the high-mileage end of the station, through Brookfields. This ramp will provide access to the top of the slope on the platform 2 side, thereby enabling work on this side of the platform. This includes the construction of the footbridge, platforms, and the retaining wall for platform 2. Additionally, the access ramp will enable expansion of the site compound by providing access to the top of the slope.

3.15.2 It is important to note that regrading of the slope may be necessary to achieve a suitable gradient for the access ramp. Based on a review of the slope topography at this location, a 1V:4H slope would be sufficient to facilitate access and minimise the extent of regrading works required; see Figure 12-- 1. The

proposed access ramp will only be suitable for tracked plant. If larger plant or vehicles are required, then a more gradual ramp could be constructed by changing the orientation to be parallel to the tracks and installing a temporary retaining wall, similar to the piling platform shown in Figure 7. However, the access will still be restricted due to the limited space for turning circles.

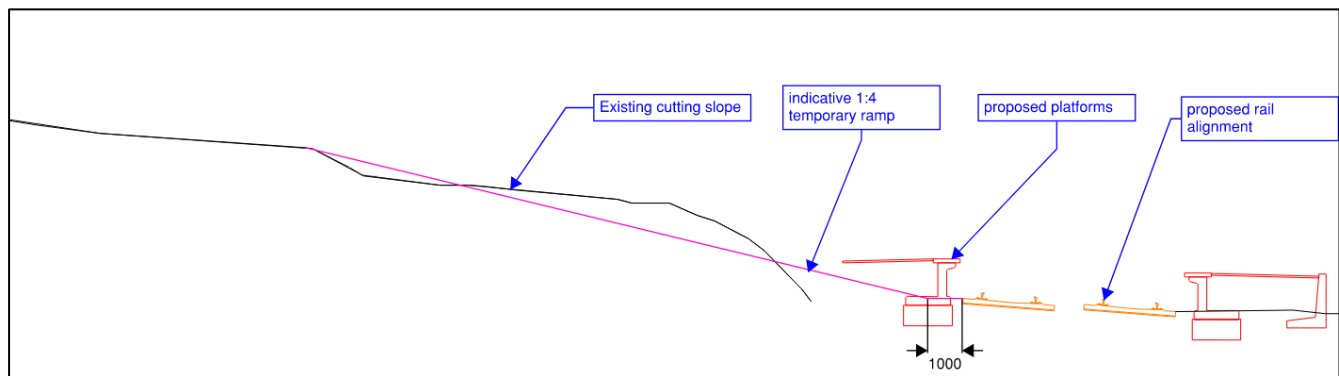


Figure 7 Indicative access ramp on Down track cutting slope

3.16 Platform 2 Retaining Wall

Embedded retaining wall requirements

- 3.16.1 Installation of an embedded retaining wall alongside platform 2 would require a working platform in areas where piles cannot be installed from a rail-mounted vehicle (i.e. in areas where there is insufficient reach). In some areas, where there is sufficient space between the toe of the slope and the running rail. However, along a large portion of the site extents, this is unlikely to be feasible and therefore additional measures, such as building up of a working platform on the existing cutting slope, will be required, see Figure 8 for indicative arrangement. Installation will be undertaken during rail possession and supplemented by the temporary rail access point at the north end of the proposed station. Undertaking the work in this method removes the requirement to utilise Mill Lane, Archer Street with heavy plant and deliveries.
- 3.16.2 Removal will again be by means of the temporary access point, and as much material as possible will be removed by rail transport.

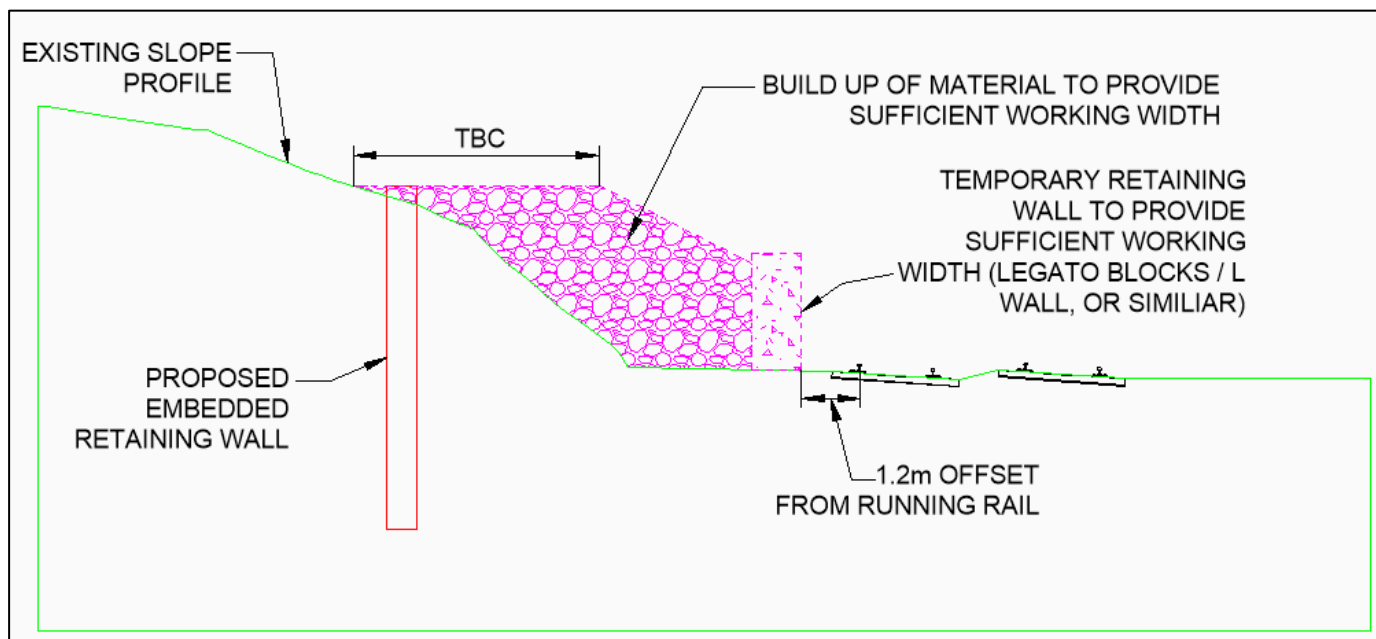


Figure 8 Indicative piling platform for platform 2 retaining wall

3.17 Footbridge Temporary Works

Plant and crane requirements

- 3.17.1 The staircase consists of two flights of 18 steps and has an approximate weight of 8 tonnes per staircase. The main span of the footbridge is 16 m, resulting in a lift weight of approximately 10 tonnes.
- 3.17.2 Each lift shaft can be erected as one complete unit, provided each shaft can be preassembled before delivery to the site.
- 3.17.3 The footbridge components (stairs, deck and lifts) will be lifted by a crane positioned within the site compound. It is envisaged that the various elements of the footbridge will be prefabricated before delivery to the site. The crane will then lift each element from the delivery vehicle on Manchester Road into its final position, and so a temporary road/lane closure will be required for this operation.

Temporary support for lift pits

- 3.17.4 Depending on the lift drive selected the lift pit will require an excavation of between 1.5- 2.5 m deep and approximately 700 mm away from the platform

2 retaining wall. Temporary works are required to facilitate the construction of this element. Temporary support may be provided via sheet piles installed prior to excavation or through utilisation of top-down construction techniques.

3.18 Car Park Excavation Temporary Works

3.18.1 Excavation for the proposed car park is planned to commence from the rear of Platform 1. The finished car park level will be approximately 2 metres below the existing ground level, with an additional excavation depth of around 1.5 metres required for the installation of an attenuation tank. To retain the ground behind Platform 1, it is proposed to install contiguous piled walls as a permanent design. These piles again will be installed by auguring and will be relatively shallow and will form the rear retaining wall of the platform. A temporary working platform will be required to facilitate the installation of the contiguous piles. Refer to Figure 9 for the indicative proposal.

3.18.2 The excavation will uncover the existing masonry Manchester Road retaining wall. This wall will need to be supported during the excavation and inspected and assessed for stability once it is visible. It is worth noting that extensive monitoring of existing assets, including local properties, will be in place at all times during the construction of the car park and station.

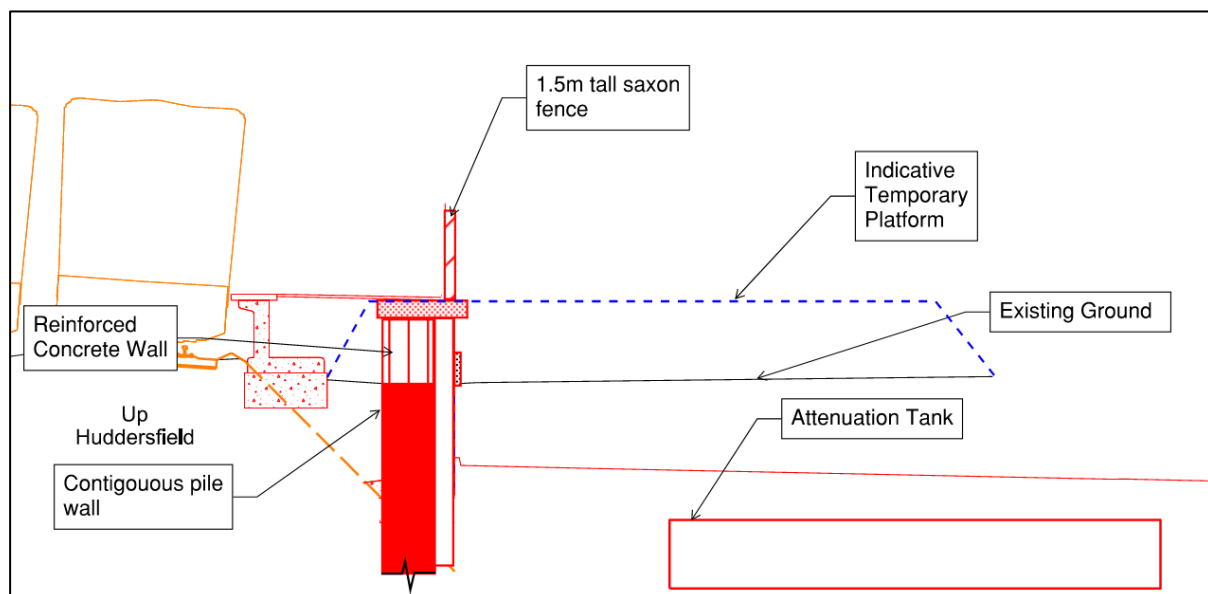


Figure 9 Indicative temporary works for platform 1 back of platform wall

Temporary Traffic Management

3.18.3 Traffic management will need to be provided at the site for various activities. The expected traffic management required for each activity is listed below in Table 3-1.

Table 3-1: Indicative traffic management requirements

Activity	Traffic Management required
Construction of temporary access.	Manchester Road partial northbound lane closure with temporary signals.
Delivery and lifting of footbridge components (incl. lifts).	Full road closure and parking suspension of Manchester Road between Queen Street and Mill Lane.
Drainage connection into outfall.	Manchester Road partial northbound lane closure with temporary signals.
Construction of permanent access.	Manchester Road partial northbound lane closure with temporary signals.
Demolition of existing footbridge.	Full road closure of Manchester Road at Stamford Road Junction.
Change of use of existing access.	Temporary signals at the Manchester Road and Stamford Road Junction.
Access and Egress of HGVs into the site compound.	Parking suspension on both sides of Manchester Road. > This equates to 50m length on each side of the road. The intention is to keep the parking suspension in place for the full construction period on the 'rail' side of Manchester Road, but only for peak periods on the residents' side.

3.19 Site Constraints- Mossley Station

Maintaining Station Operations

3.19.1 The planning of the construction works should seek to cause minimal disruption to the normal day-to-day operations at Mossley station. The existing

station will only be decommissioned after the relocated station has been commissioned and in use.

Residential Properties

3.19.2 A residential area is located opposite the proposed station site, with properties lining Manchester Road. This presents certain constraints that must be carefully considered. For example, residents currently rely on on-street parking outside their homes, where no formal parking restrictions exist. This reduces the road width, potentially complicating the delivery of the footbridge components. As previously mentioned, temporary parking suspensions may be necessary to facilitate these deliveries and the lifting operations.

3.19.3 In considering the management of environmental disturbance during the works, I refer to the proof of evidence of Jim Pearson.

Invasive Species

3.19.4 In consideration of ecological constraints, I refer to the proof of evidence of Will Horlock. [NR/PoE/WH/7.2].

Environmental and Ecological Constraints

3.19.5 In consideration of ecological and environmental constraints, I refer to the proof of evidence of Will Horlock [NR/PoE/WH/7.2] and Jim Pearson. [NR/PoE/JP/4.2]

3.20 Summary

3.20.1 In summary, the objections have been addressed within the construction methodology as follows: -

3.20.2 Use of Mill Lane and Archer Street for construction Access: Primarily, the construction east of Platform 2 and within the temporary land required to construct the platform will be accessed by means of Manchester Road and across a temporary track access point. There will be a need to access the secondary compound in Brookfields through these areas for smaller construction vehicles, but this will be agreed and documented in the construction traffic management plan (refer to sections 6.2 12.1, 12.2)

3.20.3 Use of Brookfields for compound and construction access

The construction of the drainage and embedded retaining wall has been described in the methodology and designed to accommodate construction access via Manchester Road and a temporary crossing. The drainage and retaining wall will undoubtedly improve the existing area which has had evidence of embankment movement previously. There is a requirement to acquire temporary land of 10m width to construct the embedded retaining wall, drainage and regrade of the embankment. (REF sections 3.4.2-9, 3.15.1-6)

3.20.4 Location of New Mossley Station: Please see the Proof of Evidence of Emma Clarke. [NR/PoE/EC/2.2]

3.20.5 Car Parking and traffic along Manchester Rd

The construction of the new Mossley station will predominantly use Manchester Road, which will involve a number of parking restrictions, night lane/full closures and traffic management to control the flow of traffic. The proposals are highlighted above and will be included in the traffic management plan. (Refer to sections (3.11,3.13, 3.14,3.15,3.16)

3.20.6 Impact on properties due to the construction of the new Mossley Station. Please refer to Design PoE of Emma Clarke [NR/PoE/EC/2.2]

As I have stated in sections 3.13 and 3.15, there is a requirement to install concrete piles for either the permanent works or temporary supports. The design is not yet complete, but the geology indicates that any piles will be shallow and installed by auguring rather than the higher-impact driven piles. Given their location and depth, I believe these works are far outside the zone of influence and any adjacent structure. Auguring techniques are chosen based on both the ground conditions and the need to eliminate impact noise and vibration associated with driven piling.

Nevertheless, during the works, a continual monitoring system will be in place both pre-construction and during construction to ensure there is no detrimental effect.

4. CONSTRUCTION – MOORGATE HALT FOOTBRIDGE

4.1 Introduction

- 4.1.1 Moorgate Halt level crossing is a passive crossing which conveys a public footpath (209 SADD). The crossing is currently closed under a Temporary Traffic Regulation Order. The closure of Moorgate Halt level crossing is discussed in detail in the proofs of Jerry Greenwood, James Doodson, and Lee Barraclough.



Figure 10 Moorgate Halt Existing Crossing

4.2 Objections

4.2.1 There have been a significant number of objections (Objections received: OBJ 02, OBJ 03, OBJ 04, OBJ 05, OBJ 07, OBJ 08, OBJ 09, OBJ 10, OBJ 11, OBJ 14, OBJ 15, OBJ 16, OBJ 17, OBJ 18, OBJ 19, OBJ 20, OBJ 21, OBJ 22, OBJ 23, OBJ 24, OBJ 25, OBJ 26, OBJ 28, OBJ 31, OBJ 32, OBJ 33, OBJ 36, OBJ 37, OBJ 38, OBJ 40, OBJ 47, OBJ 48, OBJ 51, OBJ 53, OBJ 55, OBJ 56, OBJ 59, OBJ 62, OBJ 63, OBJ 64, OBJ 73, OBJ 74, OBJ 109, OBJ 118, OBJ 126, OBJ 147, OBJ 148, OBJ 161, OBJ 167, OBJ 181, OBJ 186, OBJ 192, OBJ 193, OBJ 198, OBJ 204, OBJ 212, OBJ 219, OBJ 223, OBJ 224, OBJ 235, OBJ 251, OBJ 260, OBJ 60, OBJ 61, OBJ 69, OBJ 93, OBJ 134, OBJ 159, OBJ 160, OBJ 215, OBJ 259, OBJ 29, OBJ 30, OBJ 41, OBJ 46, OBJ 52, OBJ 42, OBJ 45, OBJ 158, OBJ 208, OBJ 188, OBJ 58, OBJ 91, OBJ 70, OBJ 173, OBJ 183, OBJ 253, OBJ 206, OBJ 247, OBJ 168, OBJ 162, OBJ 170, OBJ 112, OBJ 121, OBJ 122, OBJ 149, OBJ 163, OBJ 54, OBJ 209, OBJ 06, OBJ 137, OBJ 140, OBJ 177, OBJ 190, OBJ 236, OBJ 65, OBJ 133, OBJ 139, OBJ 239, OBJ 43, OBJ 44, OBJ 83, OBJ 238, OBJ 154, OBJ 130, OBJ 87, OBJ 165, OBJ 205, OBJ 117, OBJ 221) regarding the proposed closure of Moorgate Halt Level Crossing associated with:-

- No provision of a pedestrian footbridge to retain the crossing
- Alternative footpath improvements

4.2.2 The reasoning behind the decision for no provision of a footbridge is based on the increasing cost, as described by Lee Barraclough. This proof of evidence explains the reason why the construction of the footbridge has been assessed in the manner which leads to the increased estimate.

4.3 Proposed Design

4.3.1 Due to the location and constraints along with track geometry the design concept of a pedestrian footbridge would be comprised of bored piles and concrete foundations, a precast concrete raised walkway and a steel superstructure. The footbridge would consist of a weathering-steel-modified LMZ footbridge and steel staircases with 1.8m-high solid parapets. Please refer to Lee Barraclough's Proof of Evidence. [NR/PoE/LB/11.2]

4.3.2 The alignment of the footbridge would be the best compromise between consenting issues generated by increased land take and increased construction effort, and the challenge if the land take were to be constrained and the buildability. The in-span steps and the geometry of a landing at the

west end enable the footbridge to provide compliant OLE clearance and tie into the footpath ahead of the NR land boundary. It also ensures the foundation positions for the bridge are accessible for the construction team.

- 4.3.3 On the east side, the footbridge supports would be located within the 4.5m derailment hazard zone from the nearest Up Huddersfield line. The proposed solution to mitigate this risk would be to provide a raised platform that protects the bridge supports.
- 4.3.4 On the east side, piled foundations have been chosen due to ground conditions identified in window samples and boreholes.
- 4.3.5 On the west side a shallow foundation founded on mass concrete strips (to be installed in a hit-and-miss sequence) would be proposed for buildability and cost effectiveness. The solution to the west side will be cognisant of the adjacent retaining wall and minimise disturbance during construction.
- 4.3.6 On the east side, temporary works comprising in situ reinforced concrete strip foundations beneath the raised platform would provide the necessary arrangement in the temporary condition when the adjacent Up Huddersfield line is open to rail traffic and the ground is excavated to construct the pile caps.
- 4.3.7 Bored piles are proposed for the east side footbridge foundations. This pile type has been selected due to site constraints and the available pile rig size. The piles are to be cased with embedment into rock.
- 4.3.8 Due to the proximity of the structure to the running rail, a significantly reinforced concrete raised platform would have to be constructed to protect in the event of a train derailment.
- 4.3.9 Alongside the main structure, there would be supporting elements of work such as fencing, approach footpaths and reinstatement of existing boundary features.

4.4 Construction

- 4.4.1 The primary consideration for the construction methodology is that of access. At this location, there is no suitable or safe access for plant and materials from either the east or the west.
- 4.4.2 On the east side, Moorgate Street is unsuitable for plant access, such as cranes, excavators, etc., and is too far away from the proposed location.

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- 4.4.3 On the west side, a similar issue exists as Ladcastle Road and Dark Lane are not suitable and are again too far away from the location to be able to service the construction activities needed.
- 4.4.4 There is no third-party land suitable at the location for access or plant/material delivery
- 4.4.5 Along with the above items, the geography of the area means that the only practical and safe method of construction is to access all of the build via Rail from the nearest rail access point (near Greenfield station). On determining this mode of operation, the estimate must take due cognisance of the constraints that this incurs, such as: -
1. All activities are undertaken in track possession or blockade
 2. All activities incur an inefficiency associated with operating rail plant
 3. Access and egress will be via a road-rail access point at Greenfield Station. Note that Rail operated plant only travels at walking pace.
 4. Works within a weekend or blockade have to accommodate other works happening along the line of route, for example, the passing of engineering trains.
 5. All operatives need to have rail accreditation and be supervised by Rail safety staff
 6. The road Rail access point has to be made suitable for the loading and unloading of structural steel and precast units.
 7. Schedule 4 or possession costs will be required as part of the estimate
 8. The risk associated with rail access is always substantially higher than that of 'high street' environment build.
 9. Programme prolongation due to the frequency of access availability

4.5 Key Activities

- Production of bespoke precast concrete retaining wall sections
- Production of weathering steel footbridge – manufactured off-site
- Site clearance and removal of existing level crossing

- Bored piling for footbridge foundations. Note that due to the constraints of the working area, the duration of the piling activities will be less than the normal outputs
- Crop piles and construct reinforced concrete pile caps.
- Excavate and cast in-situ concrete to foundations.
- Track monitoring and handback- Note that track geometry must be checked when handing back to operational traffic each time works are undertaken in the track support zone.
- Install precast units to create raised platform along with associated temporary works
- Import fill to the raised platform
- In-situ concrete steps to the west elevation, along with associated temporary works
- Lifting of steel footbridge and staircases into position.
- Stone cladding to wall.
- Fencing and handrailing.
- Bond out steelwork
- Securing Planning Permission for the Footbridge.

4.6 Access

- 4.6.1 For estimating purposes, I believe the safest and most efficient method would be to utilise a 16-day blockade to undertake the groundworks, including piling, precast installation, in situ concrete, etc., followed by 2 weekend possessions for footbridge steelwork and staircase installation and several RoR to complete stone cladding access, etc. Utilising the blockade would eliminate the need to mobilise/demobilise every day/night but would need to take cognisance of other track movements within the blockade, such as Engineering trains. There would always be a risk that a blockade may not be granted, or that other works may not be suitable. In this case, weekends and nighttime possessions would have to be secured.

4.7 Summary

- 4.7.1 In order to summarise the cost associated with the constraints highlighted above, the optimum method of estimating would be to base the cost on a schedule of rates based on benchmarks from other projects. Additions to this would be the works to improve the Rail Access Point and subsequent removal, along with the associated design. Preliminaries and items, such as Risk, should again be based on benchmark rates. A cost estimate has been prepared and is addressed in Lee Barraclough's Proof of Evidence [NR/PoE/LB/11.2].

5. CONSTRUCTION - OLDHAM ROAD AND PEDESTRIAN FOOTBRIDGE

5.1 Introduction

5.1.1 The existing overbridge structure MVL3/28 is a Grade II listed single skew span stone arch with stone spandrel and parapets, located adjacent to Greenfield Station. The existing overbridge superstructure is to be reconstructed, as it lacks sufficient headroom to meet the required vertical clearance for electrification. In addition to the overbridge reconstruction, a separate public footway footbridge MVL2/27B will be constructed on the LM side, approximately where the existing station platform footbridge is. This footbridge allows for a single-stage diversion of all utilities and provides a permanent, separated footway over the railway. A ramp structure to connect the footbridge to Shaw Hall Bank Road, and a retaining wall between the proposed OB and FB on the down side are required to create an upper landing area, complete the footway route and provide acceptable gradients.

5.1.2 There are station works proposed (outside the scope of this structure), which include the removal of the existing station footbridge and the construction of a new station footbridge at the LM end of the station. These station works are planned and required to be prior to the works at this structure MVL3/28.

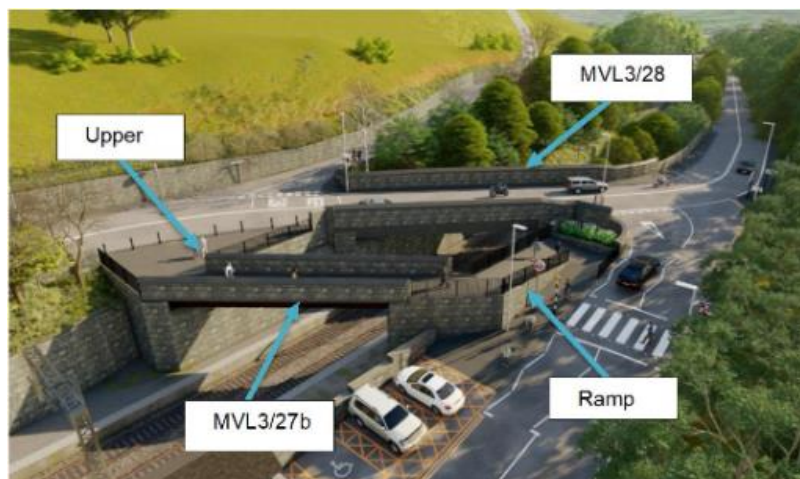


Figure 11 Visualisation of the proposed overbridge and pedestrian footbridge

5.2 Objections:

5.2.1 The main objections to be considered are related to the time of closure of Oldham Road to undertake demolition and build of overbridge MVL3/28 (Objections received: REP 03, REP 04, REP 06, REP 10). These include :-

- Impacts on highways and emergency services
- Impacts on the local community and businesses and night-time working

5.2.2 In order to fully address and prove mitigation measures again, I believe it is important to describe the construction and especially the statutory undertakers' strategy for diverting the services from the existing overbridge to the new pedestrian footbridge.

5.3 Constraints overview

5.3.1 MVL3/28 and Greenfield Station are constrained by challenging topography, situated at a natural junction of several roads interfacing with the railway, with significant gradients on Ladcastle Road and Shaw Hall Bank Road. There are several existing retaining walls along Oldham Road, which if interfaced with, would significantly increase the scope of works. Numerous utilities over the existing deck and at the junction of Oldham Road and Shaw Hall Bank Road need to be diverted. A single-stage diversion is proposed, as additional movements would be costly and disruptive. A pedestrian bridge over the railway at Oldham Road, access to the station, and operational lengths of the platforms must be maintained throughout the works.

5.3.2 The staging of the works is a major constraint within the design and is critical to ensure minimal disruption to the road network. A significant amount of consultation with the local council, utility companies, and Historic England has been carried out to agree the proposed works and sequencing specifically. The station works, critically, require the removal of the existing station footbridge MVL3/27a prior to any works detailed in this section. The installation of the footbridge MVL3/27b, retaining wall and ramp follows. This allows the utilities to be diverted into the footbridge in a single stage. Lastly, a period after the utility works have been completed, in a separate possession, the reconstruction of MVL3/28 can be carried out

5.4 Statutory Undertakers

5.4.1 A key part to the design and construction strategy revolves around the strategy for diverting the services before demolition of the overbridge. The service diversions also drive the amount of time needed for the closure of Oldham Road and hence the disruption.

5.4.2 The overbridge currently contains a 200mm diameter cast iron water pipe, a 75mm cast iron low-pressure Cadent Gas pipe, one HV cable, two LV cables, and one BT cable. The proposal is to divert these services, along with one

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overhead cable, into the new footbridge as part of a single-stage diversion. Cadent Gas has confirmed that their asset will be safely removed and set back from the overbridge before any proposed works are undertaken.

- 5.4.3 To establish the requirements for each asset, feedback from the utility asset owners was reviewed alongside NJUG Guidelines "The Positioning and Colour Coding of Underground Utilities' Apparatus" Volume 1, Issue 8, and Openreach Specification "LN550 for Underground Duct Laying and Associated Works." These documents define requirements for depth of cover, surfacing, spacing between assets, bend radius restrictions, and gradient limitations. Each asset owner also confirmed the minimum duct size requirements within the footbridge deck and any necessary passive provisions for future work. These requirements have all been accounted for in the positioning and routes of the proposed utilities.

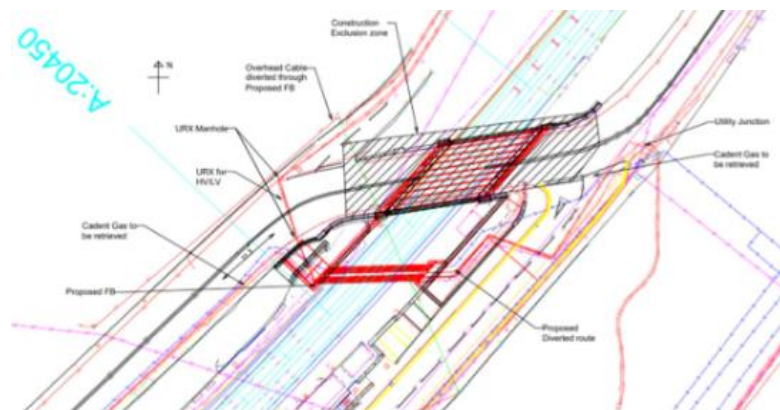


Figure 12 MVL3/28 Utility Diversion Plan

- 5.4.4 An indicative construction zone has been established in which proposed service locations must stay clear of to avoid interacting with the demolition and reconstruction works for MVL3/28. Services moved within this area risk additional temporary works and or additional stages of service movements. This accounts for envisaged excavations during the demolition of the existing OB. Proposed utilities have also been positioned to minimise road closures and utilise only lane closures where possible. Any significant changes to utility positions must be reviewed at ES5 for potential knock-on effects.
- 5.4.5 To accommodate the diversion of the HV/LV cables from Ladcastle Road, as well as the overhead cable currently positioned on a post, a URX (Under Road Crossing) is proposed at the western end of the overbridge, with access

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chambers located on either side of the road. These advanced works will reduce the road closures required when utility movements occur.

5.4.6 Ducting for the Water and BT utilities will also be installed on both sides of the proposed footbridge in preparation for the upcoming overbridge works. The ducts on the Upside of the proposed footbridge will follow the route of the proposed ramp until sufficient cover is achieved, at which point the utilities cut across Shaw Hall Bank Road to rejoin their existing connection points at the utility junction. Note this junction is very congested, and there is a risk of local movement along the road and on the embankment being required to accommodate the utility movements. These utility enabling works are expected to require lane or road closures (refer to activity breakdown later in this section of the report). Only the utility movements are to be carried out by the respective utility asset owners.

5.4.7 Utility asset owners have confirmed the feasibility of the proposed utility diversion plan.

5.4.8 A cross-section of the footbridge, shown below highlighting service diversion locations.

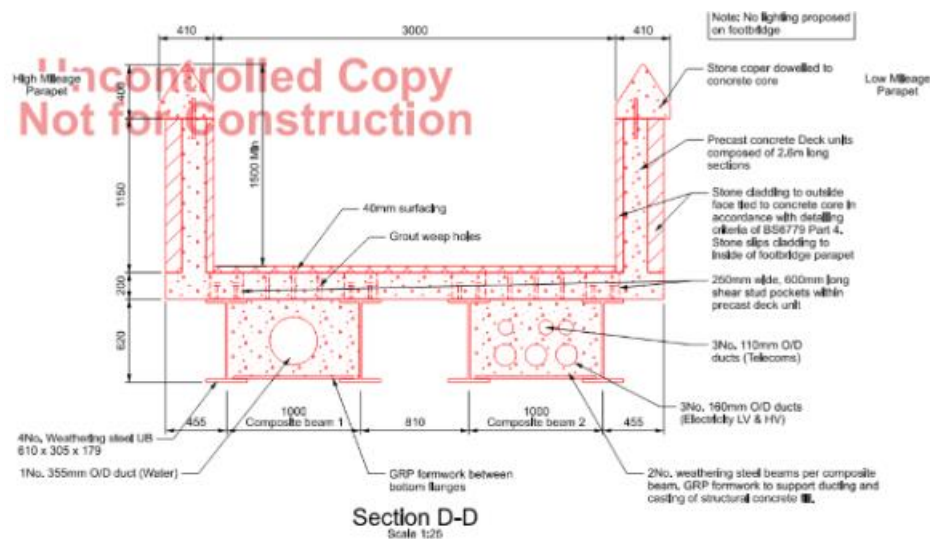


Figure 13 MVL3/27b Proposed Section

5.4.9 Adopting this approach results in utilities being relocated once and does not have the impact on extended reinstatement of the new overbridge post demolition.

5.4.10 Pedestrian access will generally be maintained over the railway by the staging of the works and construction of the new pedestrian bridge. However, during construction-intensive periods, it will not be safe for public access into the area. This applies to the ROTR works (overnight) and specific short durations for critical lifting of beams during the main possession to reconstruct MVL3/28, the pedestrian diversion will be approximately 13-minutes via MVL3/26. Refer to activity breakdown for details. Note as this diversion uses the MVL3/26 underbridge, so the sequencing of the works will need to be coordinated with works to that structure.

5.5 Construction Activities

5.5.1 The table below shows the construction activities along with the proposed closures required. In terms of the main closure (17 weeks) of Oldham Road, I believe it is important to highlight the following points:-

1. Due to the constraints and, probably more importantly, the geography of the area, the safest and most certain method of demolition and installation of Bridge deck members is by the use of a Rail Crane (KIROW) within a rail blockade (see below).
2. The programme for the road closure allows a period either side of the rail blockade for enabling and subsequently reinstating. Because the services are being relocated across the new footbridge, the risk of extended reinstatement periods due to reliance on service providers is eliminated.
3. The period leading up to the blockade must be certain as the risk of delay or missing the blockade date would have a detrimental impact on the programme. It is not a simple matter of moving or re-booking a major closure of the railway line and could be some considerable time period before access is available.
4. Alternative crane locations or types of demolition/lifting have been considered and discounted due to location, geography, ground conditions and temporary works requirements.

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5.5.2 The elevation of the new structure, indicating the existing arch and the proposed new overbridge is shown below

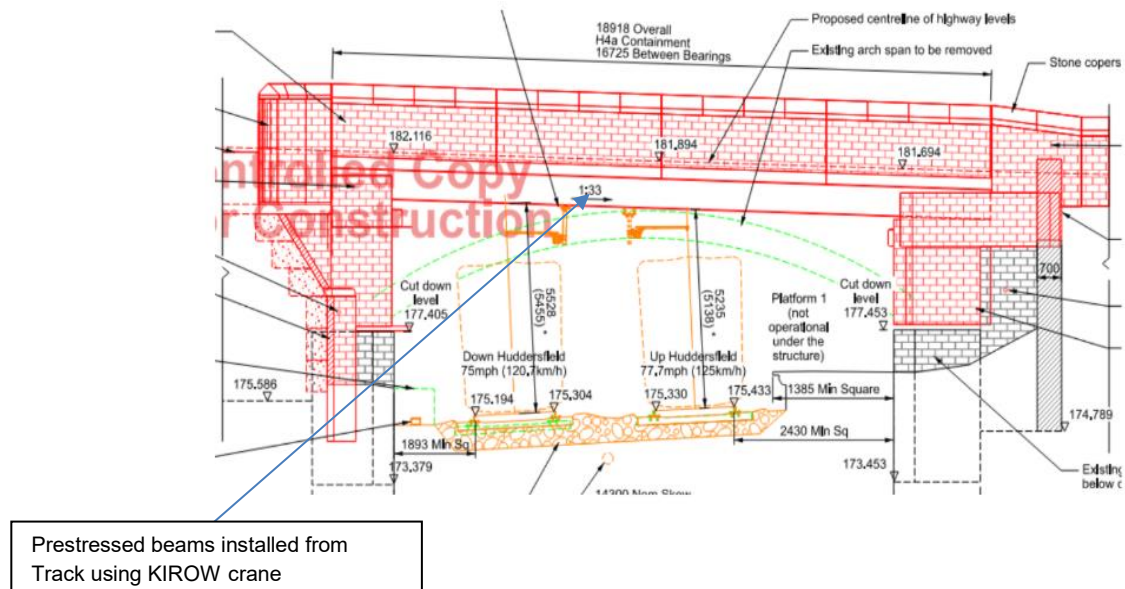


Figure 14 MVL3/28 Proposed Elevation

5.6 Activities: -

5.6.1 Construction Activities- see table below.

**THE NETWORK RAIL (STALYBRIDGE TO
DIGGLE (SADDLEWORTH) ENHANCEMENTS) ORDER**

NR/PoE/KG/3.2

Construction

Table 5-1: Construction Activities

<u>Activity</u>	<u>Methodology</u>	<u>Road Closures</u>	<u>Track Access</u>	<u>Duration/Note</u>	<u>Sequence</u>	<u>Total</u>
Statutory Undertakers enabling works	Install ducting on both sides of road bridge	Oldham Road – 2 nights full and 4 weeks lane closure Shaw Hall Bank Road 4 weeks full closure Ladcastle Road 4 weeks full closure	None	4 weeks	Staggered Activities	4 weeks
Install rock anchors, East ret wall insitu pad foundations and footbridge insitu pad foundations	Hit and miss up to track level. Concrete delivered from track. Rock anchors installed from track. 30No. assumed.		Mid Week and weekend nights 30 No.	App 15 weeks	Staggered Activities	20 weeks
Setup Tracksides barrier on platforms	Install 2.5m high solid barrier		Mid Week and weekend nights	4 weeks		
Install West side Footbridge foundation piles	Set up piling matt, piling works (6No. assumed) and insitu pile cap		Mid Week and weekend nights	6 weeks		

**THE NETWORK RAIL (STALYBRIDGE TO
DIGGLE (SADDLEWORTH) ENHANCEMENTS) ORDER**

NR/PoE/KG/3.2

Construction

Install retaining wall and Footbridge risers	Install riser units & cills from track. Concrete Pump on Oldham Road and Shaw Hall Bank Road backfill. 2 concrete lifts	Oldham Road, Shaw Hall Bank & Ladcastle Road: 2 week lane closure & 2 night full closure	Mid Week and weekend nights	4 weeks		
Install Footbridge Beams and deck units	Kirow rail crane at track level	Oldham Road, Shaw Hall Bank Road & Ladcastle Road : 2 week lane & 2 night full	Weekend 27 hour Rail Possession	2 weeks	Consecutive activities	3 weeks
Insitu concrete stitches/pockets & diaphragms	Insitu concrete. Pump from Shaw Hall Bank Road	Oldham Road, Shaw Hall Bank Road & Ladcastle Road : 1 week lane & 1 night full	Mid Week and weekend nights	1 week		
East Access Ramp construction	Excavations, precast 'L'-units installation, wall, backfill, ducting, surfacing etc	Shaw – Full closure until services diverted min 6 weeks				6 weeks
Statutory undertakers Diversion Works	Running out services and jointing (Telecoms, Power, Water)	Oldham Road – 5x (2 weeks lane) Shaw Hall Bank Road – 5x (2 weeks full) Ladcastle Road 2 weeks full closure		16 Weeks (allows for 4 weeks contingency)	Staggered Activities	16 weeks

**THE NETWORK RAIL (STALYBRIDGE TO
DIGGLE (SADDLEWORTH) ENHANCEMENTS) ORDER**

NR/PoE/KG/3.2

Construction

Break	Added to the activity list to reduce the risk of statutory undertakers' works affecting the main bridge replacement					8 weeks
Oldham Road Compound Setup	Pre works to set up the local site compound on Oldham road.	Oldham Road (between Shaw Hall Bank Road and Chapel Road only) – 4 weeks		4 weeks		4 weeks
Road Bridge Enabling Works & drainage preparation	Deck Ends excavation West Side	All 6 weeks full closure		1 week	Staggered Activities Pre main blockade	6 weeks
	Strip Carriageway			1 week		
	Deck Ends excavation East Side			2 weeks		
	Remove Street Lighting, furniture, and adjacent fencing			2 weeks		
	Break down parapets, wingwalls, abutment			6 weeks		
Existing Bridge Removal & install	Kirow rail crane setup, 3 days	All 1 week Full	5 Days Rail Blockade	5 days	Follow on	1 week

**THE NETWORK RAIL (STALYBRIDGE TO
DIGGLE (SADDLEWORTH) ENHANCEMENTS) ORDER**

NR/PoE/KG/3.2

Construction

deck beams/parapets	breakdown and removal of existing including. protection and 2 days install beams and parapets with a Kirow Rail Crane					
Road Bridge Reinstatement works	Cast Bridge Deck instu works	All 10 weeks full	Mid Week and weekend nights	1 week	Follow-on and Staggered activities	10 weeks
	Waterproof Deck Ends and Install Drainage			1 week		
	Reinstate Deck Ends			1 week		
	Spray Apply Deck & protected			1 week		
	Reinstatement of Gas Service overbridge (4 weeks preparation time beforehand with jointing)			1 week		
	Stonework to parapets and trackside elements (non- pre clad elements)			3 weeks		

**THE NETWORK RAIL (STALYBRIDGE TO
DIGGLE (SADDLEWORTH) ENHANCEMENTS) ORDER**

NR/PoE/KG/3.2

Construction

	Regulate Carriageway and Kerbing Works			1 week		
	Iron Works, Furniture & Signage, Street Lighting			1 week		
	Resurfacing Works, White Lining			1 week		

5.7 Summary

5.7.1 As can be seen from the table above, the full closure of Oldham Road equates to a total of 17 weeks, summarised below:

1. Enabling works pre-demolition- 6 weeks. This also includes demolition of parapet and wing wall, which will need to be coordinated with 'no trains' periods.
2. Blockade 1 week demolition and installation of bridge deck beams and cill beams
3. Reinstatement works post-demolition, which includes parapets and copings coordinated with RoR periods, along with curing periods for concrete, waterproofing, and surfacing.

5.7.2 With the design and construction process undertaken in this manner, there is no reliance on reinstatement of services, which reduces the risk of a longer road closure immensely. Realistically, it would be difficult to see how the 'post demolition' 10-week period could be reduced, but I believe it to be realistic in delivery.

5.7.3 There has been mention of the use of a 'Bailey bridge' to reduce or eliminate the need for a road closure. I cannot see how in this location a structure such as this would work. Ground conditions, height required, location, road alignment and geography would make such temporary works both impractical and would prove to be more disruptive than the closure proposed. Another factor is that, as the temporary structure would be crossing a live operational railway, it would need to be designed to permanent works standards. To safely operate under such a structure would also require a headroom of 3-4m, which in this location makes it totally impractical.

5.7.4 Night-time or weekend working has been limited to absolutely necessary activities to minimise the overall period of closure and associated disruption. The sequencing of reinstatement means that by undertaking more work in the rail blockade, it would not reduce the overall time for reinstatement, and as such, the road closure.

Construction

6. STATION RD MVL3/39

6.1 Introduction

6.1.1 The superstructure of span 1 (over the railway) of the three-span overbridge is to be reconstructed as it does not have sufficient headroom to accommodate the installation of Overhead Line Equipment (OLE). The overall form of the bridge deck will be a standardised filler beam overbridge construction (see figure 144 below). The bridge parapets will be 1.8m tall

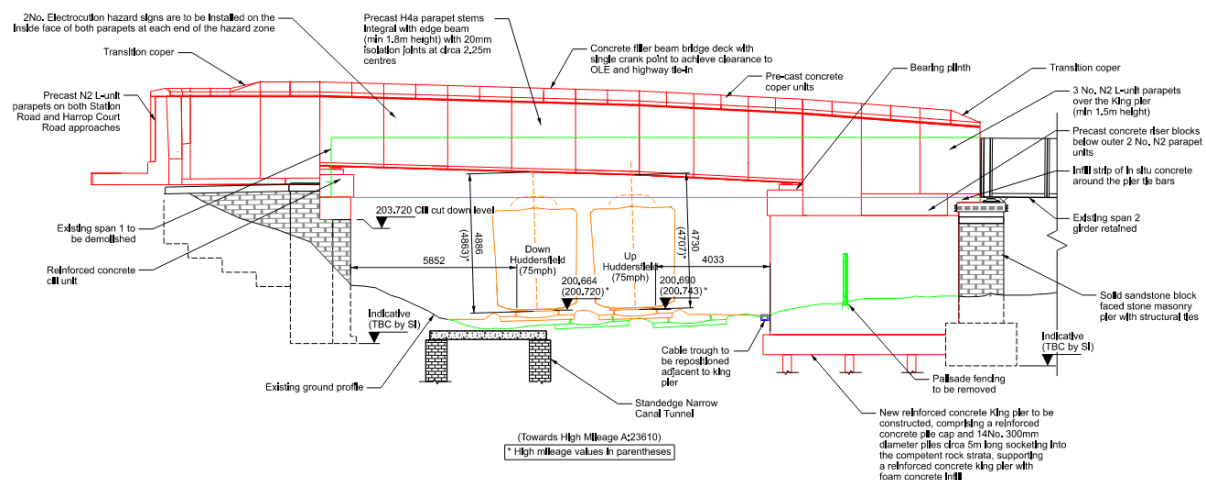


Figure 15: MVL3/39 Proposed Elevation

6.1.2 The substructure will be retained, as well as the entirety of the superstructure spans 2 and 3. To prevent adding additional load to the existing pier 1/2, a new reinforced concrete 'king' pier will be built adjacent to but structurally separate from the existing pier and will be supported upon a piled foundation, with piles socketed into the competent rock strata (circa 5m below ground level). The piled foundation and associated excavations are to be situated outside of the track support zone. Following demolition, the precast cill beam, parapet units and riser units can be installed onto the new king pier.

6.1.3 To accommodate the highway level increase on the western approach to the overbridge, the approach walls are to be demolished and replaced with 1.5m high precast 'L'-units over a length of approximately 20m and 16m for Station Road and Harrop Court Road, respectively.

6.1.4 On the low mileage side of MVL3/39B, permanent earthwork modifications will be limited to those in the immediate vicinity of the new 'L'-units, with the crest of the slope being replaced with a fill material around and in front of the base of the new parapet units. On the high mileage side of MVL3/39B, permanent earthwork modification will extend from MVL3/39B up to the end of the new line

of parapets and will also comprise the removal of the existing redundant platform riser wall.

6.1.5 Objections (OBJ 185, OBJ 233):

- Reason and location of Diversion
- Canal and Rivers Trust Car Park usage of Sam Road

6.2 Access strategy and constructability considerations

6.2.1 Again, to respond to the objections, I believe it is important to explain the construction process and details to recognise the needs of the scheme.

6.2.2 Although the bridge deck is in accordance with a standardised filler-beam concept in the permanent condition, its detailing will be modified to suit the site-specific constraints at MVL3/39. This predominantly affects the level and road alignment.

6.2.3 A key constraint on the construction is that the Crane methodology for MVL3/36 (build circa Q4 2029), MVL3/39 (build circa Q3 2030), and 39B (build circa Q1 2032) must be considered holistically, as they share certain elements of enabling works. There are broadly two options:

- 1) Mobile crane positioned on Harrop Court Road for the reconstruction of MVL3/39 (Station Road) and for lifting bridge components for MVL3/36 (Ward Lane) down to rail wagons, which then travel to the structure for installation by a Kirow Rail crane. Due to the time lag between the construction of MVL3/39 and MVL3/39B, the crane platform would not still be in place when the MVL3/39B works are undertaken, and a mobile crane sited near the Canal and River Trust car park would lift the bridge sections onto rail wagons to be installed at MVL3/39B by Kirow. There is no access route through the Canal and River Trust car park or strengthening to the canal tunnel required with this methodology option, as there is in option 2.



Figure 16: Indicative 500T crane location on Harrop Court Road

- 2) Mobile cranes for MVL3/36 and 39 and bridge components for MVL3/36, 39 and 39B (Standedge Tunnel) reach the access track by driving through Canal and River Trust car park and over the top of Standedge canal tunnel before travelling to the respective structures (see section 5.33). No crane platform on Harrop Court Road is required with this methodology option.

6.2.4 With option 1, the latest construction phasing would require the temporary crane platform to be in place for a period of around 18 months.

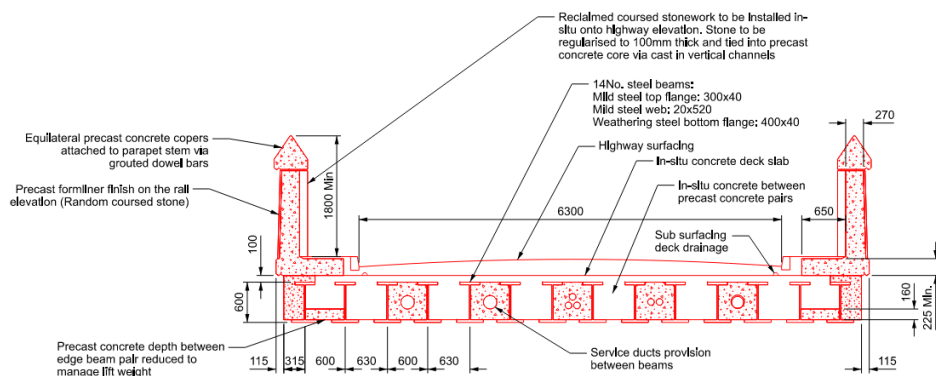


Figure 17: Cross-section showing in situ and precast deck elements at MVL3/36

6.2.5 Therefore, the preferred and least disruptive option is 2.

6.2.6 The crane would be situated on the low mileage side of the overbridge so as to avoid adverse loading on the culvert or clashing with the temporary services bridge, both on the high mileage side of the overbridge (see figure 19 below).

6.2.7 The proposed 500T mobile crane is used for installation. The crane and all significant bridge components will access the railway corridor via the A670, Huddersfield Road and Sam Road, and then via a temporary access route through the existing Canal and River Trust car park and over Standedge canal tunnel. This portion of the canal tunnel is owned and maintained by the Canal and Rivers Trust and is a masonry-arch structure. Loading from the crane while travelling to MVL3/36 (Ward Lane) and delivery of bridge components to the bridge will require protective works for the canal tunnel structure. In addition, a suitable haul route from the car park over the canal tunnel and appropriate track protection across the railway (3 No. tracks) would be required to facilitate access and egress from the site.

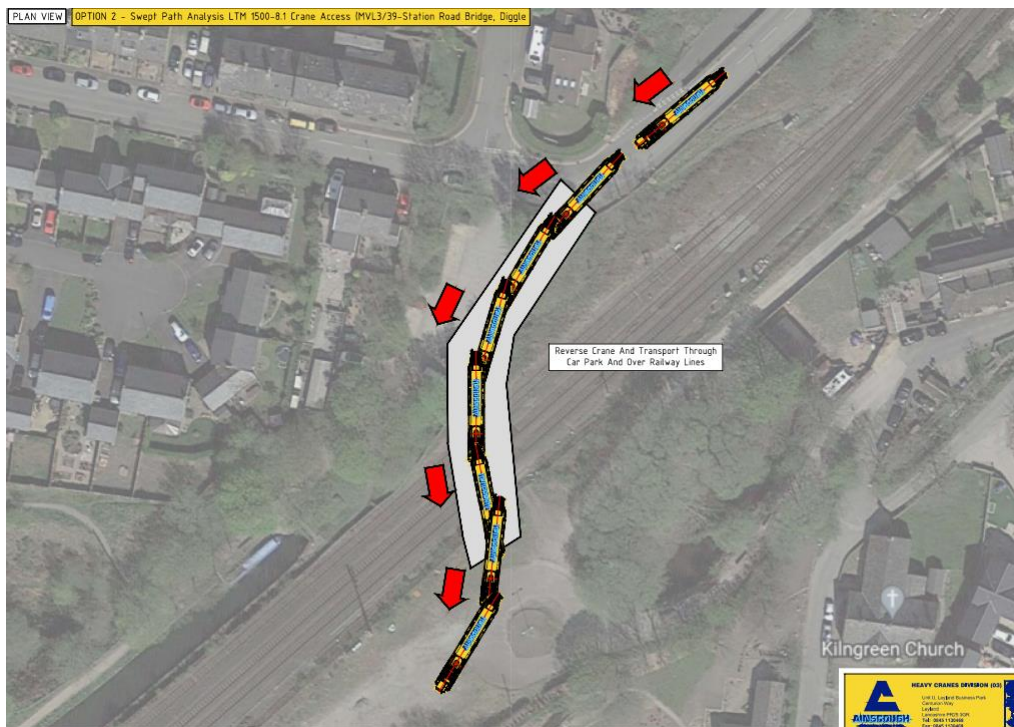


Figure 18: Mobile crane access for MVL3/36 and MVL3/39



Figure 19: 500T crane position at track level

- 6.2.8 Regardless of crane methodology selected, the Diggle compound will need to be used as the satellite compound and material laydown area and will be the nearest Road Rail Access Point for track access. During demolition, bridge sections are to be transported to the compound by trailer for removal.
- 6.2.9 Records also indicate the presence of a water overflow known as the 'Diggle Feeder'. Its precise location must be confirmed, as it may affect the permanent works design for Station Road Bridge and, more likely, the temporary works required due to the use of heavy plant and craneage during construction. It is essential that the location and condition of this asset are established to ensure

an appropriate and safe design can be developed. An operation to 'tag and trace' the asset will be arranged and the C&RT notified. As the ownership of the feeder rests with the C&RT all proposed designs and methodologies will be submitted for review and approval prior to commencement of the works.

6.3 Construction Sequence

6.3.1 During the combination of operational railway and maintenance (Rules of the Route 'RoR') possessions:

During operational railway:

1. Devegetate the cutting slope in the vicinity of Harrop Court Road crane mat (see figure 145 above)
2. If crane methodology option 1 implemented: Locally break down approach walls in the vicinity of Harrop Court Road crane mat (with suitable protection measures to prevent debris reaching the track)

During 1No 54-hour possession:

3. If crane methodology option 1 implemented: Install temporary supports and build up ground on the cutting slope to form Harrop Court Road crane mat

During operational railway:

4. Build a new support pier piled foundation
5. Build new support pier RC walls and structural fill below existing east span
6. Locally break down approach walls and excavate behind overbridge deck ends in advance of bridge deck demolition

During possessions:

7. If crane methodology option 2 is implemented: Set up a temporary crane platform in the vicinity of MVL3/39 to facilitate demolition and reconstruction by a mobile crane.
8. Construct a statutory undertaker's bridge on the high mileage side of the overbridge.

During two successive 52-hour possessions:

9. Install track protection
10. Demolish East span using a crane on Harrop Court Road to lower bridge sections onto wagons and remove them from the area
11. Cut down the existing abutment to the underside of the proposed cill beam
12. Install precast risers and cill unit onto retained abutment and install risers, cill unit and precast 'L-unit' parapets onto new East pier
13. Install deck beam sections with temporary edge beam anchorage to ensure stability

Construction

During operational railway:

14. Fix deck slab reinforcement

During mid-week possessions:

15. Cast-in-situ concrete between beam pairs and topping slab for bridge deck

During 1No 54-hour possession:

1. If crane methodology option 1 implemented: Excavate temporary crane mat engineering fill and remove temporary protection from the site; form the permanent earthwork profile and install topsoil and seeding (statutory Undertakers bridge remains in position).

If crane methodology option 2 is implemented: form the permanent earthwork profile and install topsoil and seeding (statutory Undertakers bridge remains in place).

During operational railway:

2. Demolish existing stone walls on the western approach (Station Road and Harrop Court Road)
3. Install precast 'L'-unit parapets on the western approach and construct the top portion of the slope, which hides the base of the parapet units
4. Install deck waterproofing and protective finishes
5. Build in situ stone facing to the inside face of parapets over the bridge deck and approaches, and install coping stones
6. Backfill with engineered fill behind the structure and on approaches up to the underside of the highway formation
7. Implement services diversion stage 2 (into the final position)

During possessions:

8. Decommission services bridge

During operational railway:

9. Excavate temporary crane mat engineering fill and remove protection supports from site; form the permanent earthwork profile and install topsoil and seeding.
10. Install final highway surfacing, drainage and kerbs

6.3.2 Rebuild pedestrian access steps on the east side of the bridge to accommodate the new road alignment

6.3.3 During the period of bridge reconstruction, Station Road and the southern access to Harrod Ct Rd will have to be closed, and suitable diversion routes will be put in place for pedestrians and vehicle access. The roadworks required to align with the new overbridge will also need to be undertaken with full closure, and so the diversion routes will need to remain in place until completion.

- 6.3.4 The current diversion routes highlight a vehicular diversion route across the Standedge tunnel and onto the boat lane, which will require works to ensure suitability and have suitable pedestrian segregation along Boat lane.

6.4 Summary

- 6.4.1 In my opinion, utilising access through the Sam Road car park and across the track represents the least disruptive approach and avoids interface with the public. Vehicle and pedestrian routes will be implemented to maintain safety for the workforce and public throughout the works.
- 6.4.2 Whilst the bridge is being constructed and approaches are being built, the road has to be closed and diversions put in place. The new alignments of Station Road make a lane closure of Station Road both impractical and unsafe for construction and the travelling public.
- 6.4.3 All diversion routes will be appropriately designed and made suitable for their intended use.
- 6.4.4 This method significantly reduces cost and minimises disruption to the public
- 6.4.5 With regard to the objections, the equipment for the Canal and Rivers Trust car park is explained in section 6.2.5-6.2.7. On completion of the works, the compound and access through the Canal and Rivers Trust Car park will be removed and reinstated to its previous condition
- 6.4.6 The requirements for the diversion to be in place have been addressed in section 6.3, but I must stress the importance of diverting traffic and pedestrians from the bridge site during construction to ensure the safety of the public and the workforce.

7. WARD LANE MVL3/36

7.1 Introduction

Description of intervention

- 7.1.1 The existing overbridge superstructure is to be reconstructed because it lacks sufficient headroom for Overhead Line Equipment installation and is in poor condition. The overall form of the deck will be as per the standardised filler beam overbridge with parapets 1.8m tall. (See figure 130 below)

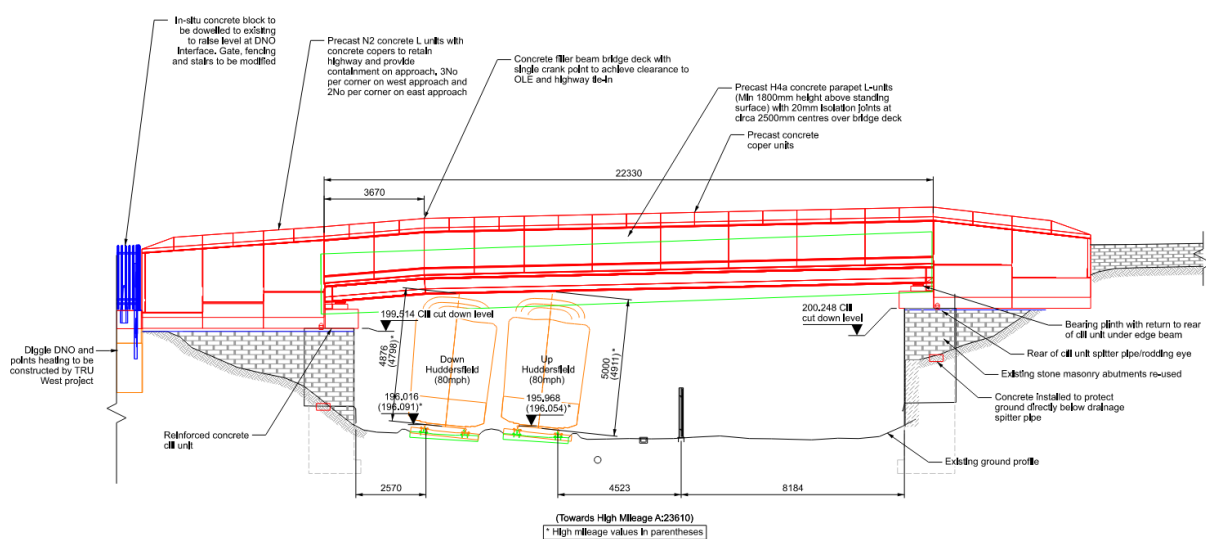


Figure 20: MVL3/36 Proposed Elevation

- 7.1.2 New precast cill beams with elastomeric bearings shall be supported upon the existing abutments, which are to be retained, with minor repairs carried out to defects where required. The approach walls in all four corners, supported upon the wingwalls, are to be broken out to facilitate reconstruction of the bridge deck. The approach parapet in the north-west corner will be installed on a slightly altered alignment to the existing in order to provide improved visibility to the Grandpa Greene's car park junction.
- 7.1.3 As a result of the bridge reconstruction to achieve a minimum 4665mm vertical clearance for Overhead Line Equipment, the highway is to be lifted by 800mm at its maximum point. The highway will tie in before the adjacent residential property on the west approach, but will require alignment modifications to the Grandpa Green's car park entrance. The highway alignment will also tie in before the footpath access steps on the east approach, avoiding the need to reconstruct them.

7.2.1 Objections received: OBJ 200, OBJ 209

7.2.2 Diversion - Traffic and Emergency Services- Traffic and pedestrians

Inclusion of a Level Crossing for traffic

Access strategy and constructability consideration

7.2.3 In order to address the objections to the requirement for traffic and pedestrian diversions, it is important to understand the logic and constraints associated with the new construction of this overbridge.

7.2.4 The option for main craneage for bridge installation and demolition is described under the Station Road bridge, as the two structures will utilise the same approach.

7.2.5 In the case of Ward Lane, in advance of the structure removal, a statutory undertaker's service bridge will be installed parallel to the existing one, which will also accommodate pedestrian access across the railway. This service bridge will remain in place until the structure has been fully replaced. The services bridge will be installed immediately North of the existing structure (see figure 135 below). Additionally, the service diversion bridge will accommodate pedestrian access in order to minimise the diversion route for pedestrians.

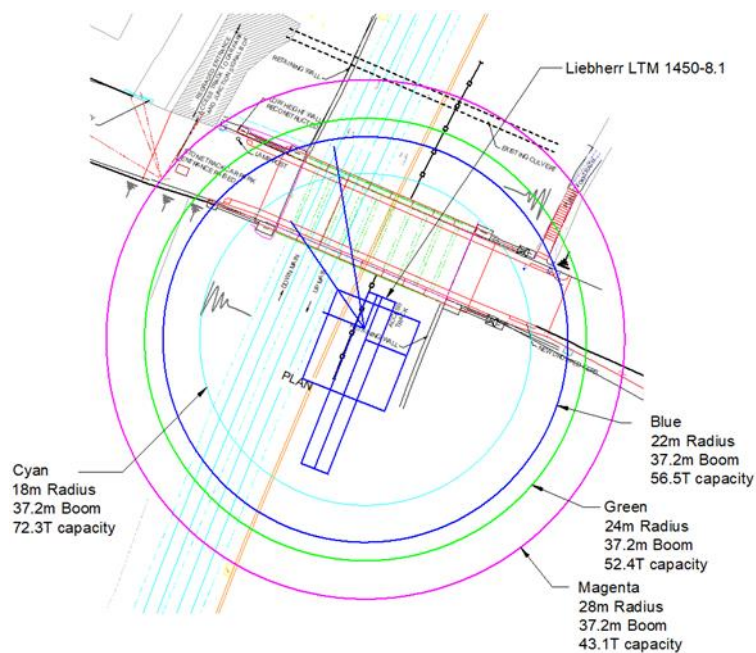


Figure 21: 500T crane position during installation at MVL3/36

- 7.2.6 It is important to note that the access will need to be closed at critical stages of construction to ensure safety. These are operations such as demolition and beam installation. These operations are likely to be of relatively short duration and will be advised well in advance

Strategy For Statutory Undertakers

- 7.2.7 The existing bridge deck supports the following services: 1 No 100 DIA BT duct, 1 No sewer pipe, 1 No water main, 1 No gas main, 2 No electricity ducts, and an as-yet unidentified duct. These services, unlike Oldham Road, will require a two-stage diversion, which will be accommodated via a temporary bridge positioned immediately to the north (high mileage) side of the overbridge. A two-stage approach, which is the only option here, has a higher level of programme requirement and, as such, means diversionary routes are usually kept in place longer.

7.3 Construction Sequence

- 7.3.1 During the combination of operational railway and Rail possessions:

- 1) Construct a utilities bridge and implement diversions for utilities, pedestrians and local residents
- 2) Locally break down the approach walls and excavate behind the existing deck ends in advance of demolition
- 3) Set up the crane for demolition

During two successive 52-hour weekend possessions:

- 4) Demolish span, removing metallic girders and brick jack arches
- 5) Cut down abutment to the underside of cill level
- 6) Install new precast cill units and set elastomeric bearings
- 7) Install prefabricated beam pair sections with temporary anchorage to edge beams

During operational railway:

- 8) Fix deck slab reinforcement

During mid-week possessions:

- 9) Cast in-situ concrete between beam pairs and topping slab for bridge deck (remove temporary edge beam anchorage once concrete cured sufficiently)

During 52-hour possession:

- 10) Install precast 'L'-unit parapets

During the operational railway

- 11) Install deck waterproofing and protective finishes
- 12) Install deck waterproofing and protective finishes
- 13) Build in situ stone facing to the inside face of parapets over the bridge deck and install coper units
- 14) Backfill with engineered fill behind structure and on approaches up to underside of highway formation
- 15) Rebuild approach stone walls
- 16) Install new highway surface, kerbs and tie ins
- 17) Reinstate services

During possession:

- 18) Remove stone bridge

During operational railway:

- 19) Remove stone bridge bank seats
- 20) Rebuild pedestrian access steps on the east side of the bridge to accommodate the new road alignment

7.4 Design and Diversion

- 7.4.1 To address the objection of the possible installation of a level crossing to retain access it is important to note the design arrangement shown in the figure below:-

Construction

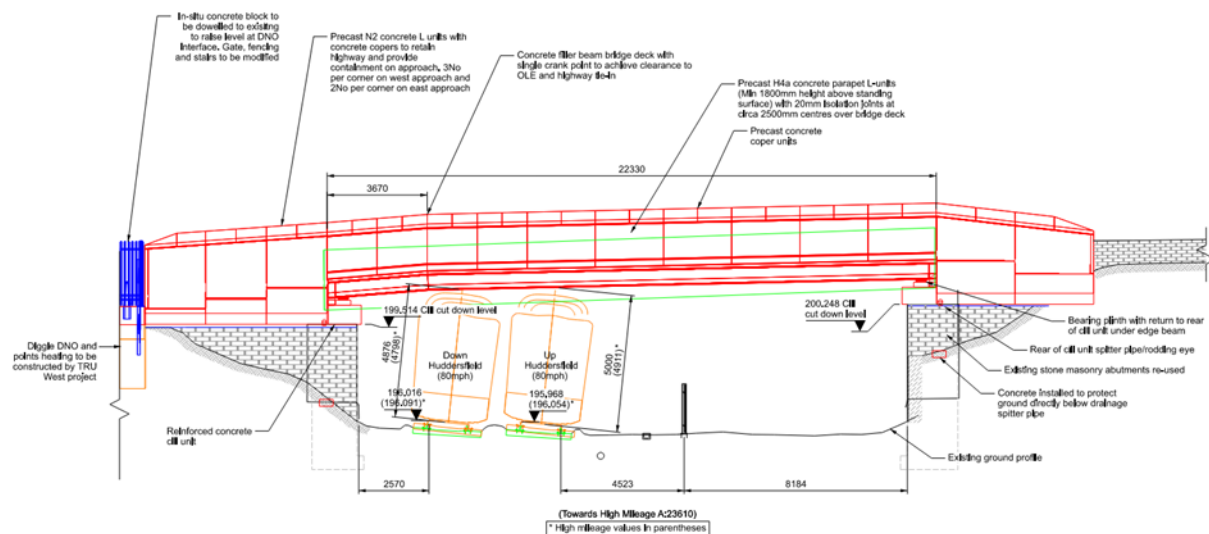


Figure 22: Ward Lane Cross Section

7.4.2 Any level crossing would have to accommodate the following constraints: -

- Suitable approach and exit
- Suitable geography- The area of Ward Lane does not support this suitability.
- Suitable location on the Rail Network. Note that the track is on a curve at this location and therefore not suitable
- Agreement from Network Rail for Level Crossing
- Within this area, the Rail is in a cutting and, as shown above, is some 3-3.5m below track level. A level Crossing would require substantial earthworks, service diversions, and road realignment works, both to install and to remove, which would prove more disruptive and have a substantial cost impact. There would also be a requirement for third-party land take, which again is not practical when an alternative is available.

7.5 Summary

7.5.1 In summary, whilst it is unfortunate that a diversion route is in place for some time, I believe this is the safest and most effective measure for supporting the construction activities. The area's geography does not support any alternative. There has been consideration of pedestrian access across a temporary bridge in order to reduce disruption to the residents and the public as indicated in section 7.2.5.

7.5.2 Again, it is important to reinforce that the period for construction of the bridge is not just dependent on 'normal' activities but takes into account rail access and

the complexity of the service diversions. Whilst the programme appears to be lengthy, it is not unreasonable, as I have commented above.

- 7.5.3 Regarding the objection to providing a level crossing to avoid a traffic diversion, I believe this has been covered in sections 7.4.1 and 7.4.2.

8. ROYAL GEORGE BRIDGE MVL3/25

8.1 Introduction

Description of intervention

- 8.1.1 MVL3/25 is a grade II listed single skew span underbridge. The structure carries the Huddersfield Up and Down lines over Oaklands Road. The superstructure comprises two parallel decks; each deck consists of two main longitudinal early steel plate edge girders of half-through construction, supporting transverse early steel RSJ cross girders and longitudinal early steel buckle floor plates. Cast iron parapet edge beams support decorative cast iron parapets, with sandstone slabs beneath the cess, spanning between the cast iron edge beams and main edge girders. The abutments are of sandstone masonry construction, with semi-octagonal ashlar pilasters above the abutment ends.



Figure 23: Existing structure

8.2 Objections

- 8.2.1 Objections received (OBJ 191, OBJ 233, OBJ 254, REP 03, REP 04, REP 06, REP 10): Diversion - Road Closure, Use of car park, Trees adjacent to existing site

Access strategy and constructability consideration

- 8.2.2 In order to explain the requirements for road closure and land take it is important to outline the proposed methodologies associated with the reconstruction of this structure. Both options are viable, but at this stage, they depend on different programme requirements, mainly track access.

- 8.2.3 There are a number of constraints that have been considered in developing the design and construction methodology, including the following:

- Limited space for crane or assembly in advance for the Self-Propelled Modular Transporter (SPMT)
- Constrained site adjacent to church hall and graveyard
- Road closures – impact on church hall and adjacent access road
- Crane pads – to consider services in road and slope of the road
- Temporary support of the railway services and signal cables
- Removal/ pruning of trees within close proximity to structure required - some have Tree Preservation Orders.
- Steepness of the road to the north towards Oaklands compound
- Demolition method and condition of cast iron parapets

- 8.2.4 Due to the site constraints and considerations, two construction methodologies are presented. As detailed below, option 1, the preferred option, is to utilise a crane in the road south of the bridge. However, option 2, utilising SPMT, has also been considered as an alternative, with temporary land take allowed in case option 1 is found to be infeasible or access requirements are unavailable at a later programme stage.

Option 1: (Preferred option)

- 8.2.5 The demolition and reconstruction works are envisaged to be undertaken during a 120-hour rail blockade.

8.2.6 The new bridge deck elements are to be installed by a 700t mobile crane positioned on the road to the south of the bridge (see figure 80 below). The space for the crane is restricted between the adjacent church hall and graveyard, and will require crane pads to be positioned close to the wall of the hall, as indicated below.

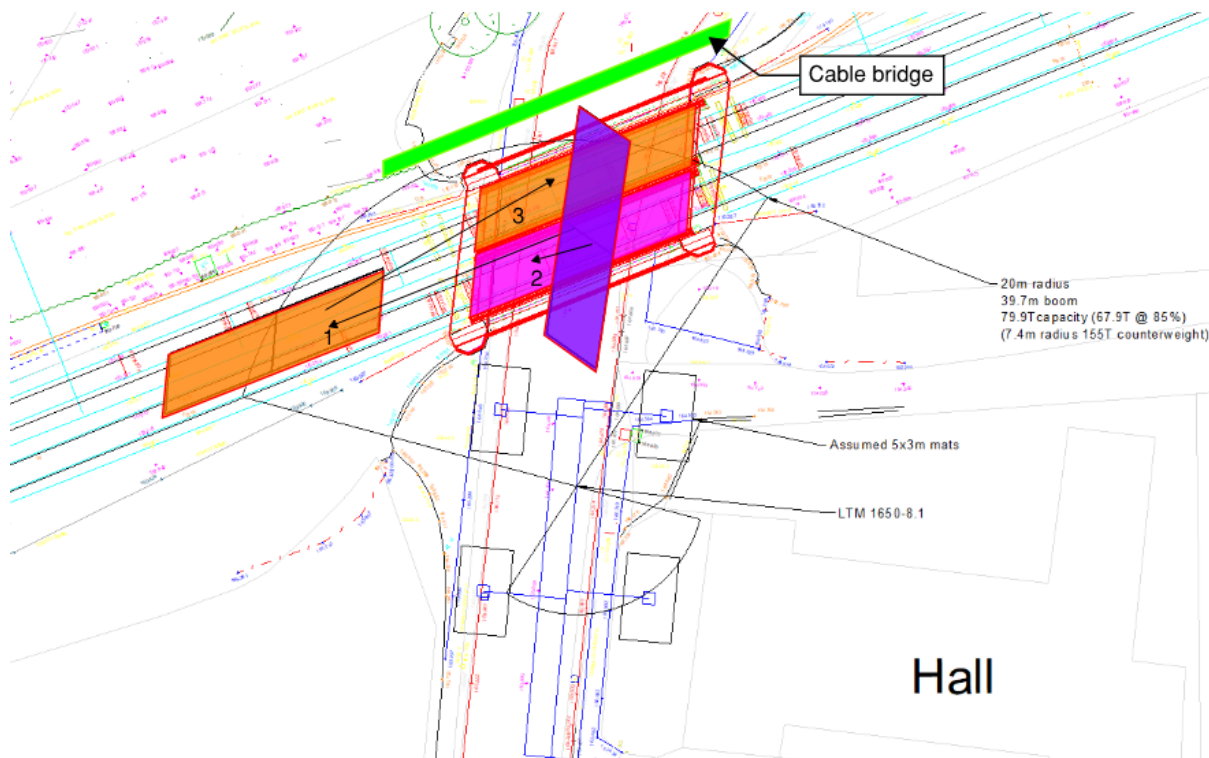


Figure 24: Lifting sequence (cable bridge to north of bridge)

8.2.7 Due to the slope of the road, it is envisaged the rear crane pads will need to be built up so that the crane is level (approx. 800mm). A temporary ramp is also likely be required to the south of the crane for the crane to access the crane support pads. This will restrict how close the bridge elements can be delivered to the south of the crane. Therefore, it is proposed that the bridge elements are to be delivered to site and lifted from the north, with decks installed as indicated in Figure 24.

8.2.8 By lifting the bridge elements from the north, in front of the crane, the need for over sail in the graveyard is reduced. This will reduce the need to prune the trees in the graveyard, which all have Tree Protection Orders (although some pruning is still expected to be required).

8.2.9 The cill beams are to be split into sections to suit the crane's lifting capacity. It is envisaged that the precast pilaster units and approach units are also to be lifted into place with the 700t crane.

- 8.2.10 The existing bridge will be deconstructed utilising the crane, lifting the decks in full onto flatbed wagons. These will then be driven off-site. Any materials on track which is required to be removed prior to lifting out the existing decks, eg ballast stripping, will be done so utilising Rail vehicles during track possession.
- 8.2.11 10 No Saturday night rail possessions will be required in addition to the main blockade for activities such as diverting cables. This will be an even split: 5 pre-blockade and 5 post-blockade.
- 8.2.12 All proposed works must be completed before any changes to the track alignment.
- 8.2.13 During the reconstruction works, the road will be required to be closed to the public for approximately. 3 weeks. During this time, both vehicular and pedestrian access will be unavailable due to crane operations and the associated exclusion zones required for safety
- 8.2.14 . Use of land in option one is restricted to the church hall car park area and small area of land adjacent. No tree loss or devegetation is envisaged with the exception of localised pruning of the trees. Refer to Jim Pearson's proof for the process to be followed regarding the Landscape and Ecological Management Plan [NR/PoE/JP/4.2].

In Summary for Option 1 the following railway access is envisaged to be required:

- 8.2.15 Blockade possession – 120hrs or 5 Days
- 8.2.16 Maintenance possessions – 10 No (assuming Saturday nights)
- 8.2.17 Site compound to be located at Oaklands Road rail access point north of the bridge. The majority of deliveries of plant and materials to the compound will be from the A669/A670 and to the site from the compound via Oaklands Road (approx.100m).The existing bridge has low headroom (signed as 13'3" and as such, it is envisaged that the crane will access the site from the south via the A635 and B6175.

Option 2:

- 8.2.18 In this option, the demolition and reconstruction works would be envisaged to be undertaken in a rail blockade of 72 hours, and 10 maintenance possessions.
- 8.2.19 A temporary construction area is to be established within Oaklands Road, the church hall car park, and the grassed area to the south of the church hall car park, as indicated below (see figure 25).

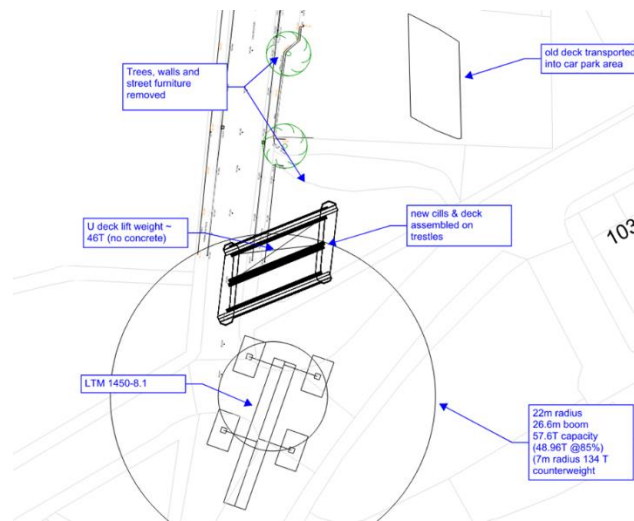


Figure 25: Temporary trestle/crane locations

8.2.20 The bridge deck will be constructed on temporary trestles within this construction area during a 5-week closure of Oaklands road. The bridge deck elements, including the cill beams, U-decks (excluding concrete deck) and edge beams are to be lifted onto the temporary trestles by a 450T mobile crane positioned within the junction between Church Rd/Well-Hole Rd, during a 9-day road closure of the junction.

8.2.21 During the 72-hour rail possession, the existing bridge decks are to be removed by self-propelled modular transporter(SPMT) and transported onto temporary trestles in the church hall car park area as indicated above. Following removal of the existing bridge decks, the new bridge decks, including cill units and edge beams are to be installed using SPMT. The remaining elements, such as approach units and pilaster units, shall then be installed. Following the possession, during operational railway, the existing decks shall be broken down in the church hall car park area and removed.

In Summary for Option 2 the following railway access is envisaged to be required:

8.2.22 Rail possessions – 72hrs

8.2.23 Maintenance possessions – 10 No (assuming Saturday nights)

8.2.24 The site compound is to be located at Oaklands Road access point. The majority of deliveries of plant and materials to the compound will be from the A669/A670, and deliveries to the site from the compound will be via Oaklands Road (approx. 100m). The crane will access the site from the south via the A635

and B6175. The deck elements, including U-decks, cill units and edge beams, are also to be delivered from the south of the site via the A635 and B6175.

In summary, the worst case scenario for railway access is as follows covering both options is as follows:

8.2.25 Rail possessions – 120hrs

8.2.26 Maintenance possessions – 10 No (assuming Saturday nights)

8.2.27 Option 1 avoids the need for additional road closure and, as such, reduces the amount of disruption to the local community.

8.3 Summary

8.3.1 In summary, both options need to be considered primarily in case the access by rail becomes unavailable; however, option 1 needs to be prioritised to avoid the need for additional road closures and a grassed area to the south of the church hall car park.

8.3.2 Having the experience of replacing a similar structure, I believe the identified programme times are realistic; option 1 reflects the least disruptive. Certainly, local residents will be kept informed throughout in accordance with CoCP Part B external Communications Programme, which will be submitted to the local planning authority for approval, but once the main blockade is in place, all public access, both pedestrians and vehicles, will be diverted away from the area to ensure their own safety as well as that of the workforce.

8.3.3 With reference to the objections, I believe this has been covered in the construction description above and ideally, option 1 will be adopted

9. COMPOUND STRATEGY

9.1 Introduction

9.1.1 The linear footprint of the scheme from Stalybridge to Diggle demands a number of interventions along its length, which require not only construction activities but also recognition of the requirements of the local community, traffic flow, and the environment. Taking this into account, and especially the existing geography and road network, the management approach is to support the construction activities with both strategic and satellite compounds and access to ensure both the most effective and efficient delivery, along with the least local disruption.

9.1.2 The strategic compounds location and size are key to housing a large number of management and support staff, serving as a supply and holding area for the satellite areas, and providing logistics support to the programme.

9.2 Location

Table 9-1 Strategic and Satellite Compound and access locations

Strategic	Satellite (Structures)	Satellite (Tunnels)
Printworks Road	Wakefield Road Compound	Bridge 10A / Tunnel Laydown Area
Plevins Logistics Hub	Manchester Road / Mossley New Compound	Scout West (Ramp)
Oaklands Road Compound	Heron Lane Compound	Scout West Laydown
Diggle Rail Hub	Armit Road Compound	Scout Spoil Point
	Oaklands Road Satellite (MVL3/25)	Scout East Laydown
	Saddleworth Rangers (Car Park)	Scout East Car Park
	Shaw Hall Bank Road	Scout East (Ramp)
	Brownhill Lane Compound	Egmont Street (Car Park)
	Grandpa Greens	
	Grandpa Greens 2 (Ward Lane MVL3/36)	
	Diggle Welfare & Office	
	Sam Road Car Park	

*Locations in blue are required for the Bridges & Station works and all other disciplines – Civils Earthworks inc. Off track drainage & Retaining Structures, Track, OLE and SP&C.

*Locations in purple are access ramps provided for the implementation of the Scout Tunnel works.

9.3 Strategic Compounds

9.3.1 As seen in Table 9-1, there are four strategic works compounds included in the Order, located in Stalybridge (Printworks), Mossley (Plevins), Greenfield (Oaklands Road), and Diggle (Diggle Rail Hub), as shown in red on the map as seen on Figure 26. Two of these are strategically positioned near the Scout Tunnel and Mossley & Greenfield Station interventions, with the other two situated at the start and end project limits at Stalybridge and just before Standedge Tunnel (Diggle). These strategic compounds are spaced evenly along the route, providing route-wide coverage, and are generally served by good transport connections.

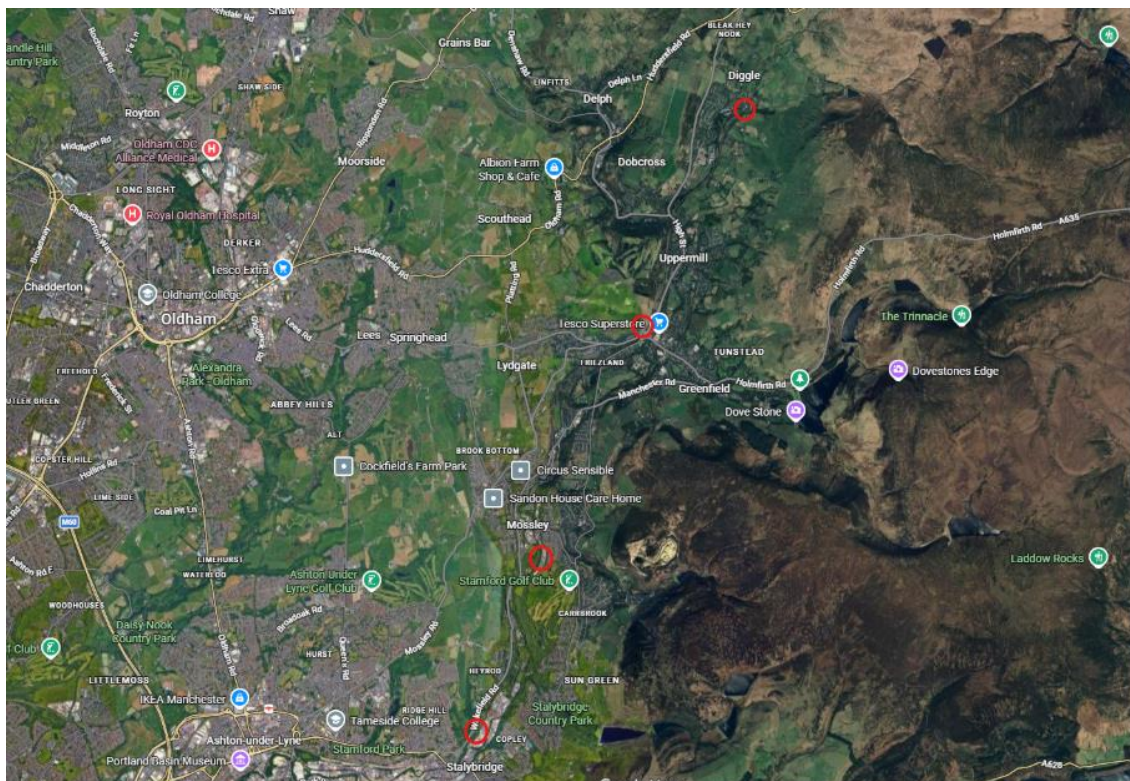


Figure 26 Map showing proposed strategic compound locations.

9.4 Alternatives

9.4.1 Other areas for main strategic logistics hub were considered and discounted. These were located in Uppermill (Saddleworth Old School) site and Mossley (Two Mills Old Factory) as shown below circled yellow in Figure 27

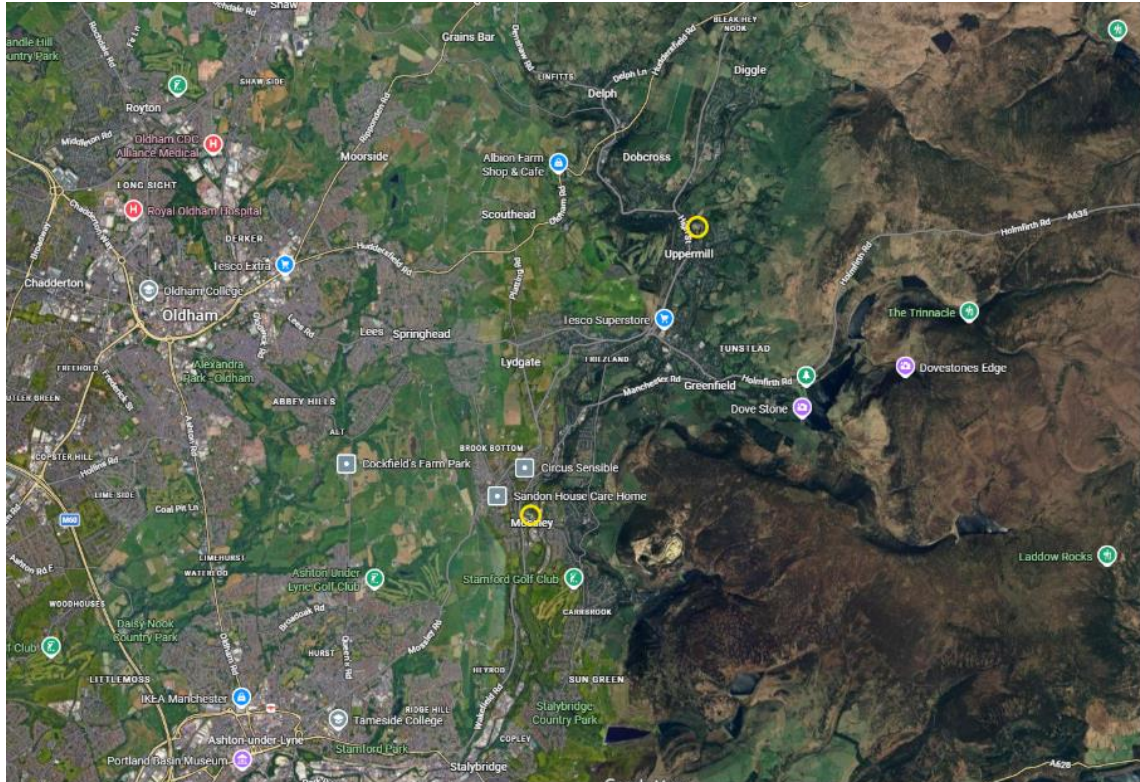


Figure 27 Alternative Compound Locations

- 9.4.2 Both sites required extensive work, had environmental impacts, impacts on local residents and/or impacts on the highway networks.
- 9.4.3 The Two Mills site in particular was much smaller in size than the requirements for the function of a strategic hub and when considering space required for storage, parking, welfare and spoil removal from sites such as Mossley Station and Scout tunnel. It also shared direct access with and was extremely close to residential properties (converted flats) that were previously part of the site, potentially creating challenges around disruption to access and safety implications a shared access, as well as concerns for noise and disturbance. This site required extensive demolition of existing buildings and had areas of the site that were within the flood risk zone.
- 9.4.4 The Saddleworth Old School distance away from the main artillery road i.e the A670 and the key feeder sites at Mossley Station and Scout tunnel were a key reason in discounting this site negating the benefits and requirements for spoil removal identified in section 3 via the Manchester Road Satellite compound, with wider impacts on the local highways network into the Diggle area of the

scheme. This site also required the loss of a number of mature trees and required demolition works.

9.4.5 The reasoning behind the selection of the strategic compound locations includes:-

1. The compounds need to be located strategically along the W2B Project route to allow rapid access by construction teams to sections of track, to minimise nightly travel time during 'rules of the route possessions', thereby optimising the delivery programme.
2. In selecting suitable land for these compounds, a key requirement is the ability to transfer material and workforce from the public highway to the railway and the location of the place of work. Therefore, the land identified needs to be adjacent to the track and/or have a Road-Rail Access Point (RRAP).
3. The location of Diggle Rail Hub comprises of the presence of an adjacent existing Rail access point (RRAP). At Printworks and Oaklands, new RRAPs will be created
4. Other key considerations in selecting locations for strategic works compounds were accessibility to the public highway and minimising impacts on sensitive receptors, particularly residential properties.
5. Plevins Logistic Hub site is located on the boundary of residential areas away from the railway, and provides localised logistical support for the significant tunnelling works within Scout Tunnel and the new Mossley Station construction. Plevins Logistics Hub also supports the wider W2B project across all disciplines. Specifically, to the use of Plevins, there is a large benefit to the construction activities at Mossley Station, Scout Tunnel, Greenfields, etc. The area is large and can become not only a holding area for material both on and off site, but also the ability to deliver materials and plant on a 'just in time' basis and eliminate unnecessary traffic congestion along Manchester Road and other main routes. It is common for delivery wagons to arrive unannounced and in numbers, which can be avoided by logistically controlling via Plevins Yard. This is a common approach in the construction of city centre sites where congestion is avoided.
6. Printworks Road is located in a non-urban setting adjacent to industrial site and provides direct access for the significant tunnelling works within Stalybridge Tunnel and supports other discipline works in the area. The location demonstrably avoids direct impacts on residential areas.

7. The Oaklands Road Compound is in an urbanised section of the W2B route where there are no alternative locations offering road to rail access further away from residential properties. Whilst the location itself is directly adjacent to the rail, the rail and useable compound is divided by some distance to the road and has tree screening around the perimeter. Please refer to the requirements of the Nuisance Management Plan and Jim Pearson Proof [NR/PoE/JP/4.2]
8. Diggle Rail Hub provides a critical logistics hub for the Eastern area of W2B from Uppermill to Diggle where there is very limited access to the rail corridor to support the implementation of the works. Diggle is also sited at the Southwestern Portal of Standedge Tunnel and provides direct access for works within the 5km Tunnel. The approach will be similar to that of Plevin's compound but on a smaller scale.

9.5 Structures and Stations Compounds development

- 9.5.1 Satellite compound locations to support the delivery of key bridge interventions across the route. The Order Scheme includes land for these construction compounds required to carry out bridge replacement or demolition works, as summarised in the table below (table 9.2).

Table 9-2 satellite compounds

Compound	Intervention	Requirement
Wakefield Road Compound	MVL3/10a & MVL3/7	Insufficient area in proximity of bridge locations
Manchester Road / Mossley New Compound	MVL3/18 & Mossley Station	Insufficient area in proximity of MVL3/18 Land is adjacent to Mossley Station
Heron Lane Compound	MVL3/20	Insufficient area trackside in proximity of MVL3/20
Armit Road Compound	MVL3/23	Insufficient area trackside in proximity of MVL3/23
Oaklands Road Satellite (MVL3/25)	MVL3/25	Insufficient area at highway level in proximity of MVL3/25
Shaw Hall Bank Road	MVL3/28 & 29a	Insufficient area at highway level in proximity of MVL3/28
Grandpa Greens 2 (Ward Lane MVL3/36)	MVL3/36	Insufficient area at highway level in proximity of MVL3/36 Insufficient area at highway level in proximity of MVL3/3
Diggle Welfare & Office	MVL3/36	Insufficient area at track level in proximity of MVL3/39

Sam Road Car Park	MVL3/39	To allow access to plant at track level
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9.5.2 In each case, construction compounds are required adjacent to the bridges to facilitate the construction works. These compounds need to be sized to accommodate the specific construction requirements of each bridge. Land for these construction compounds was selected to meet these requirements, including access from the public highway to allow construction vehicle access/egress.

9.5.3 The reasoning for selecting these locations is their proximity to the required works.

9.5.4 The selection of land for bridge replacement works satellite compounds is always sought to minimise impacts on private land generally and avoid land take from residential properties.

9.5.5 The benefits the selected locations brings are:-

- Least disruptive- Vehicles and construction plant are limited to the minimum distance and avoid travelling on public highway
- Safest to both construction personnel and the public
- Efficiency in delivery

9.6 Objections

9.6.1 Objections received: OBJ 35 OBJ 44, OBJ 144, OBJ 146, OBJ 205, OBJ 179, OBJ185, OBJ214, REP04

Objections include environmental, construction traffic, and period of usage and are addressed below. It is important to note that each compound will be approached in the same manner with respect to traffic, setup, management, security, community relations and Environmental management.

9.7 Requirement of strategic Compounds and scope environmental impact, Traffic Impact

9.7.1 The location, access provisions and primary use of all compounds are described below. These have been driven by the construction strategy in order to deliver both key interventions with the use of satellite compounds, and also route-wide proposals through a combination of strategic and satellite compounds

9.7.2 Printworks, Oaklands Road and Diggle Rail Hub

Requirement and purpose.

9.7.2.1 Identified as strategic compounds. These are all located alongside the railway corridor with Road Rail Vehicle Access and offer the distribution of materials via rail to support the routewide works and to feed the satellite compounds located next to the railway, where highway access is limited.

Period

9.7.2.2 Printworks: Envisaged to be in the order of 4.5 years

9.7.2.3 Diggle Rail Hub: Envisaged to be in the order of 5.4 years

9.7.2.4 Oaklands Road : Envisaged to be in the order of 5.3 years, Note that this will also have a permanent use on a smaller scale for track access.

Management and Security.

9.7.2.5 As a strategic compound, the offices will house the majority of management staff associated with the delivery area. All areas will be fenced off and have 24/7 security in operation to ensure both segregation from the public and safety. This is the approach for ALL compounds

Impact on the local community, along with the benefits

9.7.2.6 There are a number of benefits both for the project and the local community including: -

- Central point of contact for the geographical area of delivery
- Management of vehicular parking and traffic management to suit the local area and the project.
- Logistics distribution to avoid peak times such as school drop off and peak traffic flow.

Environmental issues

9.7.2.7 All compounds will be assessed from an environmental perspective. I refer to Jim Pearson's evidence [NR/PoE/JP/4.2]. This is similar for ALL compounds

9.7.2.8 Reference also needs to be made to CoCP part A, CoCP part B and condition 6(c)(ii) PPICP, 6(c)(iv), NMP, 6(c)(v) NVMP described in the evidence of Jim Paerson [NR/PoE/JP/4.2]

Response to objection where applicable

Construction

9.7.2.9 The two sites at Printworks Road, plot 2-018a and 2-026, are required primarily for works into the Stalybridge tunnel to lower the track and install OLE. Plot 2-018a is the primary compound, and 2-026 is used as a secondary. 2-026 as a secondary compound is intentional, given the environmental constraints of the site, including a number of mature trees with TPOs and an old farm building, which is highly likely to have roosting bats (Please refer to Will Horlock's proof of evidence[NR/PoE/WH/7.2]). It is also close to some residential properties. The area in question has been selected to avoid close proximity to the residential properties, but with enough flexibility to minimise tree loss and also provide an exclusion zone around the building to avoid demolition of it. It's likely to be used for vehicle parking, welfare and office area, material laydown overflow (if required). Ecological controls are described in Will Horlock's proof of evidence [NR/PoE/WH/7.2].

9.7.3 Plevins Logistics Hub.

Requirement and purpose.

9.7.3.1 The Plevins Logistics Hub will be a key strategic compound providing administration and construction support across the whole W2B Project works. This is located outside the railway boundary, on land included in the Order Scheme. This compound will be the primary compound for materials storage (Figure 28 below) and the office hub, offering site welfare and parking for staff, who will then be shuttled to other compound locations. Whilst supporting all works across the W2B area Plevins will also be used extensively to support the new Mossley Station works and for the implementation of Stalybridge and Scout Tunnel works during a 12 week railway blockade



Figure 28. Sketch of Plevin's Compound

Period.

9.7.3.2 Envisaged to be in the order of 6.2 years.

Impact on the local community, along with the benefits

9.7.3.3 There are a number of benefits both for the project and the local community, including:-

- Logistics control for Mossley, Greenfield and Scout Tunnel Works
- Central point of contact for the geographical area of delivery
- Management of vehicular parking and traffic management to suit the local area and the project.. Note that the workforce will be transported from this compound to the workplace, and construction vehicles are prohibited from parking on public roads.
- Logistics distribution to avoid peak times such as school drop off and peak traffic flow.
- Material Storage and distribution

9.8 Requirement of Satellite Compounds and Scope

9.8.1 In addition to these four strategic compounds, Network Rail proposes to provide a number of temporary satellite compounds, which will be fed by the strategic compounds. This will enable the wider track renewal electrification works within the Scheme works area, as well as specific works associated with various bridges.

9.8.2 Where possible, materials will be brought to the site by rail; this will include items such as ballast, sleepers, long welded rail, and certain bridge elements, with other materials being brought into compounds by road. Waste materials generated during the staged works will also be removed from the site via rail, where possible, comprising mostly spoil arisings (spent track ballast) and redundant track panels. All Road Rail Vehicle Access points are located within compounds proposed by the Scheme except one, Spring Street, which will be used as a vehicle access point to the railway only and not for compound use, therefore is not listed within the Order.

9.8.3 In terms of security and approach to Environmental management, these will be common to ALL compounds, so will not be repeated in this section.

Wakefield Road satellite compound

9.8.4 This is located between Stalybridge and Scout Tunnel within the Network Rail boundary and contains an existing RRAP. In addition to the bridge works for MVL3/7 (Heyrod Hall), MVL3/8 (Footbridge), MVL3/9 (Spring Bank Lane), MVL3/10(Manchester Road), MVL3/10A (Footbridge), it is required for Electrification, track and civils works and heavy lifting equipment for the construction of the bridge decks to be transferred by rail to the site for installation through to Mossley. It also contains lay-down areas, material

storage, and site welfare. This will remain as a permanent compound area post the project works.

Response to Objection

9.8.5 No objection

Timescale

9.8.6 Envisaged to be in the order of 7.1 years

Bridge 10A / Tunnel Laydown Area satellite compound

9.8.7 This is located at low mileage of Scout Tunnel and is required primarily for the Scout Tunnel works, with drainage works and Bridge MVL3/10A reconstruction adjacent. This will be used as a laydown/storage and parking area.

Response to Objection

9.8.8 No objection

Timescale

9.8.9 Envisaged to be in the order of 4.4 years

**Scout West Ramp / Laydown, Scout Spoil Point, Scout East Car Park,
Scout East Ramp / Laydown satellite compounds**

9.8.10 These compounds are all largely required for the Scout Tunnel works, supporting access, materials laydown, spoil removal with Scout East Laydown supporting wider track, OLE, and civils works up to Mossley Station.

Timescale

9.8.11 Envisaged to be in the order of 2.5 years

Egmont Street

9.8.12 This is outlined as a car park for residents who may have parking displaced due to traffic restrictions along Egmont Street. The route from Plevins Logistics Hub to Scout Tunnel utilises Egmont Street, along which large vehicles and HGVs will regularly travel during the blockade to transport materials and spoil.

Response to Objection

9.8.13 No Objection

Timescale

9.8.14 Envisaged to be in the order of 1 year

Manchester Road satellite compound

9.8.15 This located between the existing railway and Manchester Road on land within both the footprint of the proposed Mossley Station site and Network Rail's existing boundary. There is a temporary Rail access point proposed at this location to facilitate the Mossley Station construction and the lineside works between Scout Tunnel and Mossley. The Manchester Road satellite compound will be used as the main compound for constructing Mossley Station and will be supported by Plevins' strategic compound. This compound will be used for local site welfare, parking and office area, and as the primary HGV delivery site for the station construction, which is fed from nearby strategic compounds i.e. Plevins. This compound will also be used to access the Secondary Temporary Construction area at Brookfields via the temporary Rail Crossing.

Response to Objection

9.8.16 No Objection to the satellite compound. The issue of Mossley station location and the use of Brookfields and the requirements for the Manchester Road satellite compound are described in section 3.

Timescale

9.8.17 Envisaged to be in the order of 3 years

The Secondary Temporary Construction area at Brookfields

9.8.18 This is to be located opposite the Manchester Road satellite compound, will be used to support the construction of Mossley Station as a small temporary materials laydown and spoil storage and working area. This area will predominantly be accessed via the Manchester Road satellite compound Rail Crossing, with materials deliveries and removals to this area primarily being undertaken by rail. However, a means of secondary road access to this area is required via Archer Street and Spring Street. Please refer to the previous Evidence under Construction Activities.

Response to Objection

9.8.19 This is covered in section 3 previously

Timescale

9.8.20 There will only be local storage on this area as the satellite compound on Manchester Road will be utilised. The works on Brookfields should be undertaken in a period of 6-12 months

Heron Lane satellite Compound

9.8.21 This located at the end of Heron Lane off Manchester Road. This is to enable personnel and small equipment to be delivered by road and larger material deliveries by rail for the construction of Bridges MVL3/19 and MVL3/20. This compound will be used as a laydown/storage, and parking area

Response to Objection

9.8.22 MVL3/19 Midge Hall is an existing underbridge which requires strengthening. This work will be undertaken from the track level and within a rail possession. MVL3/20 Wrights Mill is a structure which needs to be reconstructed to allow electrification clearance.

9.8.23 The requirement for this compound is again to provide welfare, local storage, parking, etc. It is clear that access down Heron Lane is unsuitable for heavy or large vehicles, so this will need to be limited to small vehicles.

9.8.24 The Heron lane compound is primarily required to support the reconstruction of MVL3/20 Wrights Underbridge but will also be used for access to the railway for railways systems installation due to an existing established NR access point in this area. Access to this area is constrained and will be along Heron Lane, access from Midge Hill in vehicles is not viable due to the steep incline of the track, however it may be utilised for staff on foot. The access along Heron requires vehicles to move past a number of houses along the lane and alongside the river. Safety procedures will be in place for example the establishment of a banksman in this area to ensure safe passage along this lane any construction vehicles. 10mph speed restrictions along this lane for all staff will be in place at all times and communication protocols between any affected residents and the site lead will be put in place to ensure any concerns raised in use of this access route are dealt with swiftly.

9.8.25 The intention is to deliver the main items of plant and materials via rail, but the workforce will access via the compound.

9.8.26 Again, as with all other compounds, the area will be sealed off, and security will be in place to prevent access to both the compound and the work areas.

9.8.27 The compound will be fully reinstated to its original condition on completion.

Timescale

9.8.28 Envisaged to be in the order of 3.7 years

Armit Road satellite Compound

9.8.29 This is a small compound within a residential area to be used only for the bridge construction works for structures MVL3/22 and MVL3/23.

Response to Objection

9.8.30 MVL3/22 (Hobbe Hole) is an existing structure which will require strengthening. MVL3/23 (Wrights) is an existing structure which will be removed and not replaced. Both structures will be accessed primarily by Rail from local Rail access points; however, there is a need for a compound for a welfare facility, parking, some storage, and on-foot access for staff during the demolition works. There is no intention to use this for large material or plant movements; however, there may be a need for foot traffic and access for small vehicles during certain periods, such as demolition.

9.8.31 This is an area closest to the existing bridge and as such will be treated in a similar fashion to other compounds with hard standing, fencing and security in place.

9.8.32 The Armit Road compound is required in support of the demolition of Bridge 23. The requirement for the demolition of Bridge 23 is laid out in Emma Clarke's design proof [NR/PoE/EC/2.2]. In carrying out the demolition of Bridge 23, access to the site for any heavy plant and machinery will be via Rail from the Oaklands Road RRAP and construction compound. Any laydown of materials required to support the bridge demolition and diversion of the PROW will be on the West side of the railway corridor.

9.8.33 Armit Road compound is primarily required for the location of a welfare facility for staff to walk to and from on foot from the Bridge 23 area, as the closest area where the topography would allow such a welfare facility to be located. Access to the site via Armit Road will be restricted to light commercial vehicles only with nothing bigger than a delivery van ever being required to access this area. The only exception to this will be the establishment and de-establishment of the welfare facilities. Residents will be notified well in advance of any need to restrict parking during the site establishment to support access of the welfare facilities. In the main this area will be used to drop-off staff personnel from the Oaklands Road Compound and a small amount of staff parking where absolutely necessary. All of these restriction and operational restriction are intended to minimise any impact on what are narrow access roads into this area and avoid removal of vegetation and impacts on the Site of Biological Importance.

9.8.34 No direct impacts on the SBI are anticipated as the proposed works will be carried out within the existing railway boundary at this location. Potential indirect impacts are not expected to be significant with the implementation of standard environmental control measures. Please refer to Will Horlock's Proof of evidence [NR/PoE/WH/7.2]

9.8.35 Upon completion of the works, the compound area will be fully reinstated to its original state.

9.8.36 Environmental impact is also addressed within the PoE of Jim Pearson [NR/PoE/JP/4.2]

Timescale

9.8.37 Envisaged to be in the order of 9 months

Oaklands Road Satellite

9.8.38 This is a small compound located close to Friezland Church and is to be used for parking and welfare to support the MVL3/25 Royal George bridge works

Response to Objection

9.8.39 See Royal George's bridge methodology in section 8

Timescale

9.8.40 The use or loss of access to Friezland Church Hall car park is envisaged to be whilst the main build is undertaken. This is envisaged to be in the order of 5-6 weeks max depending on rail access and methodology of approach to construction.

Saddleworth Rangers

9.8.41 This is outlined as a car park for residents and rail users who may have parking displaced due to traffic restrictions along Shaw Hall Bank Road. Bridges MVL3/25 and MVL3/28 and Greenfield Station works are major interventions that use this route, and large vehicles and HGVs will regularly use it during construction.

Response to Objection

9.8.42 This site is not intended to be used as a compound directly but to ease pressure on parking restrictions that will be in the place on Shawhall bank road and Greenfield station during the works.

Timescale

9.8.43 Will be required for discrete periods of use during station closure and restrictions on Shawhall Bank Road over a period of approx 1.8 years.

Shaw Hall Bank Road satellite compound

9.8.44 This is located next to Greenfield Station and benefits from being an existing pedestrian access point. This is to be used primarily for the construction of Greenfield station, but also provides access for OLE, track, and lineside civils works in this area. This small satellite compound will be used as a storage area for lightweight tools and equipment.

Response to Objection

9.8.45 No objections

Timescale

9.8.46 Envisaged to be in the order of 3.8 years

Brownhill Lane satellite Compound

9.8.47 This is located in the Uppermill area and is to be used to access the railway for OLE, track and civils works. This compound will be used as a laydown/storage, welfare and parking area.

Response to Objection

9.8.48 No objection

Timescale

9.8.49 Envisaged to be in the order of 3.8 years

Grandpa Greene's satellite Compound

9.8.50 This located between Uppermill and Diggle and is to be used primarily to support the MVL3/35 (Footbridge) and MVL3/36 (Ward Lane) bridge works.

Response to Objection

9.8.51 Access third parties such as Grandpa Greene's has been discussed with the vendor with proposed mitigations explored. The second area of land Grandpa Greene 2 has been identified in response to concerns raised regard access to provide space to ensure access can be maintained whilst being used as a compound.

Timescale

9.8.52 Envisaged to be in the order of 2 years

Grandpa Greene's 2 satellite Compound

9.8.53 This will be used as a laydown/storage, welfare and parking area, and supports the Grandpa Greene's Compound. There is an opportunity to use this to deliver the MVL3/36 (Ward Lane) bridge works, should it be required.

Response to Objection

9.8.54 No Objection

Timescale

9.8.55 Envisaged to be in the order of 2 years

Sam Road Car Park satellite Compound

9.8.56 This is located on the opposite side of the railway to Diggle Office and Welfare Compound. This is required to provide access for the delivery of the MVL3/36 (Ward Lane) and MVL3/39 (Station Road) and MVL3/39A (Canal Tunnel) bridge beams, materials and crane/lifting equipment from the road network into the Diggle Rail Hub due to weight restrictions over bridge MVL3/39.

9.8.57 This compound will also be used to afford access for heavy craneage in the requirements for the construction of both Station Road and Ward Lane

Response to Objection

8.1.8 The methodology for constructing both the Ward Lane and Station Road bridges requires a rail crossing accessed via the Sam Road Car park. As described in section 6, this methodology provides the least disruption to the local community.

Timescale

9.8.58 Envisaged to be in the order of 1.8 years

9.9 Summary

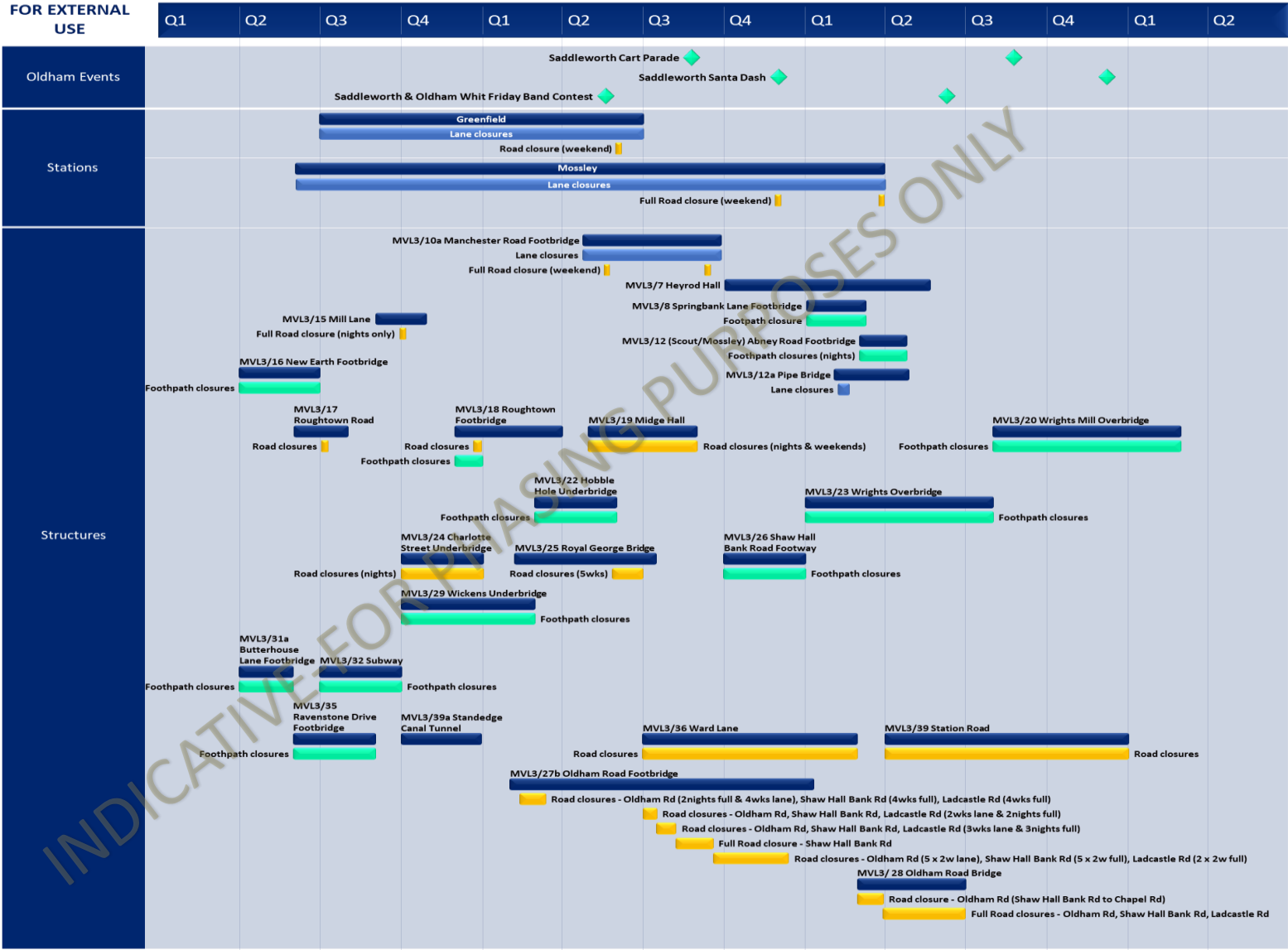
9.9.1 I believe that the selection of both strategic and satellite compounds has been carefully ascertained, taking due cognisance of efficient delivery, traffic flows, effects on the local community and environmental issues.

9.9.2 It is also important to ensure that the set-up of each compound is common with regards to access/egress, Traffic flow, hardstanding and drainage, services and security.

- 9.9.3 Left turns into and out of site compounds will be used as far as reasonably practicable to reduce congestion at site entrances and exits
- 9.9.4 Where rail-based delivery is not reasonably practicable, the highway network will be used. Shuttle buses for the workforce and staff will be provided from key locations to minimise additional traffic on the highway.
- 9.9.5 I believe the objections have been addressed against each individual compound selected

10. STAGING OF THE WORKS

- 10.1.1 The staging of the works has been carefully considered to minimise impacts on the local community and businesses. A combination of road and rail access will be used to reduce disruption where possible.
- 10.1.2 Strategic Compounds will be implemented to minimise traffic congestion, especially during peak periods. Designs have been de-risked where third party inputs are required, as demonstrated by the planned closure for the construction of Oldham Road Bridge.
- 10.1.3 Standardisation of designs will support efficient delivery, while the use of satellite compounds will further enhance logistics and programme efficiency
- 10.1.4 As a matter of course, sequence or staging, along with any out-of-hours working and road diversions, are communicated and discussed with all of the emergency services, and any contingency plans are agreed prior to the work commencing.
- 10.1.5 The diagram below indicates the construction sequence, and it can be seen that road and pedestrian diversions do not overlap where the construction is geographically close, for example, Station Road and Ward Lane, preventing compounded disruption.
- 10.1.6 The diagrams below also indicate that consideration of local events has been considered and will be continually updated after liaison with the relevant body or authority.
- 10.1.7 Please note that the plan below is indicative only and represents the phasing considerations being made for these works. The plan is subject to rail access being agreed in line with wider industry access policy and procedures, and is subject to change.



Summary

10.1.8 I believe that during the early stages of design and with construction input, the staging and logistics in delivery have taken due cognisance of both the efficient delivery and the effects on the local community and businesses.

11. WITNESS DECLARATION

11.1 Statement of Declaration

11.1.1 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.

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

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