

	Bethell Construction - Form	Form Ref: BCL / FRM / 090
	Method Statement	Issue No.: 2 Issue Date: 04.01.24 Originated By: Nick Leigh Approved By: Joe O'Leary Page: 1 of 14

Contract number: B1512	Client: Bury Council	
Milltown Street Cycle Bridge		
Document Ref B1512/MS	Rev C	15/04/2025

1. INTRODUCTION

This methodology has been developed specifically for the construction of Milltown Street Cycle Bridge and generated based on undertaking the proposed tasks required to complete the works in a manner that removes or reduces risk to the health, safety, and environmental impacts of all parties potentially affected by the works.

The project aim is to construct and install a two-span footbridge / cycle bridge across the River Irwell to replace the original bridge which was destroyed by high river levels in December 2015. The new bridge will be a Platt Truss structure with a clear width of 3.5m supported on piled reinforced concrete bank seats / abutments with an intermediate pier constructed close to the south bank. The north span will be approximately 42m and the south span will be approximately 10m. A reinforced concrete and structural steel ramp structure will be constructed to provide access on to the south end of the bridge and a raised footpath will be constructed at the north end.

This document explains the proposed methodology and sequence to allow safe execution of the proposed Milltown Street Cycle bridge. The works briefly include:

- Site Establishment including access routes and hardstanding.
- Site clearance in the areas of the abutments and southern approach ramp.
- Demolition & removal of the remaining section of footbridge and pier located at the south bank.
- Excavation for the construction of the new bridge abutments. This activity will include the removal from site of invasive weeds within the site which prominent around the location of the south bank seat / abutment.
- Establish working area on the south bank of the river at the toe of the river bank to facilitate the construction of the intermediate bridge pier.
- Installation of insitu concrete piles for the pier, abutments and ramp foundations.
- Construction of reinforced concrete bridge abutments, pier & south approach ramp.
- Brick cladding to the bridge pier & bridge abutments.
- Fabrication, transportation and installation of the two span steel superstructure & steel access ramp.

2. LOCATION

The works are located over the River Irwell close to Radcliffe town centre. The northern side of the bridge is where the main compound facility will be located, this is on Rectory Lane.

What Three Words location for compound location: ///belt.leads.wins

The south side of the bridge is accessed from Pioneer Mill at the end of Milltown Street.

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What Three Works location for the south abutment works:///soft.keys.gifts



3. ENVIRONMENTAL CONSIDERATIONS

The works will take place directly alongside the river Irwell and the removal of the remnants of the original structure along with the construction of the new bridge pier will require some work to be carried out from directly within the river channel. The River Irwell and its environs are recognised as an ecologically sensitive receptor and the works will be carefully planned to mitigate the risk of causing any environmental harm.

We will operate in an environmentally responsible manner across the project, ensuring we do everything reasonably practicable to ensure the impact our works have on the environment is kept to a minimum. We have adopted and developed practices to mitigate our impact on the environment and have developed an Environment Management System (EMS) in line with BS EN ISO 14001:2015. We are constantly seeking new initiatives and innovative solutions that will further reduce our environmental impact.

In accordance with the Bury Council Planning Decision Notice and Environment Agency requirements, during the mobilisation period the Bethell Project Management Team will produce a detailed Construction Environment Management Plan (CEMP) and submit to the planning authority for approval prior to commencement of the works

Invasive Species Management

Japanese Knotweed, Giant Hogweed and Himalayan Balsam have all been identified on site with particularly heavy infestations around the south abutment and bridge pier location.

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An Invasive Species Management plan will be produced and following this a detailed method statement for removal from site and / or treatment. These documents will be submitted the LPA as required by the pre-commencement condition.

6. Methodology

Site Establishment

We propose to set up a main compound to the north side of the bridge and satellite toilet provision will also be established within the working area on the south side of the bridge.

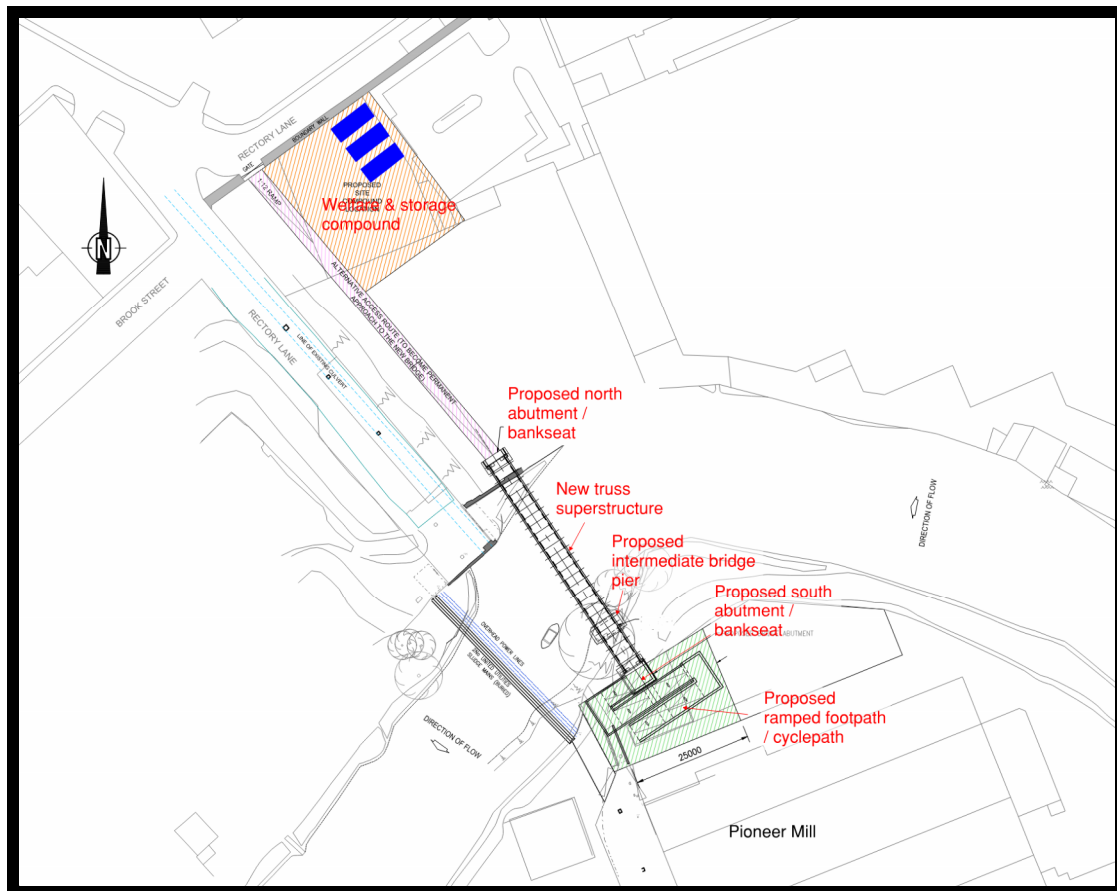
The compound and the working areas for the north and south abutments will be securely fenced and segregated using 2.0m high, anti-climb, Heras type fencing double clipped and braced in accordance with the manufacturer's recommendations.

Welfare facilities are always provided in accordance with 'Schedule 2 of CDM 2015' and for a scheme of this nature will include purpose designed, secure, anti-vandal units with the following as a minimum:

- Site office/office
- Meeting Room
- Kitchen/Staff Toilets
- Canteen/Drying Room
- Male & Female Toilets
- Stores

The facilities will be established adjacent to Rectory Lane on the north side of the bridge and are shown on the site plan below

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Site Clearance

Enabling Works

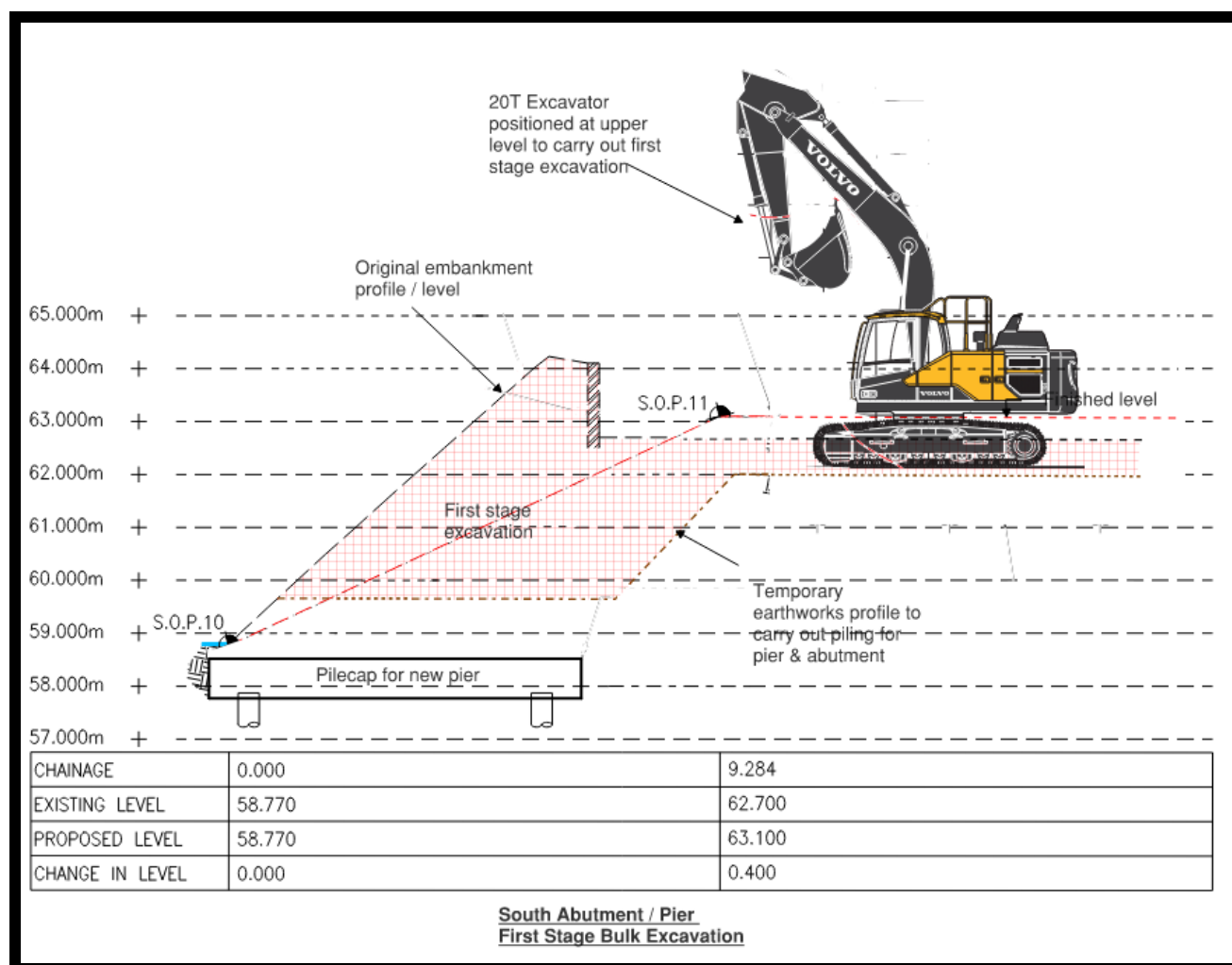
On the south side of the river there are several structures within the existing compound where the ramp will be constructed. These will require demolition / removal:

- Single storey brick building will be demolished by specialist demolition subcontractor. All arisings to be split into separate waste streams and removed from site to recycling centre.
- There is a buried shipping container located next to the building. This will be exposed with an excavator and the steel framework loaded into wagons for disposal at waste recycling centre. Any remaining items within the containers will be carefully assessed prior to disposal at suitable waste recycling centre or licenced tip. The voids will be backfilled with imported 6F2 material compacted in layers.
- The masonry boundary wall to the rear of the compound will be demolished with an excavator. It will be pulled in to the compound and the rubble arisings will be removed to a re-cycling centre.

The existing building will be demolished by a local specialist demolition contractor. We are not aware of any asbestos survey and in its current condition, it is considered too hazardous for a survey to be carried out. The demolition will therefore proceed with an attendant asbestos supervisor carrying out a watching brief for any possible ACM. If such material is found, works will immediately stop whilst testing is carried out and if required a removal plan put in place. Works will be carried out by the demolition team and wastes segregated in to separate streams for re-cycling.

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Once demolition of the upper-level structures is complete, the embankment will be stripped of topsoil and bulk excavation will commence. These materials are contaminated with invasive species including Giant Hogweed, Japanese Knotweed and Himalayan Balsam. There is no space on site to treat or bury the contaminated material and therefore it will be disposed of at a licensed tip as Class U1B. The excavation and disposal of the contaminated material will be carried out under the control / supervision of an Invasive Weed specialist and in accordance with the Invasive Weed Management. The material will be excavated with a 20tonne excavator positioned on the upper platform from where it can reach to the toe of the existing embankment. All excavation will be drawn back towards the excavator and loaded into tipper trucks for site removal. Care will be taken to biosecurity measures detailed in the Invasive Species Management Plan. .



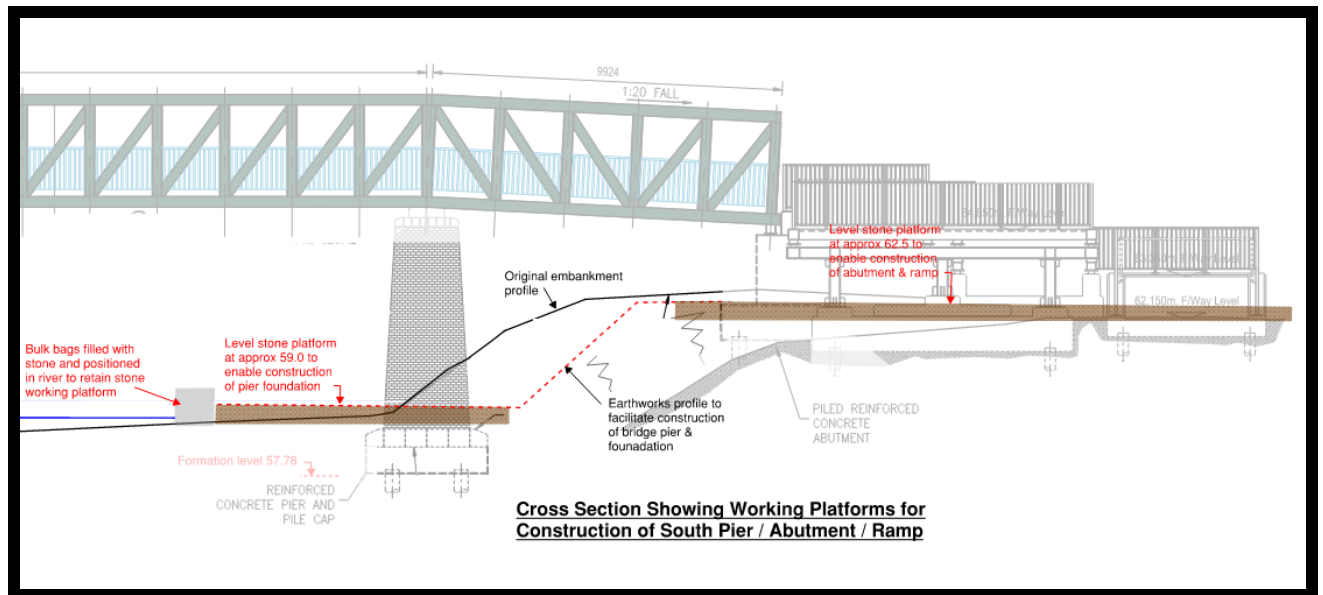
Once the upper piling platform footprint has been reduced to formation level, recycled 6F2 will be spread, levelled and compacted as required by the temporary works design for the piling platform. A stone access ramp will be constructed from the upper piling platform to the bottom of the river embankment. The ramp will be designed to enable the excavation equipment and piling rig to safely access the lower level. Once access has been made to the edge of the river, the excavator will track down and place a series of bulk bags filled with no fines aggregate along the river edge. Water trapped by the placement of the bulk bags will be subject to a fish rescue prior to dewatering by suitably qualified ecologist (as per CEMP) and any fish found will be re-located a suitable distance upstream of the works. Dewatering will be done via pumps with inlet screening to a maximum of 10mm to ensure no fish are drawn into the pump. A geotextile membrane will be laid over the existing area on the edge of the river to form a

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separation layer and gritstone MOT Type 1 will be placed over it, compacted up behind these bags to provide a stable working platform for the bridge pier construction. The upper & lower working platforms are shown in the sketches below:



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A long reach demolition machine will access the low level via the ramp to remove the remnants of the original bridge. Working from the lower platform, it will crop the parapets from the remaining bridge section and lift them down. With the weight of the bridge reduced as much as practicable the machine will then lift the steel from the pier and place it on the upper stone platform from where it will be cut into smaller sections and removed from site for recycling. No bridge arisings or plant will remain on the lower platform outside working hours.

The masonry pier will be demolished by using a 20tonne excavator with a hydraulic impact hammer interchanges with a 2' bucket. The machine will be positioned on the lower platform and to the south of the pier from where it will "pecker" the pier to dislodge the large stone blockwork. As far as possible, the stone blocks will be kept in whole pieces and drawn back on to the working platform keeping debris entering the river to an absolute minimum. The machine will pick up the stone blocks and transfer the up to the higher-level platform and removed from site to a re-cycling centre.

Bored piled foundations will be carried out by a specialist subcontractor and a Sectional Flight Auger piling ring has been selected which can safely access the lower level piling platform via the stone ramp. This rig is non-vibratory:

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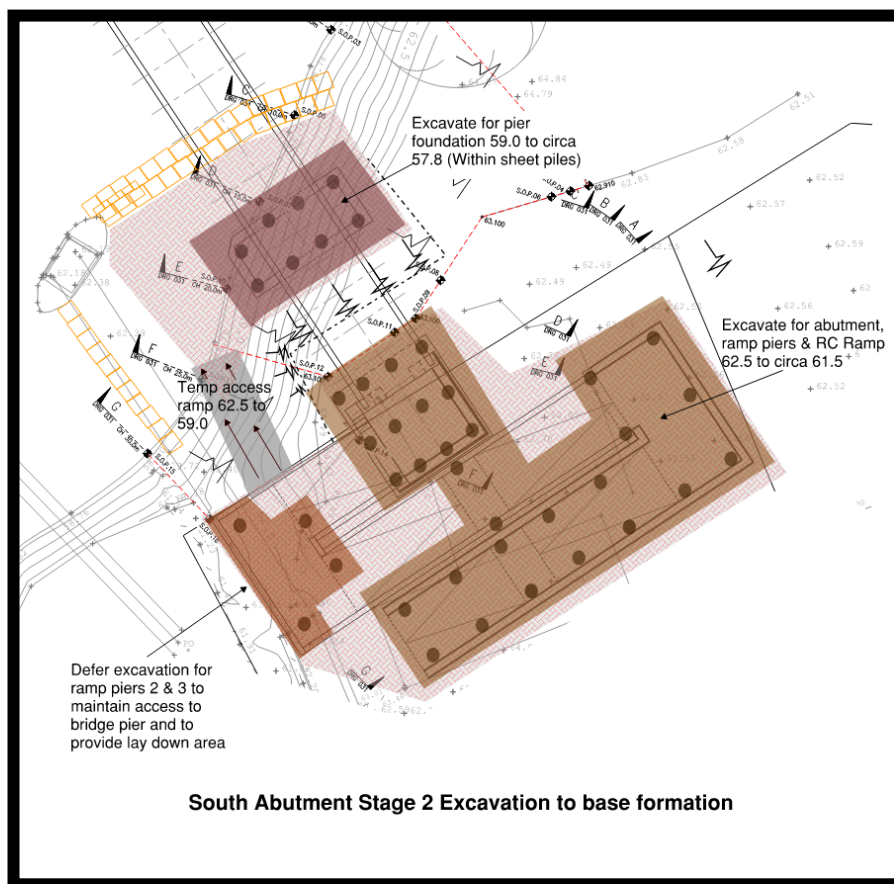
South side piling will commence on the bridge pier from the lower-level piling platform. This platform is planned for 59.0 AOD approximately 1.2m above pile cut off level. Prior to the commencement of the works, Bethell will register with the Environment Agency Greater Manchester Merseyside & Cheshire area to receive flood warnings and Schedule 8 Heavy rainfall alerts for the duration of the activities and (a) take all necessary steps, including appropriate mitigation measures, to ensure that the activities do not result in an unacceptable increase in flood risk to any third party (b) if requested by the Environment Agency, remove all plant, equipment and structures from the watercourse within 2 hours. The rig and all equipment will be moved to the upper level outside working hours. It is expected to take 2 days to install the bridge pier piles and then the rig will carry out the upper-level piling for the bridge abutment and the ramp foundations all of which will be installed from a piling platform level of 62.5 AOD.

A close sheeted coffer dam excavation with hydraulic waling support frame will be designed and installed at the position of the bridge pier. The trench must not be installed with vibration hammer to ensure there is no disturbance to fish in the river. The excavation below piling platform level will be approximately 1.3m. A sump within the coffer dam will be dug from where any incoming ground water filtering through the stone platform will be pumped to maintain a dry excavation. The excavation for the pile cap is shown on the sketch below:

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and then a pile cropper will be mounted on the excavator and connected to the auxiliary hydraulic system. The cropper will be lowered over each pile in turn and the hydraulic rams will crush the surplus concrete. Sleeves will be pre-positioned around the reinforcement bars so that they are not bonded to the concrete and are clean ready for construction of the pile cap.

Following installation of piles to the south abutment and ramp, the area will be excavated approx. 1m deep to the required formation level. In this area the excavations will be battered back to a safe angle. The foundations for ramp piers 2 & 3 will be deferred until the end of the RC works to provide a working area for a crawler crane to service the construction of the bridge pier, abutment and RC ramp. This excavation arrangement is shown on the sketch below:



Reinforced concrete works will commence with the bridge pier and progress to the bridge abutment and ramp structure as per the included programme. Craneage will be provided by a crawler crane positioned to the west of the bridge abutment. This is in the location of the bridge pier pile caps (piers 2 & 3) and therefore these will be deferred until completion of the abutment, ramp and pier. The crawler crane will be utilised for the smaller concrete pours and larger pours to the bridge pier, abutment & ramp will be placed with concrete pump.

Once the bridge pier and bearing plinths have been cast, the brickwork cladding will commence. The precast blocks to the base of the pier and first lift of brickwork will be constructed from ground level. An access scaffold will then be erected around the pier with a loading bay positioned on the west elevation. The scaffolding will be subject to design taking stability into consideration if flooding occurs. The crawler crane will supply the bricklayers with packs of bricks and ready-mixed mortar tubs on to the loading bay as required.

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The scaffolding to the bridge pier will remain in place to provide bearing access during the installation of the steel bridge deck.

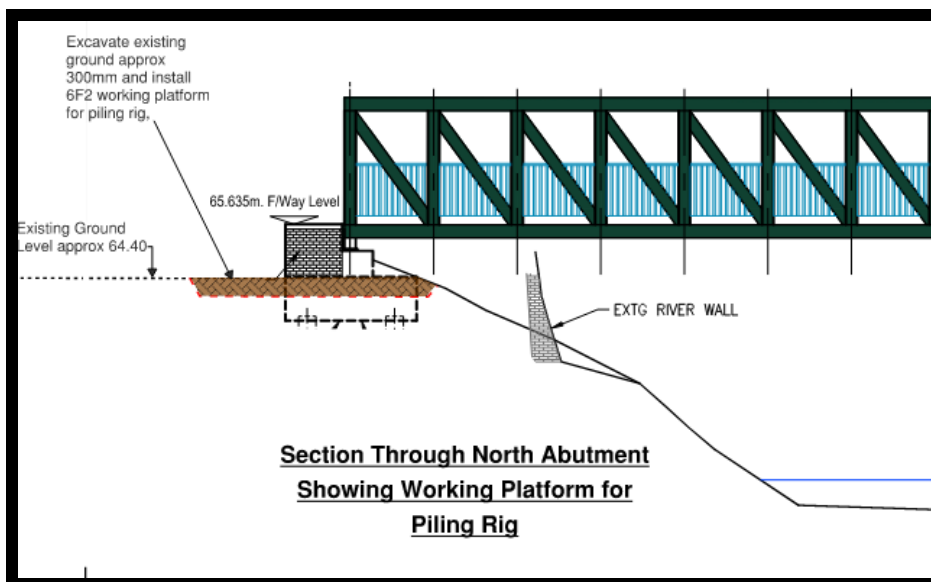
Once the scaffolding has been dismantled and removed from site, the lower working platform will be removed to reinstate the riverbank / water edge to its original condition. A tracked excavator will access the lower working platform via the temporary ramp and excavate the stone working platform down to the geotextile separation layer, taking care not to disturb the original formation sand and gravel forming the river edge. The stone will be loaded into a tracked dumper which will transfer the material to the upper working area from where it will be removed from site. When the stone working platform has been removed, the bulk bags forming the river stank will be individually lifted by the excavator using the lifting straps and loaded into the tracked dumper for removal. Any stone spillage from the contents of the bulk bags is to be carefully removed by the excavator and then the geotextile membrane removed so that no remnants of the temporary works remain within the river channel.

The temporary stone access ramp will be removed by the excavator positioned on the upper level and removed from site. Following this, all disturbed areas of the riverbank will be soft landscaped and seeded with appropriate native riparian seed to stabilise the banks and reduce the spread of invasive species.

Northside Works

Whilst the programme critical path is focused on the RC works to the south abutment, bridge pier & ramp, the north abutment construction will be carried out concurrently.

The north abutment sits in an elevated position behind the existing river wall. A working platform for the piling rig will be prepared by making a shallow excavation and backfilling with circa 300mm of compacted 6F2:



The piling platform will be prepared so that CFA piling can commence just in advance of the required date of the piling commencement to the south bridge pier. The 8 piles to the north abutment are expected to take no longer than 2 days after which the piling rig will be re-located to the southside of the river. The piles will then be allowed to cure prior to excavating to formation level and trimming with a hydraulic pile cropper. The construction of the FRC works to the bridge abutment will then follow with lifting requirements provided a tracked excavator positioned to the north of the abutment (away from the river).

The north side area will require preparation ready for delivery, assembly and lifting in of the main bridge span. The assembly & crane area will be levelled and compacted with a bulldozer and towed roller. Plate

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load tests will then be carried out on the formation to finalise the temporary works design for the crane platform based on the lifting plan and calculated crane outrigger loads. Recycled aggregate will then be imported and spread levelled and compacted to the defined areas incorporating geogrid reinforcement as per the temporary works design and further plate load testing carried out to confirm compliance.

The crane will be positioned so that there is no load imposed on the river wall.

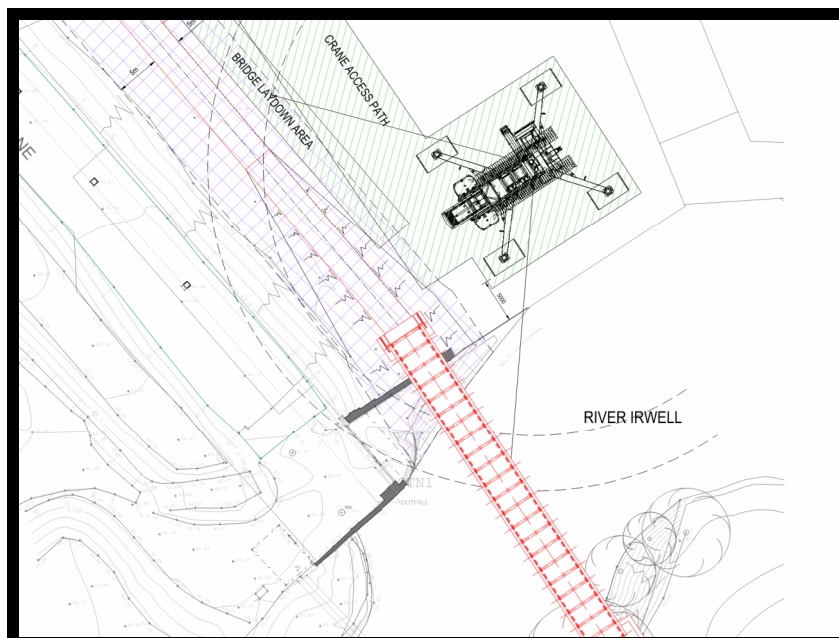
It is proposed that the bridge assembly area will be aligned with the new access footpath. The area will be excavated to formation level and the subbase laid to form a regulated level area. Temporary concrete pads will be built at predetermined positions which will provide a foundation for steel trestles supports to the bridge deck as it is assembled.

Bridge Assembly and Installation

The main bridge span will be delivered to site in two equal sections and be complete with parapets and the combined waterproofing / anti slip material factory applied to the deck. Temporary steel trestles will be set up on the prepared pad foundations and the bridge sections off loaded from the delivery vehicles with an assembly crane operating in accordance with a predetermined lift plan. The bridge sections will be aligned horizontally & vertically on the trestles and the geometry confirmed. The two sections of the main span will be bolted together.

Whilst the bridge is in the assembly area, cable ducts will be threaded through steel hangers attached to the underside of the bridge.

The installation of the bridge will be in accordance with lift plan with a mobile crane set up on the crane platform. A preliminary indicative lift plan is shown below:



The bridge will be lifted lifting eyes to avoid damage to the protective paint system and landed on to the bridge bearings which will have been prepositioned on the supports. Access to the bridge pier will be via the access scaffold already installed during the pier construction. Once the bridge is in position and checked for correct alignment, the lifting gear will be removed and the lifting eyes capped.

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The smaller bridge spanning from the pier to the south abutment will be installed following the main span with an installation crane positioned on the south side of the river this will proceed to install the ramp steel work on to the supporting piers.

Completion Works

The approach ramped footpath to the north side will be brought to level with granular fill compacted in suitable layers. Electrical ducting will then be laid along the path followed by subbase and then the path edgings. The fencing will then be installed either side of the footpath. The sub base will then be trimmed to level between the path edgings and the binder course and surface course laid using a mini paver. The embankments will then be finished with topsoil and seeded.

To the south of the bridge, the paved apron at the access point to the ramp will be excavated, concrete edgings laid and then surfaced.

Finally the new security fencing will be installed and the site temporary fencing removed.

Environmental Controls

- Prior to the commencement of the works, Bethell will register with the Environment Agency Greater Manchester Merseyside & Cheshire area to receive flood warnings and Schedule 8 Heavy rainfall alerts for the duration of the activities and (a) take all necessary steps, including appropriate mitigation measures, to ensure that the activities do not result in an unacceptable increase in flood risk to any third party (b) if requested by the Environment Agency, remove all plant, equipment and structures from the watercourse within 2 hours. However, it will not be possible to remove the bridge pier scaffolding within this time frame once it has been installed.
- River levels and weather forecast to be monitored throughout the contract by reference to the Pioneer Mills monitoring station and the Met Office forecast. A water level staff will also be established as a point of water level reference so it can easily be seen if the river level is rising or falling. During the works required close to the river level for construction of the pier, and removal of the remaining section of the old bridge the daily river status will be classified as follows



Green – River at normal summer level and no rain expected. Works to continue with regular checks to ensure river level is not rising.



Amber – River level higher than normal summer level but does not exceed 58.5AOD and river level is **not** rising; or prolonged rain forecast. Works will continue but river level constantly monitored, and all personnel / plant prepared vacate the low level works immediately if conditions change.



River level rising and / or exceeds 58.5AOD and / or prolonged heavy rain forecast. Low level works will be suspended until conditions improve. Access to river will be prevented by placing barriers at the top of the access ramp.

The river level status and weather forecast will be discussed / briefed to all personnel at the daily start of shift meeting.

- Plant refuelling will be carried out at designated locations risk assessed for position away from the river and drainage outlets. Spill kits will be positioned within each machine and on the refuelling vehicle. Gas oil will not be stored on site but will be brought in by bunded delivery bowser as required.

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- Operatives and will be trained in the use of spill kits and will immediately respond to any occurrence such as a hydraulic leak.
- All static plant including pumps, generators, compressors etc, will be provided will “plant nappies” lined with Enviro Pads.
- All COSHH substances will be stored and used from drip trays.
- Concrete washout skips will be located at both abutments.