carillion

Principal Contractor: Carillion

Work Package Plan

Kings Cross Platform Y

Civils Works including
Piling York Way Ramp and The Excavation for the Retaining Wall.

KCE/WPP/CIV/006

ECML – Kings Cross – Gasworks Tunnel

April 2009 – December 2009

					Network Rail Acceptance of Sections A1, A2 and B3 only		
Version	Prepared by	Date	Approved by	Date	Required Y/N	Acceptance by	Date
01	C. Lystor	12/3/09	S. Costello		Y		
A1							
A2							
A3							

Table of Contents

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A Work Package Details

A1 Description of work

As part of the overall redevelopment of Kings Cross Station there is a requirement to add a new platform to the East of the existing station. The platform is currently known as platform Y and will be incorporated into the station layout upon commissioning at Easter 2010. This document is the master work package plan that covers all work and details on how the interface risks between the various elements of the work will be managed.

The works include the following:-

- Closure of York Way Ramp.
- Removal of Cobbles and all salvage material.
- Piling
- Cutting of the existing York way ramp back to the piles.
- Concreting for the retaining wall.

All works shall be carried out in accordance with the relevant Network Rail company standards and procedures.

Works shall be carried out according to the methodology as specified. The site specific risks will be summarised on a daily task briefing sheet. A register of any changes to the planned methodology shall be maintained and managed in the site office located at the Kings Cross Project depot.

Prior to works commencing, contents of the specific task briefing sheets shall be briefed to the work party. The work party shall then sign the task briefing record to confirm they have received and understood the brief. Records shall be maintained in the site office for information. All works shall be carried out in single shifts and therefore no shift handover arrangements will be required. At the end of each shift the work site shall be tidied and any unsecured or waste materials shall be removed.

If any major changes to the agreed method of work need to be implemented, the proposed change(s) needs to be approved by the Project Manager and NWR. Once the change(s) have been approved the relevant WPP and task briefing form(s) needs to be amended by appending hand written details of any new tasks that are identified and the control methods to be put in place. For minor changes the WPP and task brief sheet can be amended by the Supervisor in charge of the works. The amended task briefing form needs to be briefed to the relevant staff and signed to acknowledge the brief.

Site security will not allow any personnel on site unless they have received a site induction and have signed in at the main office and have been site briefed with the valid daily task briefing.

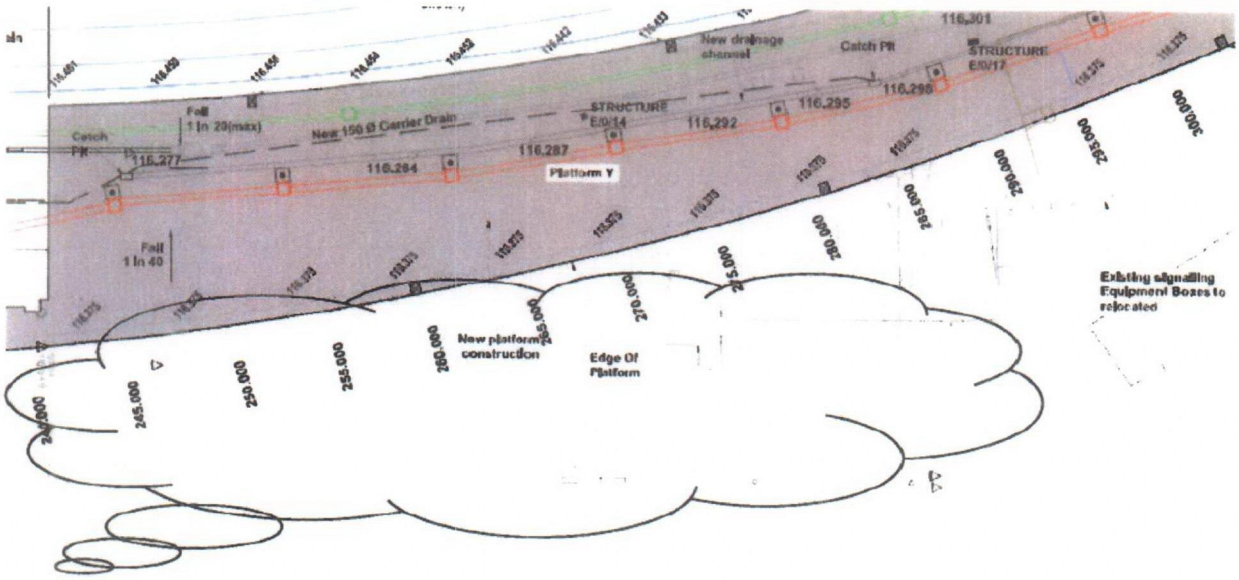
METHODOLOGY

Installation of gate

On commencement of the project York Way ramp will be closed to public access. It will be necessary to maintain the access to facilitate the continues use for the signal box entry, emergency Metronet egress and site deliveries. Initially the site will be secured with haras fencing while a gate is constructed. Prior to any construction works starting onsite to prevent public access onto site a security gate will be installed at the entrance off York Way. A patrolling security guard will operate this gate to allow access to the Metronet site.

Removal of Salvage materials

As Kings Cross station is a grade 1 listed building all materials which appear on the salvage strategy in the immediate area of the piling will be removed prior to any works taking place. All materials will be placed on pallets and transported to designated storage area at Cricklewood.



Area of salvage materials

Piling Works

Prior to any piling operations the engineer will complete a CAT and genny scan and any known services shall be disconnected. Where the CAT and genny identifies services excavation shall proceed with care and must have a trained banksman present at all times.

Due to the close proximity of York tunnel and the 600 dia. piles a trial trench shall be undertaken on the first 9 600 dia. piles. The excavation shall extend down to the York Tunnel abutment foundations to both ensure that there is on design conflict between the piles and tunnel and to remove any obstructions. Samples shall also be taken on the backfill material to test for contamination. The excavation shall be backfilled with a suitable self compacting material.

The above trial trench procedure will then be first 6 450 dia. piles.

Due to the close proximity of the piles an excavate and cast one pile and miss two system will operate. This will allow the piling concrete to sufficiently cure before excavating along side it to cast the next pile. During the piling stage an excavator will remove all the spoil onto a stock pile for removal offsite.

Sketch E1982/02/D001 in appendix A shows the planned positioning of machinery for piling. For the piling the rig will set up in a safe position to start the piling. As the rig bores down the arisings are deposited at the side of the pile and a mini excavator will clear these during the works to a suitable stockpile location. Once the correct depth is achieved concrete will be poured into the hole and the mini excavator will push the steel cages into position. This procedure will then be carried out for the 4th, 8th, 12th 16th and 19th before going back to restart the procedure for the 2nd pile.

Constructing the Capping beam:

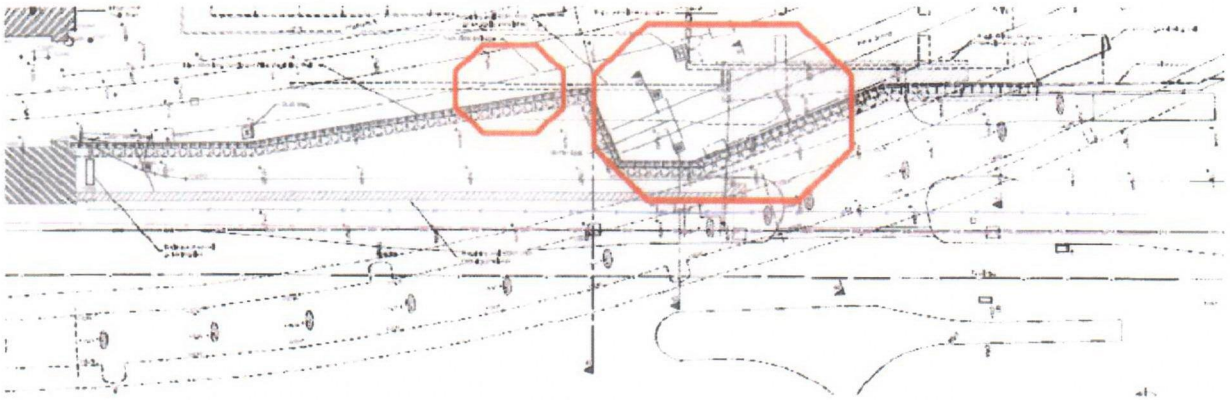
Prior to constructing the capping beam we will reduce the ground on the ramp to the top of the piles. After all machine works have been completed on the section steel fixing will begin on the capping beam. The majority of works will be accessed by the scaffolders from the ramp side of the new wall. To avoid the risk of falls of materials the construction and steel fixing of the capping beam will take place before the cutting operations for the new retaining wall. This will ensure that all works for the capping beam can take place at the existing ramp level and reduce the need for working near excavations and working off scaffolding. Once the steel is in place the 14t excavator will help the jointers to lift the shuttering into place. Concrete will then be placed with a concrete pump and allowed to cure before striking the capping beam and moving onto the next section.

Excavating for the Retaining wall

Once the piles and capping beam have sufficiently cured the York way ramp prop system will be removed to allow for the cut of the existing ramp back to the pile face. Prior to removing the props the temporary works co-ordinator will check the surrounding ground conditions and sign off the permit to dismantle. Each prop will then be loosened from the wall before to ensure that there is no movement from the wall.

Once the temporary works co-ordinator is satisfied that the retaining wall will not collapse the props will be removed one at a time. The bolts from the retaining wall shall be removed first and then the concrete base to ensure that there are no additional movements from the RMD sections when the higher bolts are being removed from the retaining wall.

Once the props are removed demolition of the existing wall can start. Once the piling has been completed and adequately cured, the retaining wall will be taken down to the level of the York Way Ramp. Excavation will then take place on top of the ramp down to the piles while the remainder of the retaining wall is in place. The existing level will then be reduced to the top of the piles. Due to the height and distance away from the piles and the retaining wall at locations circled in the sketch below the ground at the ramp level will be further reduced to a suitable depth depending on ground conditions before the retaining wall is reduced. Once the excavation is complete the area will be fenced off and the removal of the brick wall can continue carefully with all bricks being paletted and taken to Cricklewood.



Once the retaining wall as been removed the remainder of the material will be removed from the building cut by a 25T T excavator set up on Platform 1 – inside the site hoardings and will be disposed of by one of two means:

- Road haulage with a one way system set up with loaded wagons exiting site via Holloway Road.
- Fill into the gasworks tunnels to make the access safe and to protect existing services.

Concrete to the Face of the New Retaining wall

All shuttering for the concrete pours will be made up on site and all brick ties attached to the shuttering and then lifted into position using the 25T excavator. Prior to lifting the shuttering in place scaffolding shall be erected by competent personnel. Approximately 15mm dia. hole will then be drilled into the piles for a push pull system to support the shuttering. Due to the length of the retaining wall the concreting shall be done in approximately 20m sections.

Before lifting the shuttering into place any alterations required to the scaffolding will be carried out by competent personnel. The excavator will then lift the shuttering into place under the control of a trained and competent banksman. Jointers will then complete the setting up of the shuttering by connecting and tightening the push pull system and level and align the shuttering.

The concrete wall will then be poured with a concrete pump and at the design metre rise per hour.

Due to the weight restrictions on the ramp all concrete deliveries will be by mini mixers carrying a maximum of $4m^3$ will be used.

Striking of the shuttering will only begin after the concrete has sufficiently cured in relation to the design requirements and specification. The site jointers will loosen the push pull system and the excavator will then take the weight of the chains attached to the shuttering before the push pull connectors are finally untied and the shuttering will then be moved to the next section of wall to pour under the guidance of a banksman.

Brickwork to the Retaining wall

Prior to the brick work starting the scaffolding shall be checked by a competent person and any alterations required shall be undertaken.

The bricks shall only be brought back from Cricklewood when they are required on site to prevent any possible damage to them. The brickwork will then be laid according to the appropriate style and using the designated mortar agreed with English Heritage.