Asset Protection General Guidance Note

Works on or adjacent to the railway

Working near the railway can pose a risk both to your works, our infrastructure and railway operations. We are keen to work in collaboration with our lineside neighbours to assist in the timely completion of your works whilst safeguarding you and the operational railway.

Asset Protection is the team within Network Rail whose role is to assist in achieving this objective.

The notes below are general guidance for carrying out works over, under or adjacent to Network Rail infrastructure and the operational railway. They should be read in conjunction with activity specific guidance relating to your planned works, which have been issued based on information received to date. Further activity specific guidance is available in line with the schedule supplied with this document. Please request any further guidance notes you require. It should be noted that further site-specific conditions may be applied by Network Rail following the initial meeting when more detailed proposals and actual methods of carrying out the works have been discussed.

1. General Operational Railway Safety Considerations

The railway adjacent to the site should be considered to be operational 24 hours a day and any overhead electrified equipment present is energised at 25kV. No plant, materials or equipment are to be placed in a position where in the event of accident, malfunction or failure it could fall within 4 metres of railway boundary. If this cannot be complied with further discussions should be held with our Construction team.

An initial meeting will be arranged to discuss your works and the interaction with the operational railway at which safety arrangements and Network Rail (NR) requirements will be agreed.

Prior to work commencing on site, Network Rail will hold a formal safety meeting with the proposer of the works (proposer) and Contractor and give a safety brief to all site personnel to ensure awareness of the hazards of working in close proximity to the operational railway including, where applicable, the 25kV overhead line or third rail electrification equipment.

2. Railway Industry Standards

Where applicable, projects are required to comply with the appropriate railway industry and Network Rail Standards. These can be obtained from the following suppliers:

Railway Industry and Group Standards (RSSB)

Willsons Printers, Highlander House, Cross Street, Newark, Nottinghamshire NG24 1PP Tel: 01636 702334.
Or **via** the Railway Safety and Standards Board Website https://www.rssb.co.uk/

Network Rail Line Standards can be purchased from:

Customer Support, Technical Indexes Ltd, Willoughby Road, Bracknell, Berkshire, RG12 8DW
Tel: 01344 404409 e-mail: cservices@techindex.co.uk

3. F10 and Construction Phase Plan (CPP)

Network Rail will require a copy of the F10. This must identify the presence of an operational railway / Station adjacent to the site together with a copy of the CPP. The CPP should include risk assessments for working on / adjacent to an operational railway and overhead line / third rail electrification if applicable. The CCP shall be submitted to Asset Protection for review. The works are to be carried out in accordance with the Health & Safety at Work Act 1974 and, where applicable, the Construction (Design & Management) Regulations 2015.

4. Easements, Wayleaves and Licences

Permanent installations crossing or positioned on Network Rail property will require an easement / wayleave which must be in place prior to works commencing on site. Any temporary occupation of Network Rail land, such as for the erection of scaffold, require a licence.

All applications should be made to Network Rail's Property department at PropertyServicesLNEEM@networkrail.co.uk except for Statutory suppliers proposing works in relation to utilities and services, in which case the Easements and Wayleaves team should be contacted at Easements&wayleaves@networkrail.co.uk.

Please make contact as soon as possible as the process can take a minimum of 12 weeks to put in place. Progression of works with Asset Protection can continue in parallel with the Wayleave application, however, it should be noted that any costs incurred will be reimbursable by the proposer whether or not the Wayleave is granted.

Where the works affect the support to Network Rail's assets, the proposer may be required to issue a Party Wall notice through Property Services.

5. Network Rail Costs, agreements and insurance requirements

Network Rail is publicly funded and is obliged to recover any costs incurred due to outside party works, unless covered by another agreement.

The proposer will be required to enter into a Basic Asset Protection Agreement (BAPA), under the terms of which any costs incurred by Network Rail in connection with the works will be reimbursed. An Agreement and associated estimate of Network Rail's costs will be prepared when the level of involvement has been established and must be signed by both parties before works which could impact on Network Rail assets or infrastructure commence. The agreement also requires the proposer to take out the appropriate level of public liability insurance. The level required will be advised by the Asset Protection representative.

Asset Protection services may include, but not necessarily be limited to:
Review of proposals
Project Management
Review of RAMS
Planning and provision of railway possessions & isolations
Provision of attendance and supervision

Attendance at safety meetings
Review of any relevant permanent / temporary works designs

The amount of Network Rail supervision will depend on content, location and method of carrying out the work.

Network Rail requires to be reimbursed for any costs incurred by inefficient use of Network Rail resources, including train delays caused by over-run of possessions / isolations and short notice cancellations.

6. Network Rail Access Requirements

Access to Network Rail property shall be under safety supervision arranged through Asset Protection.

When working on Network Rail land at a distance greater than 3 metres from the nearest rail, Site Access Permits (SAPs) may be required.

Non 'Personal Track Safety' (PTS) trained personnel working within 3 metres of the nearest rail will require a Track Visitor Permit (TVP) and are required to complete a medical self – assessment form. Railway safety supervision will be provided by Asset Protection.

Network Rail requires 10 working days' notice for issue of SAPs / TVPs. It should be noted that a maximum of 12 TVPs per person may be granted in any 12-month period. A maximum of 3 TVP holders must be accompanied by 1 competent PTS holder, i.e. 3:1 ratio.

Anyone working on Network Rail property must not exceed a maximum shift length of 12 hours per day, 72hrs in a 7-day week and not more than 13 shifts in 14 days without a minimum rest period of 24hrs. A minimum rest period of 12 hours is required between shifts.

When working on Network Rail property the following must be worn as a minimum:

- full head to toe approved ORANGE PPE
- ankle supporting safety boots, with steel toe cap and midsole (No rigger boots)
- safety glasses, gloves and blue hard hat (unless PTS trained, where white will be worn)

Subject to risk assessment task specific PPE other critical safety equipment may be used in place of NR approved PPE. Green / yellow PPE will not normally be allowed.

7. Programme

A programme of works should be provided to Network Rail at the earliest opportunity. This is required to assist our understanding of railway interface activities and timescales, to enable Network Rail's resources to be planned and therefore avoid delays or disruption to the proposed works. A programme should indicate any railway possession requirements and design and method statement submission dates and include Network Rail review periods, detailed below.

8. Project Directory

A project directory should also be submitted detailing company names and representatives, including as a minimum: proposer, Principal Designer, Designers, independent design check organisation, Principle contractor, key subcontractors, Contractor's Engineering Manager (CEM)

and discipline design and construction Contractor's Responsible Engineers (CRE). See below for CEM/CRE requirements.

9. Site specific Risk Assessments and Method Statements (RAMS)

Detailed written site-specific RAMS are required for any works on / adjacent to Network Rail land. Generic RAMS are not acceptable and will be rejected. Site specific RAMS are to be received by Network Rail to review in advance of the works, not less than 28 calendar days prior to the commencement of the works. For works which involve possession of the track, RAMS should be provided in advance of the Network Rail production planning meeting which takes place on a rolling programme 5 weeks before works are due to be undertaken. Network Rail reserves the right to extend the review period for complex schemes. Asset Protection will issue a letter of non-objection if the RAMS are satisfactory to Network Rail before works commence.

10. Drainage

Suitable drainage or other works must be provided and maintained by the developer to prevent surface flows or run-off onto Network Rail's property.

Storm/surface water must not be discharged on to Network Rail's property or into Network Rail's culverts or drains except agreement with Network Rail. If a Network Rail-owned underline structure (such as a culvert, pipe or drain) is intended to act as a means of conveying surface water within or away from the development, then all parties must work together to ensure that the structure is fit for purpose and able to take the proposed flows without risk to the safety of the railway or the surrounding land.

Provision must be made to accept and maintain existing drainage discharging from Network Rail's property, in the absence of detailed plans all soakaways must be located to discharge away from the railway infrastructure.

The following points need to be addressed:

1. There should be no increase to average or peak flows of surface water run off leading towards Network Rail assets, including earthworks, bridges and culverts.

2. All surface water runoff and sewage effluent should be handled in accordance with Local Council and Water Company regulations.

3. Attenuation should be included as necessary to protect the existing surface water drainage systems from any increase in average or peak loadings due to normal and extreme rainfall events.

4. Attenuation ponds, next to the railway, should be designed by a competent specialist engineer and should include adequate storm capacity and overflow arrangements such that there is no risk of flooding of the adjacent railway line during either normal or exceptional rainfall events.

It is expected that the preparation and implementation of a surface water drainage strategy addressing the above points will be conditioned as part of any approval.

The construction of soakaways for storm or surface water drainage should not take place within 20 metres of the Network Rail boundary. Any new drainage is to be designed, constructed and maintained so as not to have any adverse effect upon the stability of any Network Rail equipment, structure, cutting or embankment. Network Rail reserve the right to request a drainage impact assessment report.

The construction of surface water retention ponds/tanks, SuDS or flow control systems should not take place within 20m of the Network Rail boundary where these systems are proposed to be below existing track level or 30m where the existing systems are proposed to be above the existing track level.

The construction of soakaways within any lease area is not permitted.

Without prior consent, the position of any proposed drainage shall not be within 5m of any Network Rail drainage assets, sensitive operational equipment such as switches and crossings, track joints, welds, overhead line stanchions and line side equipment, and not within 15m of bridges, culverts, retaining walls and other structures supporting railway live loading.

Surface water management during construction works:
The Proposer shall actively manage surface water throughout the construction period. Run off onto or towards Network Rail property must be prevented and must not have a detrimental effect on Network Rail's assets including embankments and cuttings. Excessive ponding at the crest of any railway embankment must not be allowed to occur. Surface water management must consider the impact of extreme weather conditions.

11. Temporary Works

Network Rail require submission of temporary works designs, where in the event of mishap or failure during construction or subsequent use, the temporary works could fail within 3m of Network Rail's boundary.

Dimensioned plans and elevations (indicating the proximity to the railway boundary) and RAMS are required for any temporary works adjacent to Network Rail's property or the operational railway.

Network Rail will assess whether a full detailed temporary works design (including independent check certification) is required to be submitted. It should be noted that a 28-calendar day review period is required.

12. Design Assurance Process (Permanent and temporary works)

Unless agreed otherwise, submission of permanent and temporary works designs for Network Rail's consideration shall be in accordance with Network Rail Standard NR/L2/CIV/003 'Engineering Assurance of Building and Civil Engineering Works'.

The proposer/consultant/contractor must nominate a Contractors Engineering Manager (CEM) using Form F0039 supported by CV and briefing acknowledgement. The CEM is the individual appointed by the Outside Party to coordinate the design and construction of the proposed project and has the overall engineering responsibility for the project, so far as it relates to the railway. The CEM may also undertake the role of Contractors Responsible Engineers (CRE) in a particular discipline.

(For larger/complex projects it may be appropriate to appoint separate CEMs for design and construction, but Network Rail expects all CEMs to maintain contact with each other and NR, as necessary, throughout the project).

The CEM(s) must nominate discipline specific Contractors Responsible Engineers CRE using Form F0040 supported by CV and briefing acknowledgement. The CRE carries overall responsibility for the design and / or construction of the project within a single discipline. The individual proposed should have comprehensive experience of the design / construction activities proposed.

Further guidance on CEM / CRE nomination process will can be provided by Network Rail.

Where required, a Form F001 (Approval in Principle) is to be submitted in respect of permanent works that is on Network Rail property or has the potential to affect Network Rail's infrastructure.

Appropriate supporting documentation shall include, but not necessarily be limited to, an outline feasibility report (including any probable effects on Network Rail's infrastructure), an indicative General Arrangement drawing and outline Design Proposals/Methods of Analysis. Please note when the permanent works are for a Competent Authority, or adoptable on completion by a Competent Authority acting as Technical Approval Authority for the project, that Authority's equivalent Approval Documentation may be submitted in lieu of Form F001.

F002 (Statement of Design Intent) and Form F003 (Certificate of Design and Check) are to be submitted in respect of permanent works, or temporary works where failure may affect the safe operation of the railway or pose a risk to Network Rail assets. Appropriate supporting documentation shall include, but not necessarily be limited to:

- F002, the Designer's Risk Assessment, relevant geotechnical reports, details of the proposed methods of analysis, details of any software packages to be used and details of the staff proposed to undertake the analysis, including relevant experience on similar projects.
- F003, the Designer's and Checker's calculations, including assessment of any permanent or temporary settlement/heave affecting railway infrastructure due to permanent works.

The category check is to be agreed with Network Rail's Asset Protection Engineer in line with NR/L2/CIV/003 or other appropriate standards or industry guidance. Some activities such as design of undertrack crossings, tower crane foundations and working platforms for crane / piling rigs are mandated as requiring a cat 3 check by other design standards and industry guidance.

Again, where permanent works are for, or adoptable by, a Competent Authority, that Authority's equivalent Design and Check Documentation may be submitted.

Network Rail may accept submission of Forms F001 and F002 simultaneously.

At least 28 calendar days are to be allowed for Network Rail's review from receipt of a hard copy of the documents. A further electronic copy is required for Network Rail documents.

The extent of submissions is dependent on the nature of the project. Specific requirements will be agreed during the course of the works.

For works on Network Rail property, copies of the as built drawings and or Health and Safety File may be required.

13. Track Monitoring of NR Assets

Where the works have the potential to introduce ground movements Network Rail may require the monitoring of track and other assets, such as structures, OHLE masts.

The proposer shall produce a monitoring strategy that details the proposed monitoring of Network Rail assets to Asset Protection for comment and acceptance.

Track assets are to be monitored in accordance with NR/L2/CIV/177 throughout the works and for a further period afterwards. Survey work shall be undertaken by the proposer under the supervision of Network Rail.

Design based trigger levels shall also be determined taking cognisance the predicted ground movements.

14. Security of Railway Boundaries

At no time shall the integrity of any railway boundary fence, or other barrier to the railway be compromised.

A railway boundary fence or other barrier must not be removed without written permission from Asset Protection and must be replaced by a temporary structure at least as secure as the original. On completion of the works, the railway boundary fence or other barrier must be permanently reinstated to the satisfaction of Asset Protection. The site shall be made safe and secure at the end of each shift so no trespassers can gain access to NWR property.

Materials or plant must not be stored against railway fencing as they can either damage the fence or aid trespass on the railway.

Equipment such as ladders or access scaffold must not be stored where they could be used to gain access over the fence.

Scaffolding erected near, adjacent to or over any railway fence must include measures to ensure that the scaffold cannot be used to gain unauthorised access over the fence or other barrier.

No permanent or temporary fence is to be constructed within 3 metres of the Network Rail overhead electrified equipment without prior consent. Metal fencing adjacent to Network Rail overhead electrified equipment is discouraged as it is likely that it will need to be earth bonded to the traction earth return system.

15. Temporary boundary measures / fencing.

A temporary fence may be required for works on or near Network Rail land to segregate the works from the operational railway. A Construction Manager will discuss the requirements with you. Temporary fence details must be satisfactory to Network Rail and erected under NR supervision / protection. Depending on its proximity, the fence may require a temporary works design.

Whilst works are being carried out it is required that a secure compound is created so that all equipment / materials are not left open to abuse by vandals.

16. Permanent Fence

In the event of a change in land use as a result of the works immediately adjoining an operational railway line, it is essential the proposer provides and thereafter maintains a suitable fence, e.g. concrete post and weldmesh, galvanised steel palisade, solid wall of concrete, brick or masonry, adjacent to Network Rail's boundary. This is to be agreed in writing with Network Rail Property. The design should be appropriate for the land usage and should preferably be positioned such that future maintenance can be carried out without access to Network Rail property, which would incur Network Rail supervision and costs. The Developer is to notify Network Rail four clear weeks prior to the commencement of all fencing works to enable any necessary supervision/inspection to be arranged. The boundary fence specification is to be submitted for approval by Network Rail and may require submission of a permanent works design. The boundary location is to be agreed with Network Rail Property before these works commence.

17. Cranes, lifting equipment and Piling

All crane working and piling proposals are to be reviewed by Network Rail.
Network Rail requires compliance with BS7121-1:2016 and BS7121-3:2012 Code of Practice for the safe use of cranes – Inspection, maintenance and thorough examination – Mobile Cranes.

And BS7121-2-5:2012 Code of Practice for the safe use of cranes – Inspection, maintenance and thorough examination – Tower Cranes.

Network Rail have worked with industry partners in the development of guidance notes for the safe operation of tower cranes, road mobile and other lifting equipment adjacent to the operational railway.

- CPA Good Practice Guide (June 2014): Requirements for Tower Cranes Alongside Railways Controlled by Network Rail.
- CPA Good Practice Guide (December 2018): Requirements for Road Mobile and other lifting equipment Alongside Railways Controlled by Network Rail.

The CPA documents provide guidance on crane positioning and operations including the calculation of compound collapse radius to establish if proposals pose a risk to the railway, crane de-rating and crane foundation/working platform design. It provides a hierarchy of control measures to be followed when operating cranes and other lifting equipment adjacent to the railway. Tower crane foundation and working platform designs are to be submitted to Network Rail for approval.

The position and use of tower cranes shall be discussed with Network Rail Asset Protection. It should be noted that lifting over Network Rail infrastructure is not permitted unless within a track

possession/isolation. Weathervane of cranes over network Rail property maybe acceptable subject to an Oversailing License agreement with Network Rail Property Department.

Method statements/crane plans are required for any crane operations that have the potential to affect Network Rail assets. They are to indicate technical details of the equipment including de-rated load capacity, operating and collapse radii and diagrams showing jib length, position, outriggers position and anticipated load lifts etc. Drawings should include crane movements and lifting positions.

Ideally mobile cranes should be positioned such that in the event of failure, in a 360-degree arc, the compound collapse radius of jib and load would not fall within 4 metres of the railway boundary. If this cannot be achieved, cranes must only work parallel to or pointing away from the railway and always slew away from the boundary unless works are undertaken within a track possession/isolation. Safeguards must be in operation to stop any sluing over the railway.

Crane lights must not affect train drivers' sighting or sighting of railway signaling, lights to be directed away from Network Rail operational railway at all times.

Copies of all plant certification, working platform and LOLER certificates are to be available for Network Rail inspection.

Piling work must comply with Network Rail Standard NR/L3/INI/CP0063 - Piling adjacent to the running line.

For further details with respect to piling please refer to SG005 'Development and Maintenance works adjacent to the operational railway'.

18. Ground Vibration

Where works are undertaken that introduce ground vibration, monitoring of the ground vibrations and air-transmitted values must be undertaken by the proposer/contractor. The maximum peak particle velocity allowable at Network Rail's boundary is 10 mm/sec. However, this value is to be limited to 5 mm/sec at any Network Rail sensitive receptors.

19. Permanent and temporary Lighting

Permanent lighting proposals, or temporary lighting for the illumination of site for working at night, security or other purposes may be required to be submitted for Network Rail's prior approval.

It should be noted that lighting schemes could interfere with the sighting of railway signalling or distract train drivers therefore Network Rail reserves the right to have any lights screened.

Lighting proposals may need to be approved by Network Rail's Signalling Engineer

20. Temporary or permanent increased use of a level crossing

If your works are likely to involve temporary or permanent increased traffic flows across a level crossing, including construction traffic, consent must be obtained from Network Rail. The proposed use of the level crossing will be assessed and may result in the need to upgrade the crossing to cater for the increased traffic flows. The cost of which will be borne by your project.

21. Traffic Management near the railway including in the vicinity of level crossings

In accordance with the NR&SWA 1991; the proposer of works within 200m of a level crossing (or such other distance registered by Network Rail in the Streetworks Gazetteer) is to consult Network Rail at least one month (28 days) in advance of issuing the commencement notice.

Where there is a risk that traffic flows could be affected by works or site traffic operated in the vicinity of the railway or a level crossing, a site-specific traffic management plan shall be submitted to Network Rail for review. The plan shall mitigate the risk of vehicle incursion onto the railway and vehicles blocking back or effecting traffic flows over a level crossing.

Risk imported to low bridges as a result of site traffic or altered traffic flow must also be considered.

22. Emergency Procedure

Network Rail will produce an Emergency Procedure detailing how trains can be stopped in the event of an emergency and, if applicable, how the power to the electric traction supply can be switched off at this location.

The procedure is to be briefed to all proposer's/Contractor's personnel on site, **including sub-contractors**.

The procedure is to be displayed in site cabins and at the work site when works are taking place. The procedure is not to be displayed to the general public. It is the proposer's/Contractor's responsibility to ensure the procedures are understandable to all site staff and translated into all relevant languages.

The Contractor is to ensure that a person equipped with a mobile phone is available at the work site whenever work is taking place to enable the emergency procedure to be activated if necessary.

If applicable, the Contractor must post warning signs to remind site staff of the presence of high voltage overhead traction electric cables/conductors adjacent to their work site.

Network Rail has the authority to stop the Works immediately if it is considered that the Contractor may compromise the safety of the operational railway. Network Rail accepts no liability for any project costs incurred as a result of this action.

23. Supervision

Operations on / adjacent to the operational railway must be supervised by Network Rail. The degree of supervision is to be determined by the level of risk to Network Rail's infrastructure and operations or to the risk imposed to site personnel or the general public in close proximity to the railway. Network Rail's associated costs are to be borne by the proposer under a Basic Asset Protection Agreement (BAPA).

24. Possessions and Isolations

The works may impose risks to the operational railway such that it is deemed necessary for the works to be undertaken under a railway possession and /or Isolation. The requirement will be discussed at the initial meeting.

A further site meeting will be required to discuss the railway safety arrangements and method of working at 3-4 weeks before works are due to be undertaken.

A possession is a closure of the operational railway and an isolation is a switching off the overhead line equipment. Possessions can either be 'rules of the route' i.e. where there is no interruption to scheduled train services or 'disruptive', where train service alterations are required. There are mandated planning timeframes to each. All costs are to be borne by the proposer. It should be noted that planning timescales for disruptive possessions are considerably longer and attract much greater costs, as compensation is required to be paid to the Train Operators for loss/diversion of train services.

It should be noted that a period of time is required at the beginning and end of each possession to allow Network Rail to establish and remove the safety equipment and undertake the procedures required in order to block the line and isolate the overhead electrified lines. This will result in a reduction of the working time available and should be factored into the construction programme.

Network Rail shall supply all Track Safety personnel and supporting documentation.

For operational reasons, possession duration may be reduced or even cancelled by Network Rail at short notice. The proposer/Contractor must be prepared and make allowance for this in any contract. Network Rail will not be held responsible for any costs incurred as a result of such cancellations, but every effort will be made to provide a replacement possession/isolation at the earliest opportunity.

If the proposer/Contractor cancels a booked possession/isolation Network Rail may still incur costs that will be recoverable.

Where works are to be carried out within a possession/ isolation, the Contractor must provide hour by hour bar charts to demonstrate that the works can be completed in the time available and provide reasonable assurance that they will not over-run. The charts are also required to show at what stages the works can be left in a stable condition in case a possession/isolation is shortened or curtailed. This must be approved by Network Rail as part of the possession planning process.

If over-run of a possession/isolation occurs, then the proposer/Contractor will be expected to reimburse Network Rail for any train delay costs incurred. Written acceptance of this condition is required before works commence. Higher risk works may require completion of additional planning processes.

25. Buried Services Search and Protection

Before breaking of ground and any ground loading on Network Rail land, the proposer/Contractor shall instigate a service investigation to locate the position of Network Rail owned plant and equipment prior to any works on site. This is in addition to utilities searches.

The process detailed within Network Rail Standard NR/L2/AMG/1030 'Working safely in the vicinity of buried services' shall be followed, including the issue of a Permit to Dig.

Please contact OPBuriedServicesEnqiries@networkrail.co.uk This is a desk top service search and the cost of this investigation will be borne by the proposer.

In addition to the desktop search, and prior to commencement of works, site service investigation should be undertaken using a Network Rail approved cable avoidance tool in the presence of a Network Rail representative.

Excavation to be monitored for evidence of services and repeated cable avoidance tool checks to be carried out as the excavation proceeds. Where services are known or have been detected, the excavation shall be carried out by hand.

Buried Services searches should also be carried out for excavation or uprooting of trees/vegetation on former railway land.

26. Asset Management Plan

Where the works are likely to impact Network Rail assets, the proposer may be required to take on maintenance responsibility of the affected asset. An Asset Management Plan (AMP) will be produced to ensure that all assets affected by the works are handed over and back in a controlled manner in accordance with NR/L2/EBM/088. All interested parties will be required to sign the AMP document before works can commence on site. You may be required to undertake surveys to support this process. Arrangements will be confirmed by the Asset Protection team.

Document History

Issue No.	Date	Revisions	Author
1	27/02/2020	First Issue	ASPRO ENG
2	08/10/2020	Drainage and Surface water – amended Requirements for SWP Production meetings & Site visit	Project ENG