

Ref:	NR/L3/SIG/11303/2G05
Issue:	4
Date:	03/03/2012
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Module

Location Construction

Endorsement and Authorisation

For endorsement and authorisation, please refer to NR/L3/SIG/11303

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User information

This Network Rail standard may contain requirements that are colour-coded according to the following Red–Amber–Green classification.

Red – Mandatory requirements

- **Requirements** that **will** be complied with, and achieved under all circumstances.
- Accountability for the efficacy of these requirements lies with the Professional Head/Standard Owner.
- These requirements are monitored for compliance.
- Local non-compliances, discovered through engineering verification visits, will be reported and monitored through the quarterly Engineering Verification Report.
- Corrective actions will be enforced where local non-compliances remain open beyond the agreed mitigation plan dates.
- These are presented in a red box **and with the word “shall” or a direct instruction**.

Amber – Conditional requirements

- **Requirements** that **will** be complied with unless deviation has been approved.
- Accountability for the efficacy of these requirements lies with the Professional Head/ Standard Owner, or their nominated Delegated Authority.
- These requirements are monitored for compliance.
- Derogations **may** be permitted; which are to be approved by Standard Owner in advance.
- Derogations and Temporary Non-Compliances **may** be granted through the existing Delegated Authority arrangements.
- These are presented with an amber sidebar **and with the word “shall” or a direct instruction**.

Green – Guidance

- Guidance based on good practice; representing supporting information, based on good practice, to help achieve **RED** and **AMBER** requirements.
- This guidance is **not mandatory** and is not monitored for compliance.
- Alternative solutions may be used, which do not need to be formally approved.
- Decisions made by a competent person to use alternative solutions should be backed up by appropriate evidence/documentation.
- This is presented with a dotted green sidebar **and with the word “should” (usually in notes)**.

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Issue record

Issue	Date	Comments
1	August 2000	1 st issue
2	September 2010	Reformatted version of previous document incorporating the text of the installation handbook.
3	March 2011	Updated to correct an error in figure 1
4	03/03/2012	Updated to correct an error in figure 1

Compliance

This Network Rail standard is mandatory and shall be complied with by Network Rail and its contractors if applicable from 03/03/2012.

When this standard is implemented, it is permissible for all projects that have formally completed GRIP Stage 3 (Option Selection) to continue to comply with the issue of any relevant Network Rail standards current when GRIP Stage 3 was completed and not to comply with requirements contained herein, unless stipulated otherwise in the scope of this standard.

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1 General Lineside Equipment Layout

Figure 1 shows a typical layout and standard clearances, for lineside equipment on existing railways, and indicates how the concept of zones (see Module [1B05](#)) relate to the track. Figures 3, 4, and 5 show typical layout and positions for cable route and location cases according to the overall space available by the track. (Clearances for personal safety are specified in [NR/SP/OHS/069](#).)

2 Location Case - General Arrangement

The feet of the interior framework bolt down onto a pre-cast concrete base buried in the ground.

Base to drawing [BRS-SC 31](#) is used for large cases. Bolting down will require four each of the following items:

- Bolt, M16 x 90.
- Washer, steel spring type "A", M16.
- Washer, tapered, M16 x 5.
- Washer, form "C", M16.
- Nut, M16.

Base to drawing [BRS-SC 32](#) is used for small cases. The case is bolted down into tapped holes in the base. This will require four each of the following items:

- Bolt, M16 x 50.
- Washer, steel spring type "A", M16.

Filler blocks to drawing [BRS-SC-31/3](#) are used to block off the sides and ends of the bases that do not have access to cable troughs.

Land ties to drawing [BRS-SC-33](#) may be fixed to the bottom of the base to give greater stability at windy sites.

Locations may be erected with the inner frames having equipment already mounted and pre-wired. Take great care that the equipment and wiring is not damaged in any way during the erection process.

3 Positioning Of Apparatus Cases

An overview of the siting requirements for apparatus housings is given in [NR/GN/SIG/11821](#), including details of guard rails and platforms.

The preferred position is for locations to be mounted:

- at right angles to the track.
- so that a person viewing the front side (see below) is facing trains approaching on the nearest line.

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- at least 3.0 metres from the running rail to the face of the case. If this clearance cannot be obtained, protecting guard rails will be necessary. Where several cases need protection, the guard rail length should not normally exceed 2 metres to avoid the rail inhibiting easy exit from the track. If longer protection is required, rails should be staggered or gapped. Some examples are given in Figure 4 but other arrangements are possible.

In areas of generally restricted clearances, the guard rail position and length should be considered in relation to both the protection of persons working at the cases and the need for someone leaving the track to be able to reach a position of safety. Some situations with severely limited or variable clearance, or on bridges and viaducts, or with irregular ground level will require special consideration and treatment.

All location cases should be at least 2.5 metres from any structure which is bonded to the traction return as a requirement of overhead line electrification. This is to prevent someone being able to touch both the location case and the other structure at the same time. Each may have its own earthing system and a dangerous potential could exist between the two, creating a safety hazard if they were nearer. For the same reason, wherever practicable in a.c. electrified areas, guard rails should be at least 2 metres from the running line and from overhead line structures. If closer, an insulated barrier should be provided.

If the location case has to be mounted parallel to the track, then it should be mounted with the front side away from the track. The distance from track and guard rail rules given above also apply here. See Figure 4.

The front of a location case is the side on which the face of equipment is mounted, where relay operation or status indications may be observed, and where adjustments, including gain settings, have to be made.

Extended clearances will be required on new railways and where line speeds exceed 125 mph. In these cases you will be advised accordingly.

4 Method Of Erection

- a) Dig a suitable hole approximately 330mm deep. The final ground level should be 100mm below the top of the troughs.
- b) Assemble the bases and troughs. Level up.
- c) Fill in the ground around the bases. Firm down and level.
- d) Bolt on the case frames. Check that all the frames are level, vertical and parallel.
- e) Fit on all the outer cases and check that the doors fit correctly.

Erect any necessary guard rails. Typical arrangements are shown in Figures 4, 5, and 7, with the method of construction given in Figure 8. Alternative fixing arrangements, such as bolting down to pre-cast concrete or other base, may be used if more suitable.