

SAMPLE FEASIBILITY REPORT

SAMPLE - Mainline alignment - Feasibility Report

Demonstration inputs - preliminary design · EPC mode

PROJECT DELIVERY / RAIL INFRASTRUCTURE

PREPARED FOR

Demonstration inputs - preliminary design

PREPARED BY

Railway Alignment Designer

DOCUMENT RAD / REPORT | REVISION 01

ISSUED 2026-10-03 | SAMPLE - DRAFT FOR REVIEW

11 sections remain outstanding. See marked items in the report.

Contents

The package

Introduction

Salient features of the project

Scope of the project

Earthwork and formation

Permanent way

Station yards

Bridges and structures

Level crossings, fencing and boundary

Buildings and passenger amenities

Electrical works

Signalling and telecommunication

Land acquisition

Abstract of cost

Construction programme

Compliance and design assurance

Assumptions and limitations

Annexures

Certification

The package

Particulars of the package

Item	Particulars
Work	Construction of new BG line between start (Km. 42.000) and end (Km. 50.182), approximately 8.182 km, consisting of civil, electrical, signalling & telecommunication and other ancillary works, in Demonstration inputs - preliminary design.
Section	start of package (Km. 42.000) to end of package (Km. 50.182)
Route length	8.182 km
Gauge	Broad Gauge (1676 mm)
Traction	Diesel - no electrification in this package
Design speed	130 km/h
Standard adopted	IR-BG
Division	Demonstration inputs - preliminary design
Mode of execution	EPC
Completion period	3 years, including monsoon
Report date	2026-10-03

Every figure in this report is read from the design model at the moment of writing. The schedules annexed to it are produced from the same model in the same pass, so the narrative and the schedules cannot disagree - which is the failure mode of a report assembled by hand from an exported spreadsheet.

Introduction

This report covers construction of new BG line between start (Km. 42.000) and end (Km. 50.182), approximately 8.182 km, consisting of civil, electrical, signalling & telecommunication and other ancillary works, in Demonstration inputs - preliminary design. The work is proposed to be executed on EPC mode.

To be inserted. The sanction reference - the Railway Board letter and item number under which this length was sanctioned, the plan head it is charged to and the sharing between capital and extra-budgetary resources - belongs here. It is an administrative fact and is not derived from the alignment.

To be inserted. The purpose of the line: what it connects, the route it shortens and by how much, and the districts it opens. Where the project is one package of a longer line, the end-to-end case is made in the parent report and summarised here.

Salient features of the project

The new line runs 8.182 km between chainage 42+000 and 50+182. The curvature is limited to 1.00 degrees (1750 m minimum radius) and the steepest gradient adopted is 1 in 265 (0.38 %), duly compensated for curvature.

To be inserted. No stations have been laid out on this alignment. The station positions, their types and the block sections between them are the first table of a package report - propose them in the designer and re-issue this section.

Design criteria adopted

Criterion	Adopted
Design speed	130 km/h
Ruling gradient	1 in 100 (1 %)
Minimum radius permitted	175 m (exceptional)
Sharpest curve designed	1750 m (1.00°)
Steepest gradient designed	1 in 265 (0.38 %)
Maximum cant	165 mm
Maximum cant deficiency	100 mm
Completion period	3 years including monsoon

Scope of the project

The scope comprises confirmatory topographical survey and geotechnical investigation, and the engineering, procurement and construction of the works described in this report over the whole length of the package.

- Confirmatory topographical survey and geotechnical investigation along the alignment and at every structure location.
- Earthwork in formation - cutting, embankment, blanketing, protection works and drainage.
- Bridges and structures: important, major and minor bridges, road over and under bridges, subways and aqueducts.
- Permanent way, including points and crossings in the station yards.
- Station buildings, platforms, foot over bridges, service buildings and passenger amenities.
- Signalling and telecommunication works for the whole section.

To be inserted. Statutory clearances - forest, wildlife, environmental and the consents of utility owners - and the responsibility for obtaining each of them, are a contractual allocation and are not derived from the alignment. State them here.

Earthwork and formation

The formation requires 85,070 m³ of excavation and 34,592 m³ of embankment. There is a surplus of 50,478 m³ to be disposed of within the lead assumed in the estimate. Retaining walls and drains are provided along the whole length except where the line is carried on a structure.

Formation by type

Formation	Length (m)	Share of route	Number	Max depth / height (m)	Volume (m ³)
at-grade	5282	64.6 %	3	1.49	52,144
embankment	1700	20.8 %	1	2.72	30,009
cutting	1200	14.7 %	1	2.15	37,510

A blanket 60 cm thick is provided under the ballast over a formation 7.85 m wide. The depth is a standard provision and not a design against a tested subgrade: it is the figure to revisit once the geotechnical investigation in the scope above has been carried out.

Permanent way

The track on the main line and on the loops is 60 kg 90 UTS rail on pre-stressed concrete sleepers, laid as long welded rail with switch expansion joints where the structures require them. The main line runs 8.182 km.

Permanent way quantities

Item	Quantity
Main line track	8.182 km
Horizontal curves	03 nos.
Vertical curves	03 nos.

Rail is assumed to be issued free by the Authority against the contractor's programme; loading, unloading and transport are payable separately. The rail section above is the standard provision for a line of this speed and axle load and is not a design against a traffic projection.

Station yards

To be inserted. No stations have been laid out, so there is no yard schedule. Propose stations in the designer and re-issue this section.

Bridges and structures

To be inserted. No crossings have been looked up for this alignment, so there is no bridge schedule. A package report is largely its bridge schedule - look up the corridor and re-issue this section.

Level crossings, fencing and boundary

The line is proposed without any level crossing: every road met is taken over or under the railway. The road crossings are scheduled in the bridges section above.

Fencing is provided throughout the section except in the yard portions, where a boundary wall is provided instead. Kilometre posts, hectometre posts, gradient posts, curve posts, speed indicator boards, caution indicator boards, point and switch expansion joint indicator boards and boundary posts are provided as a mandatory requirement over the whole length.

Buildings and passenger amenities

To be inserted. The station buildings, platforms, shelters and foot over bridges are scheduled against the stations, and none have been laid out.

Electrical works

The project is not designed as an electrified line, so no traction or overhead equipment is included in this package. General service supply to the stations is provided under the building works.

Signalling and telecommunication

Multiple aspect colour light signalling is provided with a standard of interlocking worked from the station master's panel at every block station, with block proving, data loggers and the train protection system in force. Cable, including optical fibre, is trenched and laid over the whole section with the apparatus cases and their foundations.

The section is worked as a controlled section under the nominated division. Every block station carries a control telephone, and the section is provided with an integrated passenger and train information system and with remote monitoring of the signalling assets.

Land acquisition

The corridor requires approximately 0.00 hectares within the land boundary, taken from the formation and its batters plus the statutory margin. No cadastral layer has been loaded, so this is an area and not a schedule: it carries no plot numbers, no owners and no severance, and it cannot be used to start acquisition.

To be inserted. Load the revenue records to produce the plot-wise acquisition schedule, and state the status of acquisition and of the 3(A) and 3(D) notifications for this length.

Abstract of cost

To be inserted. The package has not been priced. A feasibility report of this kind is often issued without a cost - the estimate travelling separately - but where one exists it belongs here.

Construction programme

The completion period of the work is 3 years, including monsoon. The programme is driven by the structures rather than by the formation: there are no tunnels or major structures on this length, so the formation and the permanent way govern.

To be inserted. The milestone schedule, the handing over of land in reaches and the traffic and power blocks required at the junctions with the existing line are to be stated. They are contractual and are not derived from the alignment.

Compliance and design assurance

The alignment has been checked against IR-BG by the compliance engine, which returns 0 errors and 2 warnings. No finding exceeds the exceptional limit of the standard.

Assumptions and limitations

This is a feasibility report and not a detailed design. The figures in it rest on the assumptions below, each of which is a thing somebody could disagree with - and a reader who does needs to know which numbers to stop believing. They are gathered here because a register assembled by hand is always short of the ones its author did not have in front of them.

Register of assumptions

Assumption	What it affects
Ground levels are taken from the profile loaded against this alignment, whose accuracy is not stated	Earthwork, structure heights and land
No ground investigation has been carried out; the excavation is priced at a blended rate with an assumed rock share	Earthwork cost, foundations, tunnel method
Spans and superstructure types are taken from the standard span tables against the waterway or the road width found in the corridor lookup, not from a hydraulic or structural design	Every figure in the bridge schedule
Station positions and yard layouts are proposed against the settlements found near the line, and are subject to the operating department's requirement	Block sections, yard works, buildings, signalling
No provision is made for statutory clearances, utility owners' charges, or the cost of land itself unless separately stated	The total cost of the project

Annexures

The schedules behind this report are produced from the same model in the same pass and are annexed to it:

- Alignment plan and longitudinal section.
- Setting-out schedule for the horizontal and vertical geometry.
- Schedule of curves and vertical curves.
- Earthwork and cut-and-fill schedule.
- Land boundary schedule.
- Compliance schedule against the design standard.

Certification

The completion period of the work will be 3 years including monsoon.

This report is a draft produced from a design model. It is not a submission until an engineer has read it, filled the sections marked as outstanding and signed it.

To be inserted. Designation, name and signature of the issuing officer.