Rail construction is completed over six major stages which include:

**Stage one - Embankment and bridge construction** – Much of the Moreton Bay Rail alignment will be built on earth embankment which will form the rail foundation (see image below). Bridges and culverts are needed to carry the rail line over existing roads and water courses and station facilities.

**Stage two - Laying concrete sleepers** – concrete rail sleepers are placed along the rail alignment as a base support for the rail. Sleepers are positioned by a front end loader with a sleeper ‘grab’ attachment which picks up a set of sleepers and lays them in the configuration for the rail tracks to then be attached.

**Stage three - Laying the rail tracks** – the steel rail is placed on top of the concrete sleepers and clipped into place by either a track mountable machine or by hand. The rail is then welded together using ‘flash butt-welding’ which melts two rail pieces together forming a seamless rail track.

**Stage four - Ballast** – ballast is a specific type of rock used for supporting the sleepers and rail track, keeping them in place while trains run. A ballast machine rides the new tracks and places the ballast over the sleepers and between the tracks.

**Stage five - Settling the rail** – a track mountable machine called a tamping machine rides along the new track, lifting the tracks, to then vibrate the ballast into place. It then sets the track into its final position. This method is repeated numerous times to ensure the rail line settles and is ready for operation.

**Stage six - Installing overhead equipment** – masts are installed along the rail alignment to support the equipment which provides electricity to operate trains. Signalling structures are also installed along the rail route.