Sub: Corrective action to increase the formation width.

The issue regarding increase in formation width has become necessary due to increase in ballast cushion as well as slope of ballast. The formation width of railway embankments has been increased from existing 6.85 m to 7.85 m for 350 mm ballast cushion vide Advanced Correction Slip No. 135 of IRPWM. Since a longer time is consumed for taking necessary corrective action to increase the formation width, the pain of lesser formation width can be endured for some additional length of time without creating undue obstacles in the progress of ongoing projects. Therefore, railway may take following measures in this regard:-

(1) All projects for which detailed estimate is yet to be sanctioned will be sanctioned with increased formation width.

(2) Projects where detailed estimate has been sanctioned by the competent authority and physical work has started shall continue to be carried out with existing provision.

(3) There may be some projects where even though the detailed estimate has been sanctioned but no physical work like finalization of contract etc. has taken place. Necessary modification in formation width need to be carried out to ensure availability of requisite width.

Railways are therefore advised to take action accordingly.
819. Permanent land is land which will be required permanently after the railway is open for traffic and the work of construction is complete. Under this head will be included all land to be occupied by the formation of the permanent line of railway with side slopes of banks and cuttings, and the berms connected therewith; catchwater drains and borrow pits or such parts of them as it is necessary to retain; the entrances to tunnels and shafts belonging to them; the sites of bridges, and protection or draining works; station yards; landing places for railway ferries; ground to be occupied by works belonging to the railway such as gas works, arrangements for water supply, septic tanks, collecting pits, filter beds and pumping installations, & c., ground for the storage manufacture or acquisition of materials; land for sanitary zones, cemeteries, churches, plantations; gardens, and recreation grounds, sites for stations, offices, workshops; dwelling houses and other buildings required for the purposes of the railway, or the accommodation of the staff, with the grounds, yards, roads, & c., appertaining thereto. Under this head will also be included land outside the permanent railway boundary, which will be required for the permanent diversion of roads or rivers, or for other works incidental to the construction of the railway, which are made for public purposes and will not on completion of the works be maintained by the railway authorities.

820. Temporary land is land which is acquired for temporary purposes only, and which is disposed of after the work of construction is completed.

821. Extent of land to be acquired. In estimating for the extent of land to be taken up for a railway, care should be taken to make provision not only for the land which will be required permanently for the purposes of the open lines (such as those indicated in paragraph 819 on "Permanent Land"), but also for such land as will be required during construction only, for spoil-banks, side-cuttings, quarries, stacking and preparation of material, temporary offices, workshops and quarters, and for temporary purposes generally, to be disposed of after the work is complete.

822. (a) For lines over which traffic is likely to develop beyond the carrying capacity of a single line within 15 years after opening, the widths of land to be taken up should be those for a single line.

(b) For lines on which the traffic cannot reasonably be expected to grow beyond the carrying capacity of a single line within 15 years of opening, the widths of land to be acquired should be those for a single line.

(c) The minimum widths of land to be taken up for a single line should be, under ordinary circumstances, those shown in the sections and tables, printed as Appendix III. The Railway Administration can reduce the requirement of land in urban areas or where the cost of land is expensive (refer para 829). The extent of permanent land will depend upon how many, if any, of the borrow pits are to be retained after construction is completed.

(d) The orders of the Railway Board should be obtained before reckoning widths on basis (a).

823. At station yards the cutting or filling for the formation of the main line and sidings may sometimes be arranged for in the general levelling and improvement of the plot of ground to be permanently acquired. Where this cannot be done, provision should be made outside the proposed boundary of the station yard for such additional land as may be required for side cuttings or spoil banks. In the case of station yards within or in the vicinity of large towns or other inhabited areas, it is desirable in the interest of sanitation that excavations, which are likely to prove noxious, should as far as possible, be avoided or so arranged as to drain off completely. Special care should be taken to ensure that sufficient land is taken up at stations. This land should be provided for any reasonable extensions of the yard which may be expected in the future.

824. In making provision for land for side-cuttings, the width will, under ordinary circumstances, depend upon the nature of the soil, height of bank, facilities for getting earth and other local conditions. Under special circumstances, as for example, in the neighbourhood of large towns or where land is expensive, it may be advisable to equalize the quantities for cutting and filling, and take, the material for banks from the adjacent cuttings.

825. After a line has been opened, it is necessary to have land from which earth can be dug for repairs to banks and such land should always be acquired permanently.

826. It would not be economical to reserve land for all repairs between the bank and the original borrow-pits, because doing so would increase the lead and consequently the cost of all earth dug for construction of banks, but it is desirable to have a certain width of land from which earth can be dug for emergent repairs during or immediately after the monsoon when the borrow-pits may be full of water. Pits dug for such urgent repairs, inside the line of original borrow-pits, should not be more than 1 metre in depth and the width of land for such pits may be taken as equal to the height of bank.

827. The width of berm to be originally set out will therefore be 3 metres plus width required for urgent repairs (height of bank). Provision has been made on this basis in the Tables in Appendix III.

828. For 762 mm gauge lines in mountainous country special arrangements for acquisition of land for borrow-pits to provide earth for construction and maintenance should be made.

General Arrangement, side-widths, & c.

829. For the line between stations, the general arrangements for land shown in the sections in Appendix III should be followed. The width of temporary land to be acquired for borrow-pits or spoil-banks cannot be laid down, as these depend on (1) nature of soil; (2) depth of sub-soil water; (3) price of land; and (4) other local considerations. But for ordinary open country, where land is not unduly expensive and excavation to a depth of 2 metres is not undesirable owing to hard soil or subsoil water met with, the widths shown in the Tables in Appendix III will be found suitable for banks of 2 to 1 slope. An appreciable decrease in the area of land to be taken up can be effected by the adoption of greater depths for borrow-pits. It is, therefore, left to the discretion of the Railway Administrations to adopt such depths with the consequent decrease in the width of borrow-pits as they consider practicable. For new lines and doublings the acquisition of agricultural

www.indianrailways.gov.in/railwayboard/uploads/codesmanual/EngCode/chapter-viii.htm#821