

दक्षिण मध्य रेलव
प्रमुख मुख्य इंजीनियर का कार्यालय,
पांचवी मंजिल, रेल निलयम
सिकंदराबाद- 500 071



SOUTH CENTRAL RAILWAY
Office of the Principal Chief Engineer,
Vth Floor, Rail Nilayam
SECUNDERABAD - 500 071

No.W.71/Br/Bridge Policy/Vol.II

Dy.CVO/Engg/SC

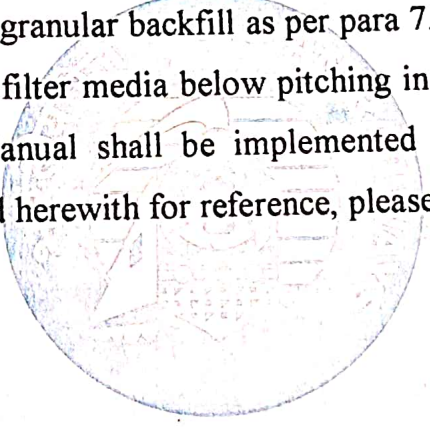

Dt:01.08.2024

Sub: Provision of filter media behind boulder below stone pitching for guide bunds & and approach embankment.– Reg.

Ref: 1.Dy. CVO/Engg's letter no.G.265/V/E/2024/01/01084, dated 05.06.2024

2. This office letter no. W.71/Br/Bridge Policy/Vol.II, Dt:25.07.2024

With reference to above subject, vide letter cited at reference-1, instructions on provision of Provision of boulder filling with granular backfill as per para 7.5 of Foundation and Sub-structure code were reiterated and provision of filter media below pitching in the approach banks as per Para 205(2). Annexure 2/3 of IR Bridge Manual shall be implemented in the field without fail. A copy of instructions reiterated is enclosed herewith for reference, please.



(M. Ranadheer Reddy)
Chief Bridge Engineer

Encl: letter in Ref.2

E-3389418 dt-26/7/2024



SOUTH CENTRAL RAILWAY

Office of the Principal Chief Engg
Vth Floor, Rail Nilayam
SECUNDERABAD - 500 071

Dt: 25.07.2024

No.W.71/Br/Bridge Policy/Vol.II

CAO(C), CAO/RSP

Sr.DEN/Co-ord/SC, GTL, BZA, HYB, GNT & NED

Sub: Provision of filter media below stone pitching for guide bunds & approach embankment.

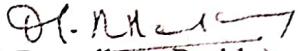
Ref: 1.This office letter no.W.71/Br/Bridge Policy, dated 30.06.2020.

2.This office letter no.W.71/Br/Bridge Policy/Vol.II, dated 29.04.2022

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- Vide this office letter under reference (1), it was advised to provide 60cm of boulder backing along with granular backfill behind abutments, wing walls, return/earth retaining walls as per Para 7.5 of IR Substructure code for effective drainage through weep holes.
- It was also advised to make a reference to HQ Bridge design section for giving alternative design for the specific bridge component in case provision of boulder backing and granular fill is not possible due to any site constraints.
- Vide this office letter under reference (2), GSB was also permitted for use as granular material behind the boulder backing since GSB is found conforming to the groups of granular material specified under IS 1498 i.e., GW, GP & SW.
- As per para 810 under sub para 2(g) of IR Bridge Manual, Side slopes of guide bunds & approach embankment needs protection to avoid slippage of earth material from slopes due to i) Wave action on the upstream side ii) Water current along the slopes iii) Wind action iv) Rain cuts/Rain water.
- In order to ensure effective drainage, it is necessary to provide graded filter media below pitching as per Para 205 (2) of IR Bridge Manual and the same is being incorporated in the approved GADs of bridges wherever required.
- However, it has come to the notice that boulder filling behind abutments/ wingwalls/return walls etc & filter media below pitching in the approach banks are not being provided for various reasons such as non availability of items in the schedule of the agreements, stringent targets for completion of the projects etc.
- Non provision of Boulder filling and granular backfill behind earth retaining structures will make weep holes ineffective and may cause building of excessive hydrostatic pressure behind the structures leading to collapse in extreme cases. Few such incidences have also been reported by Divisions recently.
- Similarly, non provision of filter media below pitching may cause uplifting of pitching stones leading to failure of slopes of formation.

- In this regard, it is once again reiterated that instructions on provision of boulder filling with granular backfill as per Para 7.5 of sub structure code and provision of filter media below pitching in the approach banks as per Para 205(2), Annexure 2/3 of IR Bridge Manual shall be implemented without fail.
- Suitable SSR/NS items for provision of boulder filling & granular fill behind earth retaining structures and filter media below pitching shall be incorporated in the tender schedules of bridge works and earth works invariably and it shall be ensured that works are carried out as per the specifications without fail.
- In case of any field constraints in implementing the above instructions as per approved GADs, the matter shall be referred to the competent authority i.e CBE/ CE(C) for giving alternative design/ arrangements for earth retaining structures / pitching of banks.


(M. Ranadheer Reddy)
Chief Bridge Engineer

C/- PCE/SC for information please.

C/- CE/RSW/SC, CTE/SC, CE/TM/SC, CGE/SC, CE/TP/SC, CE/Works/SC, CE/P&D/SC,
CE/SD/SC for information please.

