GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(Railway Board)

MANUAL ON THE DESIGN AND CONSTRUCTION OF WELL AND PILE FOUNDATIONS

ADOPTED – 1985

ISSUED BY RDSO, LUCKNOW

ADDENDUM & CORRIGENDUM SLIP NO. 1 DATED 26.09.08

i) Replace existing Para 1.7 as under :

"1.7 Well Curb: It should transmit the superimposed load to the bottom plug without getting overstressed and it should offer minimum resistance to sinking. The slope to the vertical of the inner faces of the curb shall preferably be not more than 30 degrees. In sandy strata, it may be up to 45 degrees. An offset on the outside (about 50 mm) may be provided to ease sinking. The curb shall invariably be of reinforced concrete with a minimum reinforcement of 72 kg/m^3 excluding bond rods. In case blasting is anticipated, the inner face of the curbs shall be protected by steel plates or any other means to sufficient height."

ii) Replace existing Para 1.8 as under :

"1.8 Well Steining : Well steining shall be built of cement concrete not weaker than M-15 grade. Sufficient bond rods shall be provided to bond the units of the steining during the progress of construction. Bond rods shall be distributed evenly on both faces of steining and tied up by providing adequate horizontal hoop reinforcement. For masonry steining and for concrete steining of small thickness, bond rods may be provided in one row in the centre only and tied up by providing plates or hoop reinforcement."

iii) Replace existing Clause 1.10 as under :

"**1.10 Top Plug :** A 300 mm or of appropriate thick plug of cement concrete M-10 grade shall be provided over the hearting which shall normally be done with sand."

iv) Replace existing Para 2.4.1(b) as under :

"2.4.1 (b) For non-cohesive soils, Hiley's formula is more reliable than other formulae. This formula is given in Appendix 'B' of IS: 2911 Part-I Section-I-1979."

v) Replace existing Para 2.5.2 as under :

"2.5.2 The minimum factor of safety of static formula shall be 2.5. The final selection of the factor of safety shall take into consideration the total settlement and differential settlement of the structure."

vi) Replace existing Para 2.5.3 as under :

"**2.5.3** The ultimate load capacity should be obtained, whenever practicable, from a load test (initial) (as per IS:2911 (Part-4) -1985). Factor of safety for assessing safe load on piles from load test data should be increased in unfavorable conditions such as:

a) Settlement is to be limited or unequal settlement avoided as in the case of accurately aligned machinery or a superstructure with fragile finishing,
b) large impact or vibrating loads are expected,
c) the properties of the soil may be expected to deteriorate with time, and
d) the live load on a structure carried by friction piles is a considerable portion of the total load."

vii) Replace existing Para 2.5.4 as under :

"2.5.4 The maximum permissible increase over the safe load of a pile on account of Wind load is 25%. In the case of loads and moments arising out of earthquake effects, the increase of safe loads on a single pile may be limited to the provisions contained in IS: 1893-1984. For transient loading arising out of superimposed loads, no increase in the safe load is generally permitted."

BY ORDER

LUCKNOW
Dated: 26.09.08

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