

Office of the Chief Engineer (BODHI)
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Memo. No. 1057 /817/Canal/BODHI

Bhopal, dated 24/05/2020

The Chief Engineer,
 Chambal Betwa Basin,
 Water Resources Department,
 Bhopal (M.P.)

Subject: Design and Drawing of Gravity Pipe line of Semalkheri Project.
Reference: Your letter no.40/D-6/373/W/CB/19, Bhopal. Dated: 07.03.2020

Please refer your letter under reference, vide which the hydraulics of Gravity Pipe line of Semalkheri Project in the culturable command area of 1240 Ha were received in this office. The design and drawings have been scrutinized on the basis of GAD submitted & data accepted by you and you have ensured that submission is as per Agreement, mainly GCA to CCA ratio, length of pipe lines, duty adopted and availability of water. The methodology adopted for the design of Gravity Pipe by using Modified Hazen Williams formula is in line with CPHEEO manual and found to be generally in order. The submitted network design for pipe line in culturable command area 1240 Ha is technically vetted with the following observations:-

1. The design has been checked for given pipe lengths and levels of the nodes for command area 1240 Ha. It is considered that all the CCA and length & levels of nodes of pipeline network have been verified at site. If there is any variation in the pipe length/levels due to change in the alignment or command area in the field, the design calculation shall be revised and verified again after duly considering variations as per actual site conditions.
2. It is recommended that alignment of all distribution pipe lines shall be fixed straight as far as possible and with minimum bends in the field to ensure smooth water flow with minimum resistance. Detailed pipe alignment, plan drawings along with necessary valves, bends & fittings shall be prepared and submitted by the contract firm in line with approved design for all network for our reference. The pipe alignment and levels shall be verified by field officers as per site condition before execution.
3. The total area where required 6m head at approx. 20 Ha chak is not available is Nil as per design submitted.
4. The length of pipe network (as a percentage of total length of network submitted) where velocities are below 0.6m/s and above 2.1 m/s is approximately Nil.
5. Power requirement is Nil for CCA 1240 Ha.
6. Duty of 0.4 lps/Ha is adopted in design. However duty as per CWR is coming as 0.30 lps/Ha. The duty to be adopted in such case is 0.37 lps/Ha or actual duty whichever is higher..
7. This is conceptual design which is technically vetted. The detailed drawings as per standard Engineering practice and relevant IS codes / standards mentioned in contract document shall be prepared before execution and duly signed copy of this should be submitted to this office for record.

This technical vetting should be emphasized on the part of contract and this recommendation does not relieve the contractor from his responsibility for the accuracy and correctness of the design of components of structure and smooth operation etc. You are requested to submit duly signed copy of corrected hydraulics and drawings to this office.

(G. P. SONI)
 Chief Engineer,
 (BODHI), WRD, Bhopal