**Methodology for Construction of Regulator for HFM&LI Project.**

**Construction procedure of Regulator:**

The procedure for construction sequences and steps to be followed in construction of regulator are given as follows:

1. Clearing Jungle/vegetation and preparing the site.
2. Construction of site inspection facilities.
3. Time-frame for construction of proposed regulator has been mentioned in bar chart attached.
4. Proper side slope has to be maintained in the foundation trench.
5. BM set by IWM shall be followed during execution work.
6. Concrete shall be poured in dry bed condition.
7. Concrete mixture shall be poured as quick as possible but not later than 45 minutes after mixing.
8. All steel Shutter/Forma shall have in new condition. No wooden shutter will be allowed.
9. Auto feeding concrete Mixture Machine shall be used. No Mixture machine will be allowed smaller than 18 liter capacity
10. All RCC works shall have minimum 28 days cylinder strength of 22.00 N/mm2. and CC blocks shall have minimum 28 days cylinder strength of 9.00 N/mm2.
11. Sufficient curing arrangement with jacket shall be provided by the contractor. Curing of concrete shall be continued for minimum 21 days after casting.
12. The gate shall be installed before the operation of the structure.
13. Provide all equipment's and accessories including site illumination etc, required for satisfactory execution of the works.
14. The contractor shall ensure transportation, furnishing, installation, safe operation and maintaining of all equipment's including operators, mechanic, supply of power, fuel, lubricants, repairing of equipment facilities and all other materials, labors and temporary works up to the end of the construction period under this contract.
15. The contractor shall provide continuous supervision of works by persons competent to recognize adverse conditions as they develop and take immediate corrective measures. The supervisors engaged by the contractor shall have thorough knowledge of the construction system, including the availability to suggest/made minor emergency repairs.
16. The contractors shall plan and organize in such mode and manner that the work is completed in all respect within the time stipulated under these contracts and for such accomplishment the progress must be proportionate to the time limit.
17. The contractor shall be responsible for maintenance of the work including necessary repairing and mending all kinds of damages during the period from the date of issuance of “completion certificate” to the date of releasing the performance security/defect liability period as per direction of the Project Director.
18. The supervising Engineer of the consultant/Co-Team Leader of the consulting team will carry out field inspection on the contractor's setting out to ensure that the works are carried out in accordance with drawings and other design details.
19. The Supervising Engineer of the Consultant will survey and measure the work output performed by the contractors and recommend BWDB to issue payment certificates such as interim payment certificates and the Co-Team Leader/Team Leader of the consulting Team will recommend final payment certificate as specified in the contract.
20. The Supervising Engineer of the Consultant/Co-Team Leader of the consulting Team will recommend BWDB to coordinate the works among different contractor employed for the project.
21. The Supervising Engineer of the consultant/Co-Team Leader of the consulting Team will carry out timely reporting to BWDB for any inconsistency in executing the works and suggesting appropriate corrective measures to be applied.
22. The Supervising Engineer of the consultant/Co-Team Leader of the consulting Team will ensure that the construction works are executed in accordance with all the provisions of the contract including those concerning standards of workmanship and other safety provisions and protection of the environment.
23. The Supervising Engineer of the consultant will supervise field tests, sampling laboratory test to be carry out by the contractors.
24. The concerned Executive Engineer of BWDB along with his Sub-Divisional Engineer and Sectional Officer will be associated with layout of the structures, checking of the works and quality monitoring of the regulator construction works.
25. The Supervising Engineer of the consultant will ensure that as built drawings are prepared for construction works.
26. The Supervising Engineer of the consultant will provide assistance to BWDB to approve or disapprove the materials to be used by the contractors in accordance with the contract and technical specifications.
27. The concerned Executive Engineer along with Sub-Divisional Engineer and Sectional officer will prepare the bill of quantities of the works of the regulator. They will also be associated with the consultant for the joint measurement of the works.
28. Video document showing date and time digitally shall be submitted for every sequence of works of an item. No bill will be made without video Document.
29. All instructions and specifications mentioned in the approved drawing should be followed strictly.
30. To protect the environment of the project areas from any potential adverse impacts, the contractor must take mitigation measures in compliance with the Environmental Management Plan (EMP) during contract implementation period (Pre-construction and construction stage). EMP is annexed with the tender document.
31. The Project Director reserves the right for the inclusion of any other points in the methodology if required for the smooth execution of works.