

Action for Food Production (AFPRO) AFPRO Regional Office, No 56, Hutchins road, 6th Cross, St. Thomas town, Bangaloe-560084,
Ph. 080-25461711, Email aro.blr@afpro.org Web Site –www.afpro.org

Chapter 1: Detailed Tender Notice & Conditions

Tender notice no.: AFPRO/Checkdam 11/Hasiruvalli/2021-22

Date: 24th January 2022

Sealed tenders in prescribed format are invited from experienced & reputed civil contractors for construction of RCC Check dam (CD – 11) at village Hasiruvalli of Nelamangala block in Bangalore Rural District.

1. Scope of work

1.1 Name of work: Construction of RCC Check dam at village Hasiruvalli of Nelamangala block in Bangalore Rural District. (As per detailed bill of quantity enclosed).

1.3 The above work shall be carried out as per the technical specifications mentioned in Chapter 2 of this tender document.

2. Availability of tender documents

2.1 The non – transferable tender documents can be obtained from the Regional office of AFPRO, No 56, Hutchins road, 6th Cross, St. Thomas town, Bangaloe-560084 and also the tender document can also be downloaded from the web site www.afpro.org.

3. Rate to be quoted

The bidders are required to quote their rates and total cost both in figures and words in the “Price Bid” format enclosed in Annexure-I. The quoted rate shall be inclusive of all prevailing taxes and duties. In case of change in the taxes by the Government during the contract period, the same shall be considered and will be paid extra.

3.2 The bidder will be evaluated on the basis of lowest quoted rates in the price bid. If the rates quoted are not workable, committee reserves the right to reject the tender

3.3 Tenders containing overwriting, corrections without authentication with signature on the pages of “Price Bid” will be liable for rejection. In case there is any discrepancy between figures and words, then the amount quoted in words will be considered for evaluation.

3.4 In case the quoted rates are abnormally lower than the anticipated estimates, AFPRO reserves the right to call justification from bidder. Further the bidder may have to submit a performance guarantee in form of bank guarantee towards the differential amount.

4. Submission of tender

4.1 Tenders shall be submitted in sealed envelopes or electronic media only.

4.2 If sent by post, should be submitted / sent to the following.

AFPRO REGIONAL OFFICE, BANGALORE, # 56, Hutchins Road, 6th Cross, St. Thomas Town, Bangalore - 560084, Phone: 080-25461711/25641712, Email: aro.blr@afpro.org,

4.3 Last date of submission: 31st January 2022 up to 5 PM.

4.4 Tenders received after the deadline will not be accepted. It is the responsibility of the bidder to ensure and confirm that the tender is received in time by AFPRO.

4.5 Queries pertaining to tender, if any, may be clarified by contacting AFPRO Regional office Bangalore Ph. 080-25461711 during office hours (9.30 AM -5.30 PM) from Monday to Friday.

4.6 Interested bidders can visit the site at their own cost and familiarize themselves with the site conditions, concerned areas and to go through the terms and conditions of the tender document before submission.

4.7 Tenders not received in prescribed form will be liable to be summarily rejected.

4.8 Tenders not adhering to the terms and conditions are liable to be rejected.

4.9 AFPRO reserves the right to accept or reject any or all tenders without assigning any reason thereof.

4.10 The tender documents have to be signed by the bidder on each page and the terms and conditions must not be altered, failing which the tender will be rejected.

4.11 Tender form containing „overwritten“ or „erased“ rate or rates and amount not showing figures and words in English will be liable to rejection.

4.12 Tender containing clerical or arithmetical mistakes may be rejected.

4.13 Any request from the bidder in respect of additions, alterations, modifications etc. of either terms or conditions or rates of his tender after opening of the tender may lead to rejection of tender.

5. Tender opening

5.1 Techno-commercial bids shall be opened in the presence of the designated committee of AFPRO. Price bids of bidders whose techno-commercial bids are found acceptable will be opened on 01st February, 2022 at 12:00PM in the presence of the designated committee. Interested bidders may be present during opening.

5.2. AFPRO reserves the right not to accept the lowest offer. AFPRO also reserves the right to cancel the tender. No claims of any bidder in this regard shall be entertained.

5.3. The validity of the offer shall be 120 days from the date of submission of the tender

6. Date of commencement of work

- 6.1 The successful bidder should commence the work immediately after issuing of the work order.
6.2 Contract period-. The contract period shall be for 90 days from the date of issuing the work order.

7. Jurisdiction- The jurisdiction shall be Bangalore Rural district

8. Eligibility criteria

8.1 The bidder should be an established contractor / firm with experience in civil construction works. The bidder should have undertaken three works of similar nature (as given in scope in tender) in the last five years with each work amounting to more than Rs 10 lacs.

8.2 The bidder should have an annual turnover of not less than Rs. 10 lacs for the preceding three years (2018-19, 2019-20, 2020-21).

9. Area of works

The area of work is located in Kalalaghatta village of Nelamangala block in Bangalore Rural District. The bidders are advised to visit the site at their own cost to acquaint themselves with the working conditions, soil quality etc. before submitting the tender. AFPRO will provide the exact location of the construction site.

10. Award of the contract

- 10.1 After evaluation of the received offers through two bid process, the contract may be awarded to the lowest bidder.
10.2 Notwithstanding the above, AFPRO Reserves the right not to award the contract to the lowest bidder and may cancel or reject any part or whole of the tender without assigning any reasons whatsoever. The bidders shall not be entitled to any claims on account of the incidental expenses incurred.
10.3 Acceptance of the bid shall be intimated through letter of intent / work order. In turn, the bidder has to counter sign and return the same as token of acceptance.
10.4 An agreement may be entered between AFPRO and the selected contractor for execution of work.

11. Work schedule, maintenance of record and measurements

11.1 The successful bidder will draw work schedule of each activity along with time schedule of completion of work. The work schedule is to be drawn in consultation with Sr. Engineer, AFPRO. However, the quantities set out in the schedule of items are only the estimated quantities of the works and are subject to alterations / modifications as per the instructions of the engineer.

11.2 The engineer may make any variations in the quantity of the works to be performed for whatsoever reason in the interest of AFPRO, sponsor and community as per the following.

- a. Increase or decrease the quantity of any work included in the contract
- b. Omit any such work
- c. Change the levels, lines, positions and dimensions of any part of the works
- d. Execute additional work of any kind necessary for the completion of the works and no such variation shall in any way vitiate or invalidate the contract but the value (if any) of all such variations shall be taken into account in ascertaining the amount of the contract price.

11.3 The monitoring of the work carried out will be recorded in a Measurement Book which shall be maintained by the concerned engineer. The engineer shall ascertain and determine the value of work done by measurement. For the purpose, he / she may give notice to the contractor for measurements of any portion of the work. The contractor shall forthwith attend or send a qualified agent to assist the engineer or the engineer's representative in seeking such measurement and shall furnish all particulars required by either of them. Should

The contractor not attends or neglect or omit to send such agent, then the measurements made by the engineer or approved by him shall be taken to be correct measurement of the works. The engineer will have the right to inspect the scaffolding, centring and shuttering made for the work and reject partly or fully such structures if found defective.

12. Payment terms

12.1 Payment of Running Account (RA) bills shall be released to the contractor through RTGS / NEFT subject to submission of details of bank account.

12.2. 85% of the RA bill shall be released depending upon the progress of work and subject to inspection and verification made by AFPRO. After verification and certification, the Regional Manager, AFPRO shall forward the same to Accounts Department for consideration of payment.

12.3 Necessary pre-inspection of the materials will be made by the engineer in order to ascertain the quality and conformity with standards.

12.4 10% of the payment will be made on completion of the job in all respect, issue of work completion certificate and fulfilment of the liabilities by the contractor.

12.5 Balance 5% of payment will be released on completion of defect liability period of 12 months after issue of completion certificate.

12.6 No payment will be made for benchmarks, level pillars, profile, benching, ground levelling or any temporary works which are required for successful completion of work.

13. Penalties

13.1 Liquidated damages: If the contractor fails to successfully complete the work as per the specification within the stipulated time period mentioned in the work order, the necessary liquidated damage will be deducted from the final bill. For the purpose of liquidated damage deductions, the total value of actual work done against the work order will be considered. The rate of liquidated damage will be 0.5% (half percent) per week subject to a maximum of 5% of the total value of work done. No liquidated damage is applicable if the completion period of the work gets extended beyond the stipulated period of the contract due to no fault of the contractor. Decision of AFPRO shall be binding and final in this regard.

13.2 Forfeiture: In case the successful bidder fails to take up the work after issuance of work order AFPRO may at its discretion impose upon any or all of the following penalties.

a. Cancellation of work order. In case of cancellation the recovery of extra cost incurred by AFPRO for getting the work done through other sources / agencies, which may be without any notice to the contractor, will be recovered from the contractor.

b. Forfeiture of security deposit / bank guarantees wholly or partly without notice to the contractor.

c. Blacklisting of the contractor.

d. Recovery from any of the other present / future pending bills of the contractor.

14. Price escalation- No price escalation during the period of validity of the offer shall be accepted by AFPRO.

15. Signing of agreement

The successful bidder shall be required to sign an agreement with AFPRO within 5 days of the issue of work order / LOI or within such extended period as may be specified. In case the contractor fails to sign the agreement within the stipulated time, AFPRO will have right to terminate the contract and the bidder stands debarred from future participation in any tender of AFPRO

16. Obligation of the contractor

16.1 The contractor will commence and complete the work as stipulated in the tender document.

16.2 The contractor will have to make own arrangements for travelling, boarding, lodging etc.

16.3. The job cannot be sublet in part or in whole without the written consent of the Regional Manager of AFPRO Bangalore.

16.4 The contractor will comply with the directives by AFPRO from time to time.

16.5 All security arrangements for the materials to be utilized in the project shall be done by the contractor till completion and hand over at his own cost.

16.6 The contract assumes a proper degree of skill on the part of the contractor and all his workmen employed. The contractor shall consult with engineer whenever in his judgment a variation in the work of construction or in the quality of the materials specified would be beneficial or necessary to fulfil the guarantees called for in the contract. Such variations shall be carried out by the contractor only when authorized by the engineer in writing. The request for such changes shall be made before the contract agreement is executed otherwise guarantees will be understood to hold good for work

16.7 The guarantee period for all the civil works and equipment's / accessories etc. should not be less than 01 (one) year from the date completion of the work. All the documents related with guarantee to be submitted to AFPRO.

16.8 The contractor shall report occurrence of any accidents at the work site including particulars of his employees involved to the concerned authorities and effect payment of compensation as per the Workmen's Compensation Act as amended from time to time within the prescribed time limit.

16.9 The contractor shall at his own cost, observe, perform and comply with the provisions of the Contract Labour (Abolition and Regulation) Act, 1971, and the rules made there under as amended from time to time. The contractor shall have to observe, perform and discharge his / their obligations under the said act and AFPRO shall be entitled to recover from the contractor any cost of expenses that it may have to incur or suffer on account of contractor's failure.

16.10 The material to be supplied by the contractor shall be as per IS specification. All the materials needed for the work must be approved by the engineer and brought to the site in bulk.

16.11 If any work either in temporary or permanent nature or necessary to complete the work in all respect but not mentioned in the tender shall have to be done without extra cost.

16.12 The contractor has to arrange the adequate lighting arrangement for the work wherever necessary at his own cost.

16.13 After the work is finished, all surplus materials and temporary structures should be removed from the site of work such as brickbats, aggregate, mixing platform etc. The site and the premises left to be neat and clean.

16.14 The contractor shall give or provide all necessary supervision during the execution of the work. The contractor or his authorized representative is to be constantly present on the work and shall give his whole time for the supervision of the same. Such authorized representative shall receive direction and instruction from the engineer on behalf of the contractor. Site meeting will be called at regular interval and the contractor or his authorized representative will be required to be present in such meetings to discuss progress of the work and other matters including any deviation from drawing or specifications.

16.15 The contractor shall comply with all prevailing safety and environmental laws.

17. Supplementary items

17.1 The items of the work not covered in the specific schedule of items will be considered as supplementary items. The rate of the supplementary items of work will be determined in order of precedence as given below.

- a. The rate will be derived wherever possible from the rate of allied items of work quoted by the contractor in the specific schedule of probable items of work plus the contractual percentage
- b. The rate of the items which cannot be derived by any of the above process shall be determined from the market rate of the materials and labour plus profit and overhead charges. However, the profit and overhead charges taken together shall constitute 10% of the cost of materials and labour.

18. AFPRO will reserve all rights to terminate or cancel the contract at any time during implementation, if the progress of work done by the contractor is not found satisfactory by the Regional Manager / Engineer or any person appointed by AFPRO for monitoring & supervision of the work by AFPRO.

19. Completion certificate

The work shall be said to be completed on the basis of certification of the user department and subject to completion of all sort of laboratory tests as instructed by the engineer and on receiving a written undertaking from the contractor to finish any outstanding work during the period of maintenance / defect liability period, the concerned engineer shall Certify & the Regional Manager shall issue a Certificate of Completion in respect of the work. The period of maintenance of the works shall commence from the date of such certificate.

20. Tax deducted at source

Income tax and other taxes as applicable shall be deducted at source, at the rate prescribed in the Income Tax Act and or other Acts, from the gross value of each bill.

21. Legal and miscellaneous

The contractor shall be fully responsible to comply with all his statutory obligations as employer towards Employees Provident Fund Act, 1952, Employees State Insurance Act, 1952, Employees Deposit Linked Benefit Act, 1961, Minimum Wages Act, 1948, Bonus Act, 1965, Gratuity Act, 1972 etc. and all other such obligations / liabilities as per applicable statutory provisions / law and Government notifications ; in respect of their labour engaged by them for the job undertaken under the contract, and will take full liability on this account. AFPRO will not take any financial liability on this account. In the event of failure of the contractor to comply with the above, AFPRO shall be entitled to recover the amount by deduction from any amount payable to the contractor under the contract, including security deposit.

22. Deviation

Deviations sought by the bidder whether they are commercial or technical must only be given within the schedule, prescribed for them. Any wilful attempt by the bidders to camouflage the deviation by giving them

in the covering letter or in any other documents than the prescribed schedules may render the bid itself non-responsive. Any incomplete tender or conditional tender received shall be liable for rejection.

23. Modification of contract

AFPRO reserves the right to modify the contract from the point of view of smooth execution. The same shall be conveyed to the contractor.

24. Force majeure

24.1 The contractor shall have no claim whatsoever against AFPRO for any loss / damage caused to the contractor by reason of war, riot, commotion, disturbance, pestilence / epidemic sickness, strike, lock-out, earthquake, fire, storm, flood, explosion, any change in the nature of deposits, breakdown at plant or machinery for whatever reason, failure / restriction of electrical or other power, act of God etc.

24.2 The contractor shall resume the work as soon as practicable after such eventuality has ceased to exist.

24.3 If the performance in whole or part of any term / obligation under the contract is prevented or delayed by any such eventuality for a period exceeding 7 days of escalation of above events the contract may be terminated at the discretion of AFPRO.

25. Arbitration

Any dispute or difference under or arising out of or in respect of the agreement / accepted Contract may be settled mutually. If not settled mutually, it shall be referred to the sole Arbitrator, a person appointed by AFPRO and his decision in the matter will be final and binding on the both parties. The arbitration shall be carried out as per Arbitration Act, 1996 and Rules made there under as amended from time to time.

Chapter 2: Technical Specifications

Section 1: General

1. For all items of work described in the bill of quantities, the work shall be carried out strictly in accordance with description in general specifications, particular specifications and drawings. The description, drawings and specifications shall be taken complementary to each other and shall form part of this contract.
2. The rates quoted shall be deemed to include all necessary hardware, tools, plants, props, material, labour, duties, taxes, insurance etc. & all needed for successful work completion as per scope.

3. Scope of work

3.1 Construction of RCC structure for up-stream & down-stream protection to the structure (as per detailed drawing and bill of quantity enclosed).

3.2 Although all the details of construction have been by and large covered in these documents, any item or detail of construction not specifically covered but obviously implied upon and essential to consider civil works and all internal services complete and functional, shall be deemed to have been covered in the rate quoted. The bidder may however, consider a minimum level of specifications conforming to IS Code to cover these missing details.

4. Curing

4.1 Exposed surfaces of all cement works viz. cement concrete, brickwork, flooring, plastering, pointing and the like shall be cured by keeping surface adequately and continuously wet as directed by the engineer for at least seven days. Cost for this shall be deemed to be included in the rates quoted against the respective schedule.

5. Bar chart

5.1 The contractor shall submit a bar chart to engineer, AFPRO for the work under contract. The above bar chart shall be submitted by contractor within one week of acceptance of contract. Bar chart as submitted shall be scrutinized by the engineer. Mutually agreed bar chart shall be finalized within three days of submission by the contractor. The contractor shall carry out the changes as suggested by the engineer. The mutually agreed bar chart shall be signed by contractor and engineer. This shall be binding on contractor for progressing the work for completion by due date.

Section 2: Excavation, earthwork

1. Scope: This section covers the works specifications of earth work in excavation in all kinds of soils including murrum, hard murrum, soft rock (without blasting), hard rock (without blasting), rock (with blasting), filling excavated earth in plinths, sand filling in plinth, rubble soling and brick on edge soling. Engineer will furnish the necessary drawing showing the areas to be excavated, filled, sequence of priorities etc. Contractor shall strictly follow such drawings.

2. General

2.1 Contractor shall provide all tools, plants, instruments, qualified supervisory personnel, labour, materials and temporary works, consumables and everything necessary whether or not such items are specifically stated herein for completion of the work.

2.2 Contractor shall set properly all lines and establish levels for various works such as earth work in excavation in foundation of dam etc. The area to be excavated / filled shall be cleared of fences, trees, plants, logs, slumps, bush, vegetation's, rubbish slush etc. and other objectionable matter. If any roots or stumps of

trees are found during excavation; they shall also be removed. The materials removed shall be burnt or disposed of as directed by engineer. Where earth fill is intended, the area shall be stripped of all loose / soft patches, top soil containing deleterious matter / materials before fill commences. Final cleaning shall be done with removal of all rubbish up to the distance of 30 m all around outside the periphery of the structure.

3. Mode of measurements

3.1 Backfilling, plinth filling etc. with borrowed earth will be paid for under specified items. The quoted rate shall include all operations such as clearing, excavation, lead and transport, fill, compaction etc. as specified. Actual quantity of consolidated filling shall be measured and paid for in cubic metres irrespective of lead and lift.

4. Disposal of surplus soil

4.1 Surplus soil / earth if any shall be disposed of within the site up to the quantity as directed by the engineer and the same shall be spread out evenly for which no extra payment shall be made. The balance surplus quantity shall be removed away from site. The cost of this removal shall be deemed to be included in the quoted rates

Section 3: Cement concrete work

1. Applicable codes

1.1 The following codes and standards are made a part of the specifications. All standards, codes of practices referred to herein shall be the latest edition including all applicable official amendments and revisions. In case of discrepancy between these specifications and those referred to herein, this specification shall prevail.

Materials:

IS 269: Specification for ordinary, rapid hardening and low heat Portland cement

IS 455: Specification for Portland blast furnaces lag

IS 1489: Specification for Portland Pozollana Cement

Equipment:

IS 1791: Specification for batch type concrete mixers

IS 2505: Specification for concrete vibrators immersion type

Codes of Practice:

IS 456: Code of practice for plain and reinforced concrete

IS 3385: Code of practice for measurement of civil engineering works

Above mode of measurements shall be applicable only if it is not given specifically in the tender document.

2. Quality

2.1 The quality of materials, method and control of manufacture and transportation of all concrete works irrespective of mix, whether reinforced or otherwise shall conform to the applicable portions of this specification. Engineer shall have the right to inspect the source /s of material/s, the layout and operation of Procurement and storage of materials, the concrete batching and mixing equipment and the quality control system. Such an inspection shall be arranged and engineer's approval obtained, prior to starting of concrete work.

3. Materials

3.1 Cement: Unless otherwise specified the cement shall be ordinary Portland cement in 50 kg bags of 43 grade as applicable. The use of bulk cement will be permitted only with the approval of Engineer-in-Charge. For this, the contractor will be required to construct proper storage facility. Only Ultratech / Ambuja PPC or 43 grade cement should be used by contractor.

3.2 Aggregates: Unless otherwise the aggregates shall conform to the requirements as per IS 383:1970. Aggregate in general designates both fine and coarse inert materials used in the manufacture of concrete. Fine aggregate is aggregate all of which passes through 4.75 mm sieve. Coarse aggregate is aggregate most of which is retained on 4.75 mm sieve.

All fine and coarse aggregates proposed for use in the work shall be subject to Engineer-in-Charge approval and after specific materials have been accepted the source of supply of such materials should not be changed without prior approval of Engineer-in-Charge.

All coarse and fine aggregates shall be stacked in stock separately in stockpiles in the material yard near the work site in bins properly constructed to avoid intermixing of different aggregates. Contamination with foreign materials and earth during storage and heaping the materials shall be avoided. The aggregate must be of specified quality not only at the time of receiving at site but more so at the time of loading in to mixer. Rackers shall be used for lifting the coarse aggregates from bins or stockpiles. Coarse aggregate shall be piled in layers not exceeding 1.20 m in height to prevent coning or segregation. Each layer shall cover the entire area of the stockpile before succeeding layers are started. Aggregates that have become segregated shall be rejected.

Coarse aggregate for concrete, except as noted above and for other than light weight concrete shall conform to IS 383. This shall consist of natural or crushed stone and gravel and shall be clean and free from elongated, flaky or laminated pieces, adhering coatings, clay lumps, coal residue, clinkers slag, alkali, mica, organic matter or other deleterious matter.

Coarse aggregate shall be graded in both cases; the grading shall be within the following limits.

The pieces shall be angular in shape and shall have granular or crystalline surface. Mica and shale, if present, shall be only in such quantities that will not, in the opinion of engineer affect adversely the strength and / or durability of concrete. The maximum size of coarse aggregate shall be in no case greater than $\frac{1}{4}$ of the minimum thickness of the member, provided that the concrete can be placed without difficulty so as to surround all reinforcement thoroughly and fill the corners of the form. Plums above 150 mm and up to any reasonable size can be used in plain mass concrete work of large dimensions up to a maximum limit of 20% of volume of concrete when specifically approved by Engineer-in-Charge. For heavily reinforced concrete members the nominal maximum size of the aggregate shall be 5 mm less than the minimum clear distance between the reinforcing main bars or 5 mm less than the minimum cover to the reinforcement whichever is smaller. The amount of fine particles occurring in the free state or as loose adherent shall not exceed 1% when determined by laboratory sedimentation tests as per IS 2386. After 24 hours' immersion in water, a

previously dried sample shall not have gained more than 10% of its oven dry weight in air, as determined by IS 2386.

3.3 Sand

Sand shall be clean and free from dust or organic foreign matter and its grading shall be within the limits. Sand from river should be used for construction work preferably.

3.4 Water

Unless otherwise stated the water quality and requirements for concrete will be in conformity with IS 456: 1978. Water used for both mixing and curing shall be free from injurious amounts of deleterious materials. Potable waters are generally satisfactory for mixing and curing concrete. Water cement ratio should be 1:0.5.

3.5 Reinforcement steel

All MS reinforcing bars shall conform strictly to IS 432: 1982 and high strength deformed steel (Tor steel) bars should conform to IS 1786: 1985. All reinforcement shall be clean and free from loose mill scales, cost, loose rust, coats of paints, oil or other coatings which may destroy or reduce bond.

All reinforcing bars shall conform to drawings and dimensions shown on the drawing or where required to carry out intent of drawings or specifications. Reinforcement shall not be bent or straightened in a manner injurious to the materials.

Bars containing cracks or splits shall be rejected. They shall be bent cold, except bars of over 25 mm in diameter which may be bent hot if specifically approved by the Engineer-in-Charge. Bars which depend for their strength on cold working shall not be bent hot. Bars bent hot shall not be heated beyond cherry red colour (nor exceeding 845 Deg.C) and after bending the same shall be allowed to cool slowly without quenching. No reinforcement shall be bent when in position in the work without approval, whether or not it is partially embedded in hardened concrete. Bars with kinks or bends not shown on drawings shall not be used.

Reinforcing bars supplied bent or in coils, shall be straightened before they are cut to size. Straightening of bars shall be done in cold and without damaging the bars. This is considered as a part of reinforcement bending fabrication work.

4 Mixing of cement concrete

The quantities of cement shall be determined by weight. Ordinary Portland cement shall be taken to weigh 1442 kg/m³. The quantities of fine and coarse aggregates shall be determined either by volume for ordinary concrete and by weight for controlled one. The proportions of volume or weights specified are based on dry aggregates, due allowance is to be made for bulking or variation in weight of aggregates according to IS 2386 (Part-III): 1963.

All concrete shall be mixed in a mechanical mixer until there is uniform distribution of the materials and the mass is uniform in colour and consistency but in no cases shall the mixing be done for less than two minutes. **Hand mixing shall not be allowed for any concreting work on the job.**

5 Mix design

All concrete in the works shall be of design mix as defined in IS 456 unless it is a nominal mix concrete such as 1:2:4, 1:3:6, 1:4:8 or 1:5:10.

It shall be very clearly understood that whenever the class of concrete such as M20 is specified it shall be the contractor's responsibility to ensure that minimum crushing strength stipulated for the respective class of Concrete is obtained at works. The maximum total quantity of aggregate by weight per 50 kg of cement shall not exceed 450 kg except when otherwise specifically permitted by Engineer-in-Charge.

6 Proportioning, consistency, batching and mixing of concrete

6.2 Aggregate: The proportions which shall be decided by conducting preliminary test shall be by volume. These proportions of cement, fine and coarse aggregates shall be maintained during subsequent concrete mixing. The supply of properly graded aggregate of uniform quality shall be maintained over the period of work, the grading of aggregates shall be controlled by obtaining the coarse aggregate in different sizes and blending them in the right proportions. The different sizes shall be stocked in separate stock piles. The grading of coarse and fine aggregate shall be checked as frequently as possible as determined by engineer, to ensure maintaining of grading in accordance with the samples used in preliminary mix design. The material shall be stock piled well in advance of use.

6.3 Cement: The cement shall be measured by volume in normal cases. However, in case of central weight batching plants, cement may be weighed for each batch if so desired by Engineer-in-Charge.

6.4 Water: Only such quantity of water shall be added to the cement and aggregates in the concrete mix as to ensure dense concrete, specified surface finish, satisfactory workability, consistent with the strength stipulated for each class of concrete. The water added to the mix shall be such as not to cause segregation of material or the collection of excessive free water on the surface of the concrete. The water cement (W/C) ratio is defined as the volume of water in the mix (including the surface moisture of the aggregates) divided by the volume of cement in the mix. The actual water cement ratio to be adopted shall be determined in each instance by the contractor and approved by the Engineer-in-Charge.

The W/C ratio specified for use by engineer shall be maintained. The contractor shall determine the water content of the aggregates as frequently as directed by engineer as the work progress and as specified in IS 2386 (Part-III) and the amount of water added at the mixer shall be adjusted as directed by engineer so as to maintain the specified W/C ratio. To allow for the variation in volume of aggregates due to variation in their moisture content suitable adjustments in the volume of aggregates shall also be made.

7 Curing, protecting, repairing and finishing

7.2 Curing

All concrete shall be cured by keeping it continuously damp for the period of time required for complete hydration and hardening to take place. Preference shall be given to the use of continuous sprays or ponded water continuously saturated covering of sacks, canvas, hessian or other absorbent materials, or approved effective curing compounds applied with spraying equipment capable of producing a smooth, even textured coat. Extra precautions shall be exercised in curing concrete during cold and hot water as outlined hereinafter. The quality of curing water shall be the same as that used for mixing concrete.

Certain types of finish or preparation for overlaying concrete must be done at certain stage of the curing process and special treatment may be required for specific concrete surface finish.

Curing of concrete made of high alumina cement and super-sulphated cement shall be carried out as directed by engineer.

Fresh concrete shall be kept continuously wet for a minimum period of 10 days from the date of placing of concrete following a lapse of 12 to 14 hours after lying of concrete. The curing of horizontal surfaces exposed to the drying winds shall however begin immediately after the concrete has hardened.

Water shall be applied uniformly to concrete surfaces within 1 hour after concrete has set. Water shall be applied to formed surfaces immediately upon removal of forms. Quantity of water applied shall be controlled so as to prevent erosion of freshly placed concrete.

Whenever, by the judgment of engineer, it may be necessary to omit the continuous spray method, a covering of clean sand or other approved means such as wet gunny bags which will prevent loss of moisture from the concrete, may be used. No type of covering will be approved which would stain or damage the concrete during or after the curing period. Covering shall be kept continuously wet during the curing period. Surface coating type compounds shall be used only by special permission of engineer. Curing compounds shall be liquid type white pigmented. Other curing compounds shall be used on surfaces where future blending with concrete, water or acid proof membrane or painting is specified.

All equipment and materials required for curing shall be on hand and ready for use before concrete is placed.

7.3 Protecting fresh concrete

Fresh concrete shall be protected from defacements and damage due to construction operation by leaving forms in place for an ample period as specified later in this specification. Newly placed concrete shall be protected by approved means such as tarpaulins from rain, sun and winds. Steps as approved by engineer shall also be taken to protect immature concrete from damage by debris, excessive loading, vibration, abrasion or contact with other materials etc. that may impair the strength and / or durability of the concrete. Workmen shall be warned against and prevented from disturbing green concrete during its setting period. If it is necessary that workmen enter the area of freshly placed concrete, engineer may require that bridges be placed over the area.

7.4 Repair and replacement

Immediately after the shuttering is removed, the surface of concrete shall be very carefully inspected and all defective areas called to the attention of engineer who may permit patching of the defective areas or also reject the concrete unit either partially or entirely. Rejected concrete shall be removed and replaced by contractor at no additional expense. Holes left from bolts etc. shall be filled up and made good with mortar composed of one part of cement to one and half parts of sand passing 2.36 mm IS sieve after removing any loose stones adhering to the concrete and shall be finished as described under the particular items of work.

Superficial honeycombed surfaces and rough patches shall be similarly made good immediately after removal of shuttering in the presence of engineer and superficial water and air holes shall be filled in. The mortar shall be well worked into the surface with a wooden float. Excess water shall be avoided. Unless instructed otherwise by engineer, the surface of the exposed concrete placed against shuttering shall be rubbed down immediately on removal of shuttering to remove fine or other irregularities and necessary care being taken to avoid damage to the surface. Surface irregularities shall be removed by grinding.

Undertaking

Date:

To
The Regional Manager
AFPRO Regional office,
No 56, Hutchins roads, 6th Cross,
St. Thomas town, Bangaloe-560084,
Ph. 080-25461711

Ref.: Tender notice: AFPRO/Checkdam-11/Hasiruvalli/2021-22 Construction of RCC Check dam (CD-11) at village Hasiruvalli, Nelamangala Block, Bangalore Rural District

Dear Sir,

In response to the tender invited by you, I / We have examined the notice, conditions, specifications and terms of the contract and I / we agree to abide by all instructions in these documents attached here to and hereby bind myself / ourselves to execute the work as per schedule stipulated in the tender notice.

I / We further agree to sign and execute all agreements / bonds as may be required by AFPRO to abide by the all conditions of the contract and to carry out all work as per specifications, failing which, I / We shall have no objection for the for feature of the security money deposited with AFPRO at the time of signing of agreement.

I / We also undertake that I / We have not been blacklisted by any entities any time.

I / We enclose herewith the required documents.

Sincerely yours,

Signature of bidder with seal

Encl.:

1. Price bid

**Annexure – I
Price Bid**

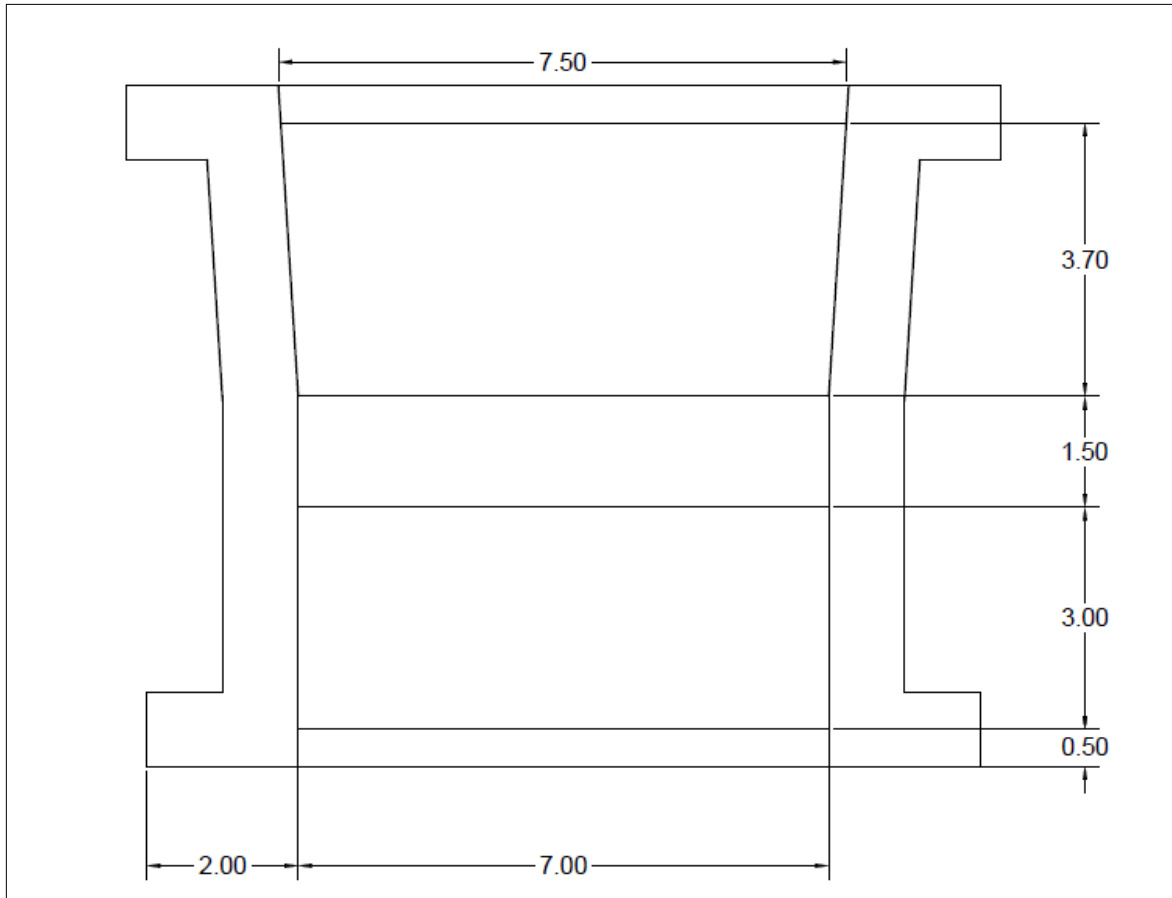
Name of Work - Construction of New R.C.C. Check dam NO. 11

Sl. No	QTY	DDESCRIPTION OF WORK	RATE	PER	AMOUNT
1	993.75	Earth work deploying earth moving machinery for desilting channel and forming bund on either side & depositing the earth on banks including jungle clearance etc. Complete Having width of 3m - 10m		Cum	
2	168.18	Excavation for foundation in all kinds of soil including boulders upto 0.60 m dia (0.113 cum) for dam, spillway, intake structure, surface power house and other appurtenant works and placing the excavated soil neatly in specified dump area or disposing off the same as directed including cost of all materials, machinery, labour etc., complete with lead upto 1 km and all lifts.		Cum	
3	15.03	Cement concrete 1:4:8 using 40 m.m. size H.B.Stones For 10 Cum Including curing etc. Complete		Cum	
4	217.66	Supplying and erecting centering for PCC		Cum	
5	49.62	Cement concrete 1:2:4 using 20 m.m. size H.B.Stones For 10 Cum Including curing etc. Complete		Cum	
6	45.93	Cement concrete 1:2:4 using 20 m.m. size H.B.Stones For 10 Cum Including curing etc. Complete		Cum	
7	33.90	Cement concrete 1:2:4 using 20 m.m. size H.B.Stones For 10 Cum Including curing etc. Complete		Cum	
8	11.10	Rough stone dry packing for revetment works		Cum	
9	141.05	Steel		KG	
		Sub Total			
		GST @ 12% for Rs			
	LS	Board & Unforeseen items		No.s	
		Grand Total			

Signature of Contractor

Date -

Design Details



Technical Specification of the R.C.C. Check dam	
Total Length of Main Wall	7.00 M
Top width of Main Wall	0.60 M
Bottom width of Main Wall	1.50 M
Height of Main Wall from GL	1.40 M
Depth of Foundation	1.50 M
Upstream Side Wing Wall	
Length on Left side	4.20 M
Length on Right Side	4.20 M
Length of Wing Wall on Downstream Side	
Left side	3.50 M
Right Side	3.50 M
Wing Wall Width	1.0 M
Stone Pitching	5.0 M

Signature of Contractor

Date -