

# GOVERNMENT OF ODISHA

PANCHYATIRAJ & DRINKING WATER DEPARTMENT



## INVITATION FOR BIDS

FOR THE WORK

“Construction of Chek Dam near Jamardiha village in Pallahara Block”

OFFICE OF PANCHAYAT SAMITI, PALLAHARA

Bid Identification No-01 / BDOPLR/ANGUL/2021-22

TENDER CALL NOTICE NO- (01) of 2021-22

Cost put to tender : Rs 17,34,857.00

(Rupees Seventeen lakh thirty four thousand eight hundred fifty seven) only

Block Development Officer, Pallahara  
Block Development Office  
Pallahara

Signature of Tenderer

**COVER-I**  
**TECHNICAL BID DOCUMENTS**

Signature of Tenderer

**CHECK LIST**

(To be filled by the Tenderer)

- |     |   |    |  |
|-----|---|----|--|
| 1.  | <b>Name of the Tenderer</b>   | :- |  |
| 2.  | <b>Class of Contractor</b>  | :- |  |
| 3.  | <b>Permanent address</b>  | :- | <b>At:-</b><br><b>PO:-</b><br><b>P.S.:-</b><br><b>Dist.-</b>                                   |
| 4.  | <b>Corresponding address</b>  | :- | <b>At:-</b><br><b>PO:-</b><br><b>P.S.:-</b><br><b>Dist.:-</b><br><b>Phone no. / Mobile no.</b> |
| 5.  | <b>Registration No. with issuing Authority</b>                                    | :- |  |
| 6.  | <b>Registration valid up to</b>   | :- |  |
| 7.  | <b>PAN No.</b>  | :- |  |
| 8.  | <b>GST Registration No. (With issuing Authority)</b>                              | :- |  |
| 9.  | <b>E.M.D. (Amount/In shape of)</b>  | :- |  |
| 10. | <b>Income Tax Clearance/ Return Certificate of preceding Assessment Year</b>      | :- |  |
| 11. | <b>Cost of tender paper (Amount with M.R. No. &amp; date with issuing office)</b> | :- |  |
| 12. | <b>Annexure – I</b>   | :- | <b>Furnished / Not furnished</b>   |
| 13. | <b>Annexure – II</b>  | :- | <b>Furnished / Not furnished</b>   |
| 14. | <b>Annexure – III</b>   | :- | <b>Furnished / Not furnished</b>   |
| 15. | <b>Annexure – IV</b>  | :- | <b>Furnished / Not furnished</b>   |
| 16. | <b>Annexure – V</b>   | :- | <b>Furnished / Not furnished</b>   |

**Signature of the Bidder / Tenderer**

Signature of Tenderer

**CONTRACT DATA****A. GENERAL INFORMATIONS**

Sl	Particulars	Details
1	Bid Identification No.	01 / BDOPLR/ANGUL/2021-22
2	Name of the Work	“Construction of Chek Dam near Jamardiha village in Pallahara Block”
3	Tender Inviting Authority	Block Development Officer, Pallahara
4	Accepting Authority	Block Development Officer, Pallahara
5	Estimated Cost (amount put to tender)	Rs. 17,34,857/- (Approx)

**B. BID INFORMATION**

6	Intended completion period/Time period assigned for Completion	3 (Three ) calendar Months
7	Last Date & time of submission of Technical Bid and Financial Bid (Clause No. 2 of DTCN.)	<b>Time:01.00PM</b> <b>Date: 11/05/2021</b>
8	Cost of Bid Document	
	i Amount	6000.00
	ii Demand Draft	Drawn in favour of Block Development Officer Pallahara, payable at Pallahara
9	Bid Security	
	i Amount	17348/-(Rupees Seventeen thousand three hundred forty eight) only
	ii Pledged in favour of	<b>Block Development Officer, Pallahara</b>
	iii payable at	Pallahara
	iv Type of instrument	As specified in the Bid document
10	Bid validity period	90 days
11	Currency of Contract	Indian Rupees
12	Language of Contract	English

Signature of Tenderer

**PANCHAYAT SAMITI OFFICE: PALLAHARA**  
**INVITATIONS FOR BIDS (IFB)**

**No 01 Date 23.04.2021**

**Bid Identification No-01 / BDOPLR/ANGUL/2021-22**

**TENDER CALL NOTICE NO- (01) of 2021-22**

1. Block Development Officer, Pallahara on behalf of Governor of Odisha invites sealed **percentage rate** bids for the following work as detailed in table below in **double cover system** from contractors registered with the State Governments and contractors of equivalent Grade / class registered with Central Government / MES / Railways for execution of composite works on production of definite proof from the appropriate authority to be eventually drawn up in PWD P1 Agreement Form . The adopted format for percentage rate is the same as that of the form adopted for **item rate** tenders but the word "**Item rate**" shall be replaced by "**Percentage rate**" and the contract will be named as **P-1**.
2. The bidders may submit bids for the following works.

SI No	Name of work	Approx estimated Cost (Rs.in lakh)	Place of sale/submission of tender paper	Class of contractor eligible	Bid Security / E.M.D (Rs.)	Cost of bid documents (Non refundable) (Rs.)	Period of completion (In months)
1	2	3	4	5	6	7	8
1	Construction of Chek Dam near Jamardiha village in Pallahara Block	17,34,857/-	O/O Panchayat Samiti, Pallahara	'D' & 'C' class	17,348/-	6000.00	3(Three Calendar Months)

3. The bid documents shall be purchased from Office of the Panchayat Samiti, Pallahara by paying tender paper cost in shape of D.D drawn in favour of Block Development Officer, Pallahara payable at Pallahara for bid document as per Col-7. It can also be downloaded from the website [www.angul.nic.in](http://www.angul.nic.in).
4. The bid is to be submitted in two covers super-scribing "Technical bid" and "Financial bid" in appropriate cover and both the covers are to be put inside one packet superscribing on top as per Col-2 "Tender for....." for each work separately.
  - (i) Cover-I ( Technical Bid ) is to contain EMD as mentioned in Col.-6 in shape of N.S.C./K.V.P./Postal Savings Bank Accounts/Post Office Term Deposit Account/TDR of any Nationalised Bank duly pledged in favour of the Block Development Officer, Pallahara payable at Pallahara , DD including also the cost of bid document drawn in favour of Block Development Officer, Pallahara payable at Pallahara (if bid document downloaded from website), s e l f attested photo copies of registration certificates, PAN card, valid GSTIN registration Certificate/Clearance certificate, undertaking/certificates duly filled, affidavit, work experience certificate, machineries available etc.
  - (ii) Cover-II (Financial Bid) is to contain the price bid duly filled in and signed by the bidder failing which the bid documents shall be liable for rejection.
5. Date for sale of the Bid documents: **dt.23.04.2021 to dt. 11.05.2021**.
7. Last date of receipt of Bid documents **dt.11.05.2021 (01.00 P.M.)** which must be

Signature of Tenderer

delivered in the tender box kept in the office, over which the detailed Tender Notice No. & Date is written or through Registered Post/Speed Post only as mentioned in Col-4. The authority will not be held responsible for any type of Postal delay in delivering of the bid documents or non-receipt of the same.

8. The Technical Bids will be opened on dt. **12.05.2021 (10.00 A.M.)** in the Office of the Panchayat Samiti, Pallahara in presence of the tender committee and the bidders or their authorized representatives and the opening of Financial Bids will be declared after verification of the technical bids. If any of the date of sale, receipt or opening will be declared as Government Holidays, then the next working day shall be considered for sale of tender paper, receipt and opening respectively at the same time and venue.
9. Engineering Contractor desirous of availing E.M.D. exemption shall submit an affidavit to the effect that he/she has not availed these facilities for more than three works during the current financial year. The name of the work and authority to whom he has submitted the tender shall be specified in the affidavit. If the same will not be enclosed with the tender it shall be treated as normal and no claim for E.M.D. exemption shall be entertained.
10. The other details can be seen from the bid documents.
11. The Authority reserves the right to reject any or all the tenders without assigning any reason thereof. The decision of the tender committee shall be final and binding.
12. Additional performance security shall be deposited by the successful bidder when the Bid amount is less than estimated cost put to tender. The successful Bidder shall deposit the additional performance security in shape of Post Office Savings Bank Account/ National Savings Certificate/ Post Office Time Deposit Account/ Kisan Vikas Patra/ Deposit Receipt of Schedule Bank duly pledged in favour of **Block Development Officer, Pallahara payable at Pallahara** at the time of execution of agreement.
13. The bidders have to submit only one tender paper for the above work. **Submission of more than one tender paper by bidder for the work will liable for rejection of all such tender papers.**



**BLOCK DEVELOPMENT OFFICER**  
**PALLAHARA**  
Block Development Officer  
Pallahara

Signature of Tenderer

**OFFICE OF THE PANCHAYAT SAMITI, PALLAHARA.**

**DETAILED TENDER CALL NOTICE (DTCN)**

1. Sealed percentage rate bids are invited in two cover system from "C&D" class contractors registered with the State Government and contractors of equivalent Grade / class registered with Central Government / MES / Railways for execution of civil works on production of definite proof from the appropriate authority. But successful bidder other than State/ MES/ Railways/ CPWD in equivalent rank has to register under the State PWD before signing the agreement in prescribed form to be eventually drawn in P.W.D. FORM F2 (now name as P1) for "Construction of Chek Dam near Jamardiha village in Pallahara Block".
2. Bids must be delivered by registered post/speed post only.
3. The sale of the Bid document shall start from dt. **23.04.2021** and close on dt. **11.05.2021** up to **1.00P.M.**
4. The tender will be opened by the B.D.O, Pallahara in the office of the Panchayat Samiti, Pallahara on dated **12.05.2021** at **10.00 A.M.** in the presence of the bidders or their authorized representatives who wish to attend.
5. The tender should be accompanied with the attested true copies of the valid Registration certificate, GST Registration No. and PAN card, and the original certificates are to be produced within 2 (two) days of opening of bid documents of the tender before B.D.O, Pallahara for verification & the Engineer contractor must be produced for entering the exemption of E.M.D. during opening of the tender before B.D.O, Pallahara otherwise his/her bid shall be declared as non-responsive and thus liable for rejection. Tenderer represented through Power of Attorney holder should ensure that the Power of Attorney is duly registered containing the photographs of both the license holder and the person to whom the Power of Attorney is given otherwise the tender will be rejected.
6. If an individual makes the application, the individual should sign above his full type written name and current address.
7. If the application is made by proprietary firm, it shall be signed by the proprietor above his full type written name and the full name of his firm with its current address.
8. If the application is made by a firm in partnership, it shall be signed by all the partners of the firm above their full type written names and current address, or alternatively by a partner holding power of attorney for the firm in which case a certified copy of the power of attorney shall accompany the application. A certified copy of the partnership deed and current address of all partners of the firm shall also accompany the application.
9. If the application is made by a limited company or a corporation, it shall be signed by duly authorized person holding power of attorney for signing the application in which case a certified copy of the power of attorney shall accompany the application. Such limited company or corporation will be required to furnish satisfactory evidence of its existence along with the tenders.
10. The bid must be accompanied by E.M.D. of 1% of amount put to tender, rounded to nearest hundred rupees along with tender in the form of Deposit receipt of Schedule Bank / Kissan Vikash Patra / Post Office Savings Bank Account / National Savings Certificate / Postal Office Time Deposit Account duly pledged in favour of the B.D.O, Pallahara and payable at Pallahara as per the terms and conditions laid down in OGFR and in no other form. Tenders not accompanied with EMD as specified above shall be liable for rejection.  
**N.B.:- Bank draft/ Pay orders or Banker's cheque from any schedule bank in favour of B.D.O, Pallahara shall not be considered as E.M.D.**
11. The earnest money will be retained in the case of successful tenderer and will be dealt with as per the terms and conditions of the O. P. W. D. Code and will not carry any interest. The earnest money will be refunded to the unsuccessful tenderers on application.
12. The prescribed form along with other Bid documents can be obtained from the office of the Block Development Officer, Pallahara on payment of requisite cost as stipulated in the IFB (above) in shape of Demand draft drawn on any Nationalized Bank in favour of the B.D.O, Pallahara payable at Pallahara. The amount is not refundable. Tender must be submitted in sealed covers **without writing their name on the outer cover** containing the Bid documents. The envelope

Signature of Tenderer

containing the bid document should be super-scribed with the "Name of work" only.

13. Bidding documents requested by mail will be dispatched by registered / speed post on payment of an extra amount of **Rs.500.00** (Rupees five hundred) only over the cost of the document. The BDO, Pallahara will not be held responsible for the postal delay if any, in the delivery of the documents or non-receipt of the same.
14. The tender should be strictly in accordance with the provisions as mentioned in the tender schedule. Any change in the wordings will not be accepted.
15. No tender document will be sold to the intending tenderers after the scheduled date and time fixed for the purpose.
16. No tenderer will be permitted to furnish their tender in their own manuscript papers. All information should be submitted in English. The applicant's name should appear on each page of the tender documents along with his signature or the signature of his authorized representative at the bottom of each page.
17. The works are to be completed in all respects within given **03(Three) calendar** months including rainy season from the date of issue of work order. Tenderers whose tender is accepted must submit a work program at the time of execution of Agreement.
18. All tenders received will remain valid for a period of **90 (ninety)** days from the date of receipt of tenders and validity of tenders can also be extended if agreed to by the tenderer and B.D.O, Pallahara.
19. Submission of more than one tender by a bidder for a particular tender will liable for rejection of all such tender papers.
20. **In the case of Percentage Rate Tenders, only Percentage quoted shall be considered. Percentage quoted by the Contractor shall be accurately filled in figures and words, so that there is no discrepancy.**

**The percentage quoted in the tender without mentioning excess or less and not supported with the corresponding amount will be treated as excess. The Contractor will write percentage excess or less up to one decimal point only. If, he writes the percentage excess or less up to two or more decimal point, the first decimal point shall only be considered without rounding off. Where the Contractor has omitted to quote the rates either in figures or in words, the Officer opening the tender should record the omission.**

That if any discrepancy is found in percentage quoted in words and figures or the total rate quoted by the Contractor, the following procedure shall be followed:-

- (i) If any discrepancy is found in percentage quoted in words and figures, then the percentage quoted by the Contractor in words shall be taken as correct.
  - (ii) If any discrepancy is found in the percentage quoted in percentage excess/ less and total rate quoted by the Contractor, then percentage will be taken as correct.
  - (iii) The percentage quoted in the tender without mentioning excess / less supported with corresponding amount does not tally with either to percentage excess or less then it will be treated as percentage excess.
  - (iv) The tender shall be written legibly and free from erasures, over writings or corrections of figures. Corrections, over writings & interpolations where unavoidable should made by making out, initialing, dating and rewriting.
  - (v) The quantity mentioned can be increased or reduced to the extent of 10% for individual items subject to a maximum of 5% over the estimated cost. If it exceeds the limit stated above prior approval of competent authority is mandatory before making any payment.
  - (vi) The period of completion is fixed and cannot be altered except in case of exceptional circumstances with due approval of next higher authority.
  - (vii) In the contract P1 time is the essence. The contractor is required to maintain a certain rate of progress specify in the contract.
21. Bills for percentage rate tenders shall be prepared at the estimated rates for individual items only and the percentage excess or less shall be added or subtracted from the gross amount of the bill.

Signature of Tenderer



22. The tenderers shall carefully study the tentative drawings and specifications applicable to the contract and all the documents which will form a part of the agreement to be entered in to by the accepted tenderer and detailed specifications for Orissa and other relevant specifications and drawings & codes which are for sale. Complaint at a future date that plans and specifications have not been seen by the tenderers cannot be entertained.
23. The drawing furnished with the tender are tentative and subject to revision or modification as tendered during the execution as per actual necessity and detail test conducted. But the tendered rates noted by the tenderer will hold well in case of such modification of drawings during the time of execution and shall in no way invalidate the contract and no extra monetary compensation will be entertained. The work shall however be executed as per final approved drawing to be issued by the Engineer-in-Charge as and when required.
24. Every tenderer is expected before quoting his rates to inspect the site of the proposed work. He should also inspect the quarries and approach roads to quarries and satisfy himself about the quality and availability of materials. In every case the materials must comply with the relevant specifications. Complaints at future date that the availability of materials at quarries has been misjudged cannot be entertained.
25. The tender at the discretion of the competent authority may not be considered unless accompanied by the attested true copies of the income tax clearance certificate, Pan card, GST clearance certificate, VAT clearance certificate/ non-assessment certificate as the case may be and the original certificates are to be produced before the Block Development Officer, Pallahara at the time of execution of F2 (now name as P1) agreement for verification.
26. Additional performance Security: Additional performance security shall be deposited by the tenderer to the extent of the differential cost of the bid amount and the estimated cost, in shape of Fixed deposit receipt of Schedule Bank / Kissan Vikash Patra / Post Office Savings Bank Account / National Savings Certificate / Post Office Time Deposit Account, duly pledged in favour of the B.D.O, Pallahara and payable at Pallahara, which will be over and above the performance security. The additional performance security in any other form will not be accepted. If the Contractor fails to complete the work, the amount so furnished as additional performance security will be forfeited in addition to the other penal clauses, if any, to be imposed.
27. The tender containing extraneous conditions not covered by the tender notice are liable for rejection and quotations should be strictly in accordance with the tender call notice. Any change in the wording will not be accepted.
28. The Contractors participated in the tender for more than one work may offer conditional rebate. Rebate offer submitted in separate sealed envelope shall be opened, declared and recorded first. The rebate so offered shall be considered after opening of all packages called in the same Tender Notice. The Contractors who wish to tender for two or more works shall submit separate tender for each. Each tender shall have the name and number of the works to which they refer, written on the envelope.
29. Schedule of quantities are accompanied in bills of quantity. It shall be definitely understood that the Government does not accept any responsibility for the correctness or completeness of this schedule and that this schedule is liable for alternation or omissions, deductions or alternations set forth in the conditions of the contract and such omissions, deductions, additions or alternations shall no way invalidate the contract and no extra monetary compensation, will be entertained. The quantity mentioned can be increased or reduced to the extent of 10% for individual items subject to a maximum of 5% over the estimated cost. If it exceeds the limit stated above prior approval of competent authority is mandatory before making any payment.
30. The P.R Deptt reserves the rights of authority to reject any or all the tenders received without assigning any reasons what-so-ever.
31. The tenderers whose tender is selected for acceptance of his tender make an initial security deposit in form of

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National Savings Certificate / Kissan Vikash Patra / Postal office time deposit / Post office savings Pass Book/ Deposit Receipt at any scheduled bank duly pledged in favour of the B.D.O, Pallahara and in no other form which include the amount already deposited as earnest money shall be 2 % of the value of the tendered amount and sign the agreement in the P. W. D. form No. F-2 (now name as P-1) (Schedule XLV No. 61) for the fulfillment of the contract in the office of the B.D.O, Pallahara or as directed. The security deposit together with the earnest money and the amount withheld according to the provision of F-2 agreement shall be retained as security for the due fulfillment of this contract. Failure to enter in to the required agreement and to make the security deposit as above shall entail forfeiture of the earnest money .No tender shall be finally accepted until the required amount of security money is deposited .The written agreement to be entered in between the contractor and the Govt. and the contract shall be deemed to be incomplete until the agreement has first been signed by the contractor and then by the proper officer authorized to enter in to the contract on behalf of the Govt. The security deposit will be refunded after twelve months of completion of the work and payment of the final bill and will not carry any interest .In case of tenderers who have fixed deposit; necessary action will be taken to degrade them if they decline to sign the agreement within the period as in the above case.

32. As concurred in by Law Department & Finance Department In their U.S.R. No 848 dtd.21.05.97 J.O.R.No.202 W.F.D. dtd.06.03.98 respectively the E.M.D. will be forfeited in case, where tenderers back out from the offer before acceptance of tender by the competent authority.
33. That for the purpose of jurisdiction in the event of disputes if any of the contract would be deemed to have been entered in to within the State of Orissa and it is agreed that neither party to the contract will be competent to bring a suit in regard to the matter by this contract at any place outside the State of Orissa.
34. The contractor should be liable to fully indemnify the department for payment of compensation under workman Compensation Act. VIII of 1923 on any account of the workmen employed by the contractor and full amount of compensation paid will be recovered from the contractor.
35. Tenderers are required to abide by the fair wages clause as introduced by Govt. of Orissa, Works Department Letter No.- VIII R 8 / 5225 , Dtd. -26.02.55 and No. -IIM 56 / 628842 (5) Dtd.-27.09.61 as amended from time to time.
36. In case of any complaint by the laborers working about the non-payment or less payment of his wages as per latest minimum Wages Act, the Project Director will have the right to investigate and if the contractor is found to be in fault, he may recover such amount due from the contractor and pay such amount to the labourer directly under intimation to the local labour office of the Govt. The contractor shall not employ child labour. The decision of the Project Director is final and binding on the contractor.
37. The contractor shall bear cost of various incidentals, sundries and contingencies necessitated by work in full within the following or similar category.
  - a) Rent, royalties and other charges of materials, Octopi duty, all other taxes including GST, ferry, tolls conveyance charge and other cost on account of land and building including temporary building and temporary electric connection to work site as well as construction of service road and diversion road and its maintenance till completion of work as required by the tenderer for Collection of materials, storage, housing of staff or other purpose of the work. No tenderer will however be liable to pay Govt. for temporary occupation of land owned by Govt. at the site of the work.
  - b) Labour camps or huts necessary to a suitable scale including conservancy and sanitary arrangements therein to the satisfaction of the local health authorities.
  - c) Suitable water supply including pipe water supply wherever available for the staff and labour as well as for the work.
  - d) Fees and duties levied by the municipal/ NAC/ Panchayat/ canal or water supply authorities.

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- e) Suitable equipments and wearing apparatus for the labour engaged in risky operations.
- f) Suitable fencing barriers, signals including paraffin and electric signal where necessary at works and approaches in order to protect the public and employees from accidents.
- g) Compensation including the cost of any suit for injury to persons or property due to neglect of any major precaution also becomes payable due to operation of the workmen compensation act.
- h) The contractor has to arrange adequate lighting arrangement for the work where ever necessary at his own cost.
38. After the work is finalized, all surplus materials, all rubbish, debris should be removed from the site of work. Preliminary work such as vats, mixing platforms. etc. should be dismantled and all materials removed from the site and premises left neat and clean, this should be inclusive of the rates.
39. No payment will be made for bench marks, level pillars profiles and benching and leveling the ground where required. The rates to be quoted should be for the finished items of work inclusive of carriage of all materials and incidental item of works.
40. It should be understood clearly that no claim what-so-ever will be entertained to extra items of works quantity of any item besides estimated amount unless written order is obtained from the Engineer-in-charge and rate settled before the extra items of work or extra quantity of any items of work is taken up.
41. The tenderer shall have to abide by the C.P.W.D. safety code rules introduced by the Government of India, Ministry of work Housing and Supply in their standing order No-44150 dtd.25.11.57.
42. If any further necessary information is required, B.D.O, Pallahara will furnish such but it must be clearly understood that the tenders must be received in order and according to the instructions.
43. **No Relation certificate.**  
The contractor shall furnish the following certificate along with the tender to the effect that he is not related to any officer in the rank of an Assistant Engineer & above in the state P.R.Deptt. or Assistant Secretary & above in the said Department. If the fact subsequently proved to be false, the contract is liable to be rescinded. The earnest money & the total security will be forfeited & he shall be liable to make good to the loss or damages resulting for such cancellations. The proforma for no relationship certificate is contained in a separate sheet vide Annexure-II.
44. An applicant or any of its constituent partners of whose contract for any work has been rescinded or who has abandoned any work in the last five years, prior to the date of the bid, shall be debarred from qualification. An **affidavit** to this effect is to be furnished in Annexure-V. The tenderer is to furnish an **affidavit** at the time of submission of tender paper about the authentication of tender documents including Bank guarantee. An **affidavit** to this effect is to be furnished in Annexure-I.
45. (i) The Contractors are required to furnish evidence of ownership/ leased deed of principal machineries/ equipment's in Annexure-III.
- (ii) The tenderer should furnish along with their tender a list of works executed during the last five years duly certified by the concerned Engineer-in-Charge ( not below the rank of Executive Engineer/ equivalent ) indicating the satisfactory completion for works as per the proforma enclosed in a separate sheet of Annexure-IV.
- (iii) In case the contractor proposes to engage machineries and equipments as asked for in the tender document, owned or hired but deployed outside the State, he/she is required to furnish additional 1% EMD /Bid Security. The entire bid security including the additional bid security shall stand forfeited in case the

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contractor fails to mobilize the machineries within a **week time from the date of execution of Agreement.**

(iv) The contractor intending to hire/lease equipments/machineries are required to furnish proof of ownership from the company/person providing equipments/machineries on hire/lease along with contracts/agreements/lease deed and duration of such contract. The contracts/agreements/lease deed should cover the entire period of work.

46. Tenderers are required to go through each clause of P.W.D. Form F-2 (now name as P1) carefully in addition to the clause mentioned herein before tendering.
47. Steel shuttering & centering or seasonal sal wood planks / bullahas shall be used which shall be lined with suitable sheeting and made leak proof and water tight.
48. The Department will have the right to inspect the scaffolding, centering and shuttering made for the work and can reject partly or fully such structures if found defective in their opinion.
49. Concrete should be machine mixed unless otherwise ordered in writing by the Executive Engineer, DRDA. The contractor should arrange his own concrete mixer, vibrator, pumps etc, for this purpose at his own cost.
50. Cement shall be used by bags and weight of one bag of cement being taken as fifty (50) Kg. Cost of empty cement bag @Rs.2.38 (Rupees two and thirty-eight paisa ) only per each should be deducted from the bill.
51. The contractor will be responsible for the loss or damage of any departmental materials during transit and in the execution of the work due to reasons what – so-ever and the cost of such materials will be recovered from the bills at stock issue rates or market rates whichever is higher.
52. If the contractor removes Government materials supplied to him from the site of work with a view to dispose of the same dishonestly, he shall be in addition to any other liability civil or criminal arising out of his contract be liable to pay a penalty equivalent to five times of the price of the materials according to the stock issue rate or market rate whichever is higher. The penalty so imposed shall be recovered at any time from any sum that may then or at any time thereafter become due to the contractor or from his security deposit or from the proceeds of sale thereof.
53. The selected contractor may take delivery of departmental supply according to his need for the work issued by the Block Development Officer, Pallahara subject to the availability of the materials. The tenderer shall make all arrangement for proper storages of materials but no cost for raising shed for storage, pay of watchman etc. will not be borne by the Department. The Department is not responsible for considering the theft of materials at site. It is the contractor's risk. Under any such plea if the tenderer stops the work, he shall have to pay the full penalty as per clause of F-2 agreement.
54. The Department will have the right to supply at any time in the interest of work any departmental materials to be used in the work and the contractor shall use such materials without any controversy or dispute on that account. The rate of issue of such materials will be at the stock issue rates inclusive of storage charges or rates fixed by the Department or current market rate whichever is higher.
55. All the materials which are to be supplied from block store will be as per availability of stock and the contractor will have to bear the charges of straightening, cutting, jointing, welding etc. to required sizes in case of M. S. Rods or Tor steel/ M.S Angles, Tees and Joists etc. After the issue from the store the materials may be under the custody of the contractor and the contractor will be responsible for its safety and storage.
56. The contractor should at his own cost arrange necessary tools and plants required for the efficient execution of work and the rates quoted should be inclusive of the running charges of each plant and cost of conveyance.
57. Orissa Bridge & Construction Corporation Ltd. will be allowed price preference up to 3% over the lowest quotation or tender as laid down in works and Transport Department Resolution No-285 date-17.04.1974 .The

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Orissa Construction Corporation will be allowed a price preference to the extent of up to 3% over the lowest tender amount (Where their tender is not the lowest) provided they express willingness to execute the work after reduction of rates by negotiation.

58. 1.03 % or the prevailing percentage of I.T. Department of the gross amount of the bill towards income tax will be deducted from the contractor's bill.
59. 1% of the gross amount of the bill will be deducted from the contractor's bill towards Cess as per the Building & Other construction Workers (RE & CS) Act.1996 & Building & Other Construction Worker Welfare Cess Act.1996.
60. The contractor is required to pay royalty to Govt. as fixed from time of time and produce such documents in support of their payment to the Block Development Officer, Pallahara with their bills, failing which the amount towards royalties of different materials as utilized by them in the work will be recovered from their bills and deposited in the revenue of concerned department.
61. No part of the contract shall be sublet without written permission of the Block Development Officer, Pallahara or transfer be made by power of Attorney authorizing others to receive payment on the contractor's behalf.
62. Any damages caused by natural calamities should be done by the contractor at his own cost. The Department will not be any way responsible for the same and will not pay any cost towards the repair done by the contractor.
63. The rates quoted by the contractor shall cover the latest approved rates of labours, materials, P.O.L. and Royalties. Arrangement of borrow areas; land, approach road to the work site etc. are the responsibility of the contractor.
64. The rate for each work of concrete items wherever dewatering is imperatively necessary the term dewatering shall mean the execution or operation of the items due to standing water as well as due to percolation of water. The quoted rates will be inclusive of this.
65. The materials, borrow areas and hutments at site should be arranged by the contractor at his own cost. No future complaint on this account shall be entertained.
66. The contractor shall not interfere with the execution of water supply or Electric fitting arrangements and any other work entrusted to any other agency by the department at any time during the progress of the work.
67. The contractor will have to arrange for water supply for all works and make sanitary arrangements at own cost for his labour campus. Contractor has to arrange adequate lighting arrangements for night work whenever necessary at his own cost.
68. Balling out water from the foundation either rain water or sub soil water if necessary should borne by the contractor. No payment will be made for bench marks, level pillars, profiles and benching and leveling ground where required. The rates quoted should be the items of work inclusive this incidental items ofwork.
69. All the quantities mentioned in the schedule are combination for ground floor land multi floors in case multi storied buildings the rates should be through for the same unless otherwise mentioned in the schedule of quantities for individual items.
70. All fittings for doors and windows if supplied by the contractor should be best quality and should got approved by the Executive Engineer before their use on the work.
71. **Payment for variation in price** - (Vide Works Department Memorandum No-12073 /W dt. 7.4.1986 and No-21369 dt. 25.09.91)

- (i) "If during the progress of the work the price of any material incorporated in the work increases or decreases as a result of increase or decrease in the average wholesale price Index (all commodities), and the

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contractor there upon necessarily and properly pays in respect of that materials (incorporated in the work) such increased or decreased price, then he shall be entitled to reimburse or liable to refund quarterly as the case may be, such an amount, as shall be equivalent to the plus or minus difference of 75% in between the Average wholesale Price Index (all commodities) which is operating for the quarter under consideration and that operated for the quarter in which the tender was opened, as per the formula indicated below:-

Formula to calculate the increase or decrease in the price of materials.

$$Vm = 0.75 \times \frac{Pm}{100} \times R \times \frac{(i - io)}{io}$$

Vm = Increase or decrease in the cost of work during the quarter under consideration due to change in the price of the materials.

R = The value of work done in Rupees during the quarter under consideration.

io = The average Wholesale Price Index (all commodities) for the quarter in which the tender was opened (as published in R.B.I. bulletin from time to time.)

i = The Average Wholesale Price Index (all commodities ) for the quarter under consideration.

PM= Percentage of materials component as per sub-clause of this clause.

(b) Similarly, if during the progress of work, the wages of labour increase or decrease as a result of increase or decrease in minimum wages for labour prescribed by Government and the contractor thereupon necessarily and properly pays in respect of labour engaged on execution of the work such increased or decreased wages then he shall be entitled to reimburse or liable to refund quarterly, as the case may be such an amount as shall be equivalent to the 75% plus or minus difference in between the minimum wages for labour which is operating for the quarter under consideration and that operated for the quarter in which the tender was opened as per the formula indicated below.

Formula to calculate the increase or decrease in the price of Labour.

$$VI = 0.75 \times \frac{PI}{100} \times R \times \frac{(i - io)}{io}$$

VI= Increase or decrease in the cost of work during the quarter under consideration due to changes in the minimum wages rate of labour.

R = The value of work done in Rupees during the quarter under consideration.

io =The minimum wages for labour as prevailed during the quarter under consideration in which the tender was opened.

i= The minimum wages for labour prevailed during the quarter under consideration.

PL= Percentage of labour component (as per sub-clause).

- Similarly, if during the progress of work, the price of Petrol, Oil and Lubricants (Diesel oil being the representative item for the price adjustment) increases or decreases as a result of the price fixed there for by the Government of India and the Contractor there upon necessarily and properly pays

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Category of Works.	Contractors Supply			Departmental Supply of materials.
	% Materials.	% Labour	% of P.O.L.	
Irrigation works				
a) Structural works.	20%	30%	5%	45%
b) Earthwork, Canal work, Embankment work etc.,	20%	60%	5%	15%
(R&B) Works				
a) Bridge works	20%	30%	5%	45%
b) Road work	45%	40%	5%	10%
c) Building works	*30%	30%	5%	35%

such increased or decreased price towards Petrol, Oil and Lubricants used on execution of the work, then he shall be entitled to reimburse or liable to refund, quarterly as the case may be, such an amount, as shall be equivalent to the 75% plus or minus difference in between the price of P.O.L. which is operating for the quarter under consideration and that operated for the quarter in which the tender was opened as per the formula indicated below :

$$KI = \frac{0.75 \times K_2}{100} \times \frac{R (D_2 - D_1)}{D_1}$$

KI = Increase or decrease in the cost of work during the quarter under consideration due to changes in the price of P. O. L.

R = the value of work done in Rupees during the quarter under consideration.

D<sub>1</sub> = Average Price per liter of diesel oil which was fixed by the Government of India during the quarter in which the tender was opened.

D<sub>2</sub> = Average Price per liter of diesel oil which is fixed during the quarter under consideration.

K<sub>2</sub> = Percentage of P. O. L. component as per sub-clause.

- The following shall be the percentage of materials, labour and P. O. L. component for reimbursement / refund on variation in price of material, labour and P. O. L. as per Sub- classes (a), (b) and (c) of this Clause.

(\* where brick is supplied by the Department, it should be 20 % instead of 30%)

- Vide Works Department letter No-21369 dated-22.09.91, the reimbursement / refund on variation in price of materials, labour and P. O. L. as per sub-clauses (a), (b) and (c) of this clause shall be applicable in the following manner.

"in term of aforesaid escalation clause, where the period for completion of the work as stipulated in the agreement is less than one year, no escalation admissible at all, in case of work where the stipulated period of completion is one year and more escalation on account of price variations is admissible only for the remaining period after excluding the one year period thereof, provided that the work has been carried out by the contractor in terms of the relevant provisions of the agreement. In the situation, where the period of completion initially stipulated in the

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agreement was less than one year and subsequently the completion period has been validly extended on the ground that the delay in completion of the work is not attributable to the contractor and in the result the total period including the extended period stands at one year or more, escalation is admissible only for the remaining period after excluding the first one year period there from "

• The contractor shall for the purpose of sub-clauses (a), (b) & (c) of this clause keep such books of account and other documents as are necessary to show that the amount of increase claimed or reduction available and shall allow inspection of the same by a duly authorized representatives of Govt. and further, shall at the request of the Engineer-in-Charge furnish, verified in such a manner as the Engineer-in-Charge may require any document kept and such other information as the Engineer-in-Charge may require . The contractor shall within a reasonable time of his becoming aware of any alteration in the price of such material, wages of labour and/ or price of P.O.L. give notice thereof to the Engineer-in-Charge stating that the same is given pursuant to this condition together with an information relating their to which he may be in a position to supply.

72. After completion of the work the contractor shall arrange at his own cost all requisite equipments for testing building if found necessary and bear the entire cost of such test.
73. Department will not supply any materials what so ever for the work. The tenderers shall be financially solvent and stable for advance procurement of all materials required for the work vide Govt. of Orissa, Finance Department Memo No.48443/F Code-46/95 dt.11.12.1995.
74. All reinforcement cement concrete works like lintels, column, beam, chajja, roof slab, grid slab and other such works should be finished smooth and no extra charges for plastering if required shall be paid by the department.
75. No claim for carriage of water what-so-ever will be entertained.
76. The contractor shall employ one or more Engineering Graduate or Diploma holders as apprentice at his cost if the work as shown in the tender exceeds Rs.2,50,000/-. The apprentices will be selected by the Chief Engineer. The period of employment will commence within one month after the date of work order and would last till the date, when 90% of the work is completed. The fair wage to be paid to the apprentices should not be less than the emolument of personnel of equivalent qualification employed under Government. The number of apprentices to be employed should be fixed by the Chief Engineer in the manner so that the total expenditure does not exceed one percent of the tendered cost of the work.
77. Under no circumstances interest is chargeable for the dues or additional dues if any payable for the work.
78. Under section 12 of contractors labour (Regulation and Abolition) Act. 1970 the contractor who undertakes execution of work through labour should produce valid license from licensing authorities of labour Department.
79. **Sample of all material** - The contractor shall supply sample of all materials fully before procurement for the work for testing and acceptance as may be requiring by the concerned Executive Engineer. Charges for testing will be borne by the contractor.
80. The contractor shall have no claim what so ever for the extra quantity of work to be executed in view of above possible changes and payments is to be made as per clause II of the P-1 Contract.
81. Over and above these conditions, the terms and conditions and rules and regulations and specifications as laid down in **Orissa Detailed Standard Specification, Orissa P.W.D. Code, National Building code and CPWD specifications are also binding** on the part of the contractor.
82. The machineries, if available, with the department may be supplied on hire as per charges noted in the enclosed statement subject to the condition that the contractor will execute in advance an agreement with the Engineer-in-Charge

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83. In the event of any delay in the supply of Department machineries for unavoidable reasons, no extension of time will be granted to the contractor under any circumstances.
84. **Condition for issue of plant & machinery to contractor on hire:** - Tools & plants will be issued to the contractor only if it is desirable in the interest of Govt. works and if these can be spared without inconvenience to the Department. The Sanction of the Addl. P.D (Tech) shall be necessary in each case. The contractor shall arrange his programme of work according to the availability of the plant & machinery & no claim will be entertained for any delay in supply by the Department. An agreement shall be entered in to by the contractor to the effect that these hire charges are recoverable from the bills of the contractor regularly and the final payment for the work including refund of security deposit will not be made until the total amount due to the Government on account of hire of machinery etc. is recoverable in full. Full amount of hire charges due from the contractor at any contract at any time shall be recovered from his next subsequent bill .All transit and incidental charges in connection with the dispatch of tools and plants and machineries from workshop shed/ deposit return there to, will be borne by the contractor .The hire charge shall be recovered at the prescribed rates from and inclusive of the date, the plant and machinery is made over up to and inclusive of the date of its return, even though the same day it may not have been utilized for any reason except for a major break down which may take more than 72 hours for repairs. The contractor shall immediately intimate in writing to the Engineer –in-charge when any plant or machinery goes out of order requiring major repairs .The hire charges are for clock hours. In case of tar boilers, hot mix plant and any other machinery requiring similar preparation the working hour will include the time required to make up the boiler temperature and bring plant to the operating conditions before the actual start of work .The machine will work in shifts of 8 hours each. Extra charges towards overtime wages of any of the operating and maintenance staff will be livable. These charges will be fixed by the Engineer-in-charge from time of time. In no case the tools and plants shall be operated beyond 8 hours in any shift without prior written permission of the Engineer-in-charge. The contractor shall release the plant and machinery as and when required for periodical servicing and maintenance. He shall also provide for any labour and water source for washing the plants. In the case of Concrete mixtures, pavers and similar such type of equipments, the contractor shall arrange to get the hopper cleaned and the drums etc. washed at the close of work each day .The plant and machinery once issued to a contractor shall not be returned by him on account of lack of arrangement of labour and material etc. on his part. The same will be returned only when they do not require or when in the option of Engineer-in-charge the work or a portion of work for which issued is completed .The tools and plants shall while in transit and in the custody of contractor be at his sole risk and responsibility for damages and / or loss except fair wear and tear. The damage or loss as assessed by Engineer-in-charge shall be made good by the contractor. In the event of

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a disagreement as to the extent of damage or the value of article lost, the decision of superintending Engineer shall be final. The contractor shall on or before the supply of plant and machinery sign an agreement in indemnifying the Govt. against loss or damage to the machine. The Contractor shall also be responsible for any claim for compensation for loss of life, injury or damages to property etc. arising from any cause whatsoever. The contractor shall provide full time choukidar for guarding the plant and machinery at site. If the articles are not returned within the date originally specified or extended by the Engineer-in-charge, in addition to the normal hire charge, a surcharge equal to 10% of the hire charges will be levied for the period that the machinery is not returned. such period will be treated as working time In the event of the non-return of the machinery, the full value of the articles at the current market price will be recovered from the contractor's outstanding bills or any bills that may become due in respect of his other work under the state public works Department. The decision of the superintending Engineer shall be final in case of dispute.

**FORM OF AGREEMENT** – The contractor shall, before taking the possession of the machinery, enter in to an agreement with the Engineer-in-charge or his nominees in the form attached.

Log Books for recording the hours of daily works for each of the plant and machinery supplied to the contractor will be maintained by the Department will be attested by the contractor or his authorised agent daily. In case of contractor contests the correctness of the entries and / or fails to sign the log book, the decision of the Engineer-in-charge shall be final and binding on him. Hire charges will be calculated according to the entries in the logbook and will be binding on the contractor.

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## AGREEMENT FOR LOANS OF GOVERNMENT TOOLS & PLANTS .

This agreement made the \_\_\_\_\_ Two Thousand \_\_\_\_\_  
 \_\_\_\_\_ between (here-in-after referred to as "the hirer" which expression shall unless excluded by or repugnant to the context include his heirs, executors, administrators and assigns) of the one part and the Govt. of Orissa (here in after referred to as the Governor which expression shall unless excluded by or repugnant to the context include his successors in office as assigns) of the other part.

Where as the hirer desirous of hiring the tools and plants of the P. W. Department of the Orissa Govt. and more particularly specified in the schedule here under between here in after referred to as "the tools and plants".

And where as Government has agreed to let in hire the tools and plants to the hirer on the terms and conditions here in after mentioned.

Now it is here by and between the parties here to as follows:-

- (a) In consideration of agreement that hire charges be recovered from their bill for work executed on which this machinery will be used or any other than standing in the names of contractors in the book of the Department or any other Government Department. The Govt. agrees to let the hirer tools and plants for the period to be computed from the date of delivery of the tools and plant to the hirer at the P.W. Department workshop at Angul.
- (b) The rate of higher charges will be as mentioned in the schedule attached.
- (c) The hirer shall not transfer, assign or sublet or in any way part with the tools and plants or any part there-of without the previous written approval of the Engineer-in-charge
- (d) On the expiry of the period of the hire, the hirer shall return the tools and plants to the Public Works Department. & workshop /store at Angul in the same good condition in which they were received by him.
- (e) In the event of the tools and plants not being returned on the expiry of the above-mentioned period, the hirer shall without prejudice and any other liability pay to the Government on account equivalent to the rate of hire specified for the working period and an increase of ten percent.
- (f) The tools and plants shall be open for inspection at all times to the officers of the Government.
- (g) The hirer shall not operate the tools and plants so hired for more than one shift / two shifts of 8 hours each per day without the prior sanction of the Engineer-in-charge. If the hirer operates the tools and plants beyond the aforesaid limit without the prior sanction of the Assistant Engineer, he shall pay to Government additional hire charges as well as over time charges for staff for such excess operation at the rate approved by the Engineer-in-charge from time to time.
- (h) In case of breakdown, repairable at the site within a period of three days hire charges as specified in the schedule will be levied except in case of major repairs.
- (i) Normally the tools and plants will be supplied with operating staff.
- (j) The hirer shall be responsible for any claims for compensation for loss of life, injury or damage to property etc. arising due to any causes what-so-ever during the period of the machinery is in his charge.
- (k) All municipal or other dues and taxes payable on account of the use or operation of the tools and plants for the period of hire shall be defrayed by the hirer.
- (l) The hirer shall make good any loss or damages arising out of causes other than fair wear and tear to the tools and plants during the period of hire. The cost recoverable from the hirer shall be the full replacement value as determined by the Engineer-in-charge .In the event of any loss or damage not being made good by the hirer to the satisfaction of the said Engineer-in-charge the office shall be at liberty to make good himself such loss

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or damage and recover the cost thereof from the hirer. The hirer shall pay to the Engineer-in-charge such an amount as shall be necessary to make good the loss or damage failing which the same will be recovered from his dues as in case of hire charges.

- (m) On the breach of any terms or conditions of this agreement by the hirer the Engineer-in-charge shall be entitled to demand the return of tools and plants and the hirer shall return the tools and plants within 72 hours from the date of receipt of such order in writing .In case of failure on the part of the hirer to comply with such order he shall be liable to pay such penalty as may be imposed by the Engineer-in-charge for the period the tools and plant are detained provided that the maximum penalty shall not exceed the cost replacement of the tools and plants .
- (n) In case of any disputes between the hirer and the Government the decision of the Superintending Engineer shall be final.
- (o) This agreement shall be operated by the Engineer-in-charge on behalf of the Government and the term Engineer-in-charge shall include all officers duly authorised by him to exercise powers on his behalf.

#### SCHEDULE

Serial No.	Description and Name of The articles.	No.	Amount of hire per hour.	Remarks.

In witness where of the hirer and the Engineer-in-Charge has for and on behalf of the Governor of the State have set their respective hand, the day and the year here in above written.

Signed by:

1. 2.

Signed sealed and delivered in the presence of

1. 2.

85. Under Section 12 of the contract labour regulation and abolition Act 1970 the contractor who undertakes execution of work through labour should be produced valid license from licensing authority of labour Department.

86. The K.B. brick should be well burnt and good quality. The bricks should be approved by the Engineer-in-charge before use in the work and should confirm the minimum strength as per National Building Code.

87. Super class contractor shall employ under himself two Graduate Engineer and two Diploma holders belonging to the State of Orissa. Special class contractor shall employ under him one graduate Engineer and two Diploma Holder belonging to the state of Orissa . Like wise 'A' class contractor shall employ under him one Graduate Engineer or two Diploma Holders belonging to state of Orissa. The contractor shall pay to the Engineering personnel monthly emoluments, which shall not be less than the emoluments of the personnel of equivalent qualification employed under the State Govt. of Orissa. The Engineer-in Chief (Civil), Orissa may however assist the contractor with names of such unemployed Graduate engineers and Diploma Holders if such help is sought for by the contractor .The names of such Engineering personnel appointed by the Contractors should be intimated to the tender receiving authority along with the tender as to who would be supervising the work. Each bill of the Super Class, Special Class or 'A' class Contractor shall be accompanied by an employment Roll of the Engineering personnel together with a Certificate of the Graduate

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Engineer or Diploma Holder so employed by the contractor to the effect that the work executed as per the bill has been supervised by him (vide Works Department No. Codes M-22/91-15384 dated 9.7.91).

88. It is the responsibility of the contractor to procure and store explosive required for blasting operation. Department may render necessary possible help for procuring license.
89. If further necessary information is required the Executive Engineer, (R&B) Division, Angul will furnish such, it must be clear understood that the tender must be received in order and according to the instruction.
90. The contractor should arrange the materials like Steel, Cement etc. of approved quality and specification at his own cost for completion of the work with the time schedule. No extension of time will be granted on the application of the contractor due to delay in procurement of materials.
91. Though Departmental issue of cement and steel has indicated, it may not be taken as binding. The contractor must have to arrange by themselves cement, steel bitumen and every sorts of materials from approved manufacturer, get it tested in the Departmental Laboratory and approved by the Department before use. *No extension of time or escalation of price on such account shall be entertained in future.*
92. TOR rods, plates and structural members will be supplied in quantity, length and size available in the stock. For payment of reinforcement, the steel including plates etc. shall be measured in length of different diameter, size and specification as actually used (including hooks and cranks )in the work correct to an inch or cm. And their weight calculated as per sectional weight prescribed by the Indian Standard Specification or as directed by the Engineer-in-Charge (Wastage of bars and unnecessary lapping will not be considered for measurement and payment).
93. **Amendment of existing Clauses :-** By admission of a tender for the work , a tenderer will be deemed to have satisfied himself by actual inspection of the site and locality of the work, about the quality and availability of the required quantity of material including the wheat/ rice referred to above, medical aid, labour and food stuff etc., and that rates by him in the tender will be adequate to complete the work according to the specifications attached there to and that he had taken in to account all conditions and difficulties that may be encountered during its progress and to have quoted rates and materials with taxes , octroi ,other duties, lead, lifts, loading and unloading, freight for all materials and all other charges necessary for the completion of the work, to the entire satisfaction of the Engineer-in –Charge of the work and his authorized subordinates. After acceptance of the contract rate Government will not pay any extra charges for any reason in case the contractor claims later on to have misjudged as regard availability of materials, labour and other factors.
94. From the commencement of the works to the completion of the same, they are to be under the contractors charge. The contractor is to be held responsible to make good all injuries, damaged and repairs occasioned or rendered necessary to the same by fire or other clauses and they hold the Govt. of Orissa harmless for any claims for injuries to person or structural damages to properly happening from any neglect, default, want of proper care or misconduct on the part of the contractor or any one in his employment during the execution of the work. Also no claim shall be entertained for loss due to earthquake, flood, cyclone, epidemic, riot or any other calamity whether natural or incidental and damages so caused will have to be made good by the contractor at his own cost.
95. Where it will be found necessary by the Department, the Officer-in-Charge of the work shall issue an order book to the contractor to be kept at the site of the work with pages serially numbered. Orders regarding the work whenever necessary are to be entered in this book by the DRDA. Officer-in-Charge with their dated signatures and duly noted by the contractor or his authorized agents with their dated signature. Orders entered in this book and noted by the contractor's agent shall be considered to have been duly given to the

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contractor for following the instructions of the Department. The order Book shall be the property of the DRDA. and shall not be removed from the site of work without written permission of the Engineer (Addl.PDTech) and to be submitted to the Engineer-in-charge every month.

96. The contractor shall make requisition of claim book from the date of commencement of the work from the Department and shall maintain in proper block form with pages serially numbered in order to record items of works are not covered by his contract and claimable as extra. Claims shall be entered regularly in this book under the dated signature of the contractor or his duly authorised agents at the end of each month. A certificate should be furnished along with the claim to the effect that he has no other claim beyond this claim up-to-date. If in any month there are no claims to record, a certificate to that effect should be furnished by the contractor in the claim book. Each claim must be defined and should be given as far as possible regarding the quantities as well as the total amount claimed. The claim book must be submitted by the contractor regularly by 10<sup>th</sup> and 16<sup>th</sup> days of each month for orders of the Engineer-in-Charge or competent authority. Claims not made in this manner or the claim books not maintained from the commencement of the work are liable to be summarily rejected. The claim book is the property of the block and shall be surrendered by the contractor to the Engineer-in-charge after completion of the work or before recession of the contract by the Department which ever is earlier for record.
97. Number of tests as specified in I.R.C./ MORT&H / I.S.I specification required for the construction of roads /bridges /buildings or any other structural works will be conducted in any Govt. Test House / Departmental laboratories/reputed material testing laboratory as to be decided by the Engineer-in-charge. Testing charges including expenditure for collection / transportation of samples /specimens etc. will be borne by the contractor. The collection of samples and testing are to be conducted for both prior to execution and during execution as may be directed by the Engineer-in-charge and on both the accounts the cost shall be borne by the contractor.
98. Besides, the firm / contractor shall install full-fledged field laboratory at work site for conducting required tests as per IRC requirements at his own cost for providing sufficient opportunity for checking from time to time. Engineering personnel of the executing agency should be present at work site at the time of visit of high level inspecting officers in the rank of super tending Engineer and above. After completion of the road in all respects the road furniture should be affixed by the executing agency indicating locations like school, hospital, No-horn etc.
99. The tenderer should furnish information regarding current litigation, debarring / expelling of the applicant or abandonment of work by the applicant in **Annexure-V**.
100. The information furnished must be sufficient to show that the applicant is capable in all respects to successfully complete the envisaged work.
101. The contractors / Firms shall be responsible for the defect liability period for three years from the date of completion of the project.
102. In case the 1<sup>st</sup> lowest tenderer or even the next lowest tenderers withdraw in series one by one, thereby facilitating a particular tender for award, then they shall be penalized with adequate disincentives with forfeiture of EMD unless adequate justification for such back out is furnished. Appropriate action for black listing the tenderers shall also be taken apart from disincentivising the tenderer.
107. Special conditions.  
 (a) The tenderers while submitting their documents along with the rates of items of Tender will submit an affidavit that all the documents and papers submitted by him are genuine and authentic including the Bank Guarantee submitted by him.

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- (b) After completion of the road in all respects road furniture should be affixed by the executing agency indicating locations like School, Hospital, No-horn etc.
- (c) In case the contractor proposed to engage machineries/equipments as asked for this work own or hired but deployed outside the state he/she is required to furnish additional 1% E.M.D./Bid security. The entire Bid security including the additional Bid security shall be stand forfeited in case the contractor failed to mobilize the machineries with the stipulated time as per the Bid documents.
- (c) The tenderer intending to hire/lease equipments/ machineries are required to furnish proof of ownership from the company/person providing equipments/machineries on hire/lease along with the contracts/agreements/lease deed and duration of such contract.

108. ADDENDUM TO THE CONDITION OF P1 CONTRACT

**Clause-2(a) of P1 Contract:-TIME CONTROL:-**

**2.1. Progress of work and Re-scheduling programme.**

- 2.1.1. The Executive Engineer / Engineer- in- Charge shall issue the letter of acceptance to the successful contractor. The issue of the letter of acceptance shall be treated as closure of the Bid process and commencement of the contract.
- 2.1.2. Within 15 days of issue of the letter of acceptance, the contractor shall submit to the Engineer-in-Charge for approval a Programme commensurate to **Clause no. 2.1.3** showing the general methods, arrangements, and timing for all the activities in the Works along with monthly cash flow forecast.
- 2.1.3. To ensure good progress during the execution of the work the contractors shall be bound in all cases in which the time allowed for any work exceeds one month to complete,  $1/4^{\text{th}}$  of the whole time allowed under the contract has elapsed,  $1/2$  of the whole of the work before  $1/2$  of the whole time allowed under the contract has elapsed,  $3/4^{\text{th}}$  of the whole of the work before  $3/4^{\text{th}}$  of the whole time allowed under the contract has elapsed.
- 2.1.4. If at any time it should appear to the Engineer-in-Charge that the actual process of the work does not conform to the programme to which consent has been given the Contractor shall produce, at the request of the Engineer-in-Charge, a revised programme showing the modifications to such programme necessary to ensure completion of the works within the time for completion. If the contractor does not submit an updated Programme within this period, the Engineer-in-Charge may withhold the amount of 1% of the contract value from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Programme has been submitted.
- 2.1.5. An update of the Programme shall be a programme showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work including any changes to the sequence of the activities.
- 2.1.6. The Engineer-in-Charge's approval of the Programme shall not alter the Contractor's obligations. The Contractor may revise the Programme and submit it to the Engineer-in-Charge again at any time. A revised Programme is to show the effect of Variations and Compensation Events.

**2.2. Extension of the Completion Date.**

- 2.2.1. The time allowed for execution of the works as specified in the Contract data shall be the essence of the Contract. The execution of the works shall commence from the  $15^{\text{th}}$  day or such time period as mentioned in letter of Award after the date on which the Engineer-in-Charge issues written orders to commence the work or from the date of handing over of the site whichever is later. If the Contractor commits default in commencing the execution of the work as aforesaid, Government shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money & performance guarantee / Security deposit

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absolutely.

- 2.2.2. As soon as possible after the Agreement is executed the Contractor shall submit the Time & Progress Chart for each milestone and get it approved by the Department. The Chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the works. It shall indicate the forecast of the dates of commencement and completion of various trades of sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge and the Contractor within the limitations of time imposed in the contract documents, and further to ensure good progress during the execution of the work, the contractor shall in all cases in which the time allowed for any work, exceeds one month (save for special jobs for which a separate programme has been agreed upon) complete the work as per milestone given in contract data.
- 2.2.3. In case of delay occurred due to any of the reasons mentioned below, the Contractor shall immediately give notice thereof in writing to the Engineer-in-Charge but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the works.
- i) Force major, or
  - ii) Abnormally bad weather, or
  - iii) Serious loss or damage by fire, or
  - iv) Civil commotion, local commotion of workmen, strike or lockout affecting any of the trades employed on the work, or.
  - v) Delay on the part of other contractors or tradesmen engaged by Engineer-in-Charge in executing work not forming part of the Contract.
  - vi) In case a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work and which would cause the Contractor to incur additional cost, or
  - vii) Any other cause, which, in the absolute discretion of the authority mentioned, in Contract data is beyond the Contractors control.
- 2.2.4. Request for reschedule and extension of time, to be eligible for consideration, shall be made by the Contractor in writing within fourteen days of the happening of the event causing delay. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired.
- 2.2.5. In any such case a fair and reasonable extension of time for completion of work may be given. Such extension shall be communicated to the Contractor by the Engineer-in-Charge in writing, within 3 months of the date of receipt of such request. Non-application by the contractor for extension of time shall not be a bar for giving a fair and reasonable extension by the Engineer-in-Charge and this shall be binding on the contractor.

### **2.3. Compensation for Delay.**

- 2.3.1. If the contractor fails to maintain the required progress in terms of clause 2 or to complete the work and clear the site on or before the contract or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to the Government on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below as the Superintending Engineer (whose decision in writing shall be final and binding) may decide on the amount of tendered value of the work for every completed day / month (as applicable) that the progress remains below that specified in Clause 2 or that the work remains incomplete.

This will also apply to items or group of items for which a separate period of completion has been specified. Compensation @ 1.5% per month of for delay of work, delay to be completed on per Day basis.

Provided always that the total amount of compensation for delay to be paid under this condition shall not exceed 10% of the Tendered Value of work or to the Tendered Value of the item or group of items of work

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for which a separate period of completion is originally given.

The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other contract with the Government. In case, the contractor does not achieve a particular milestone mentioned in contract data, or the rescheduled milestone(s) in terms of Clause 2.5, the amount shown against that milestone shall be

Withheld, to be adjusted against the compensation levied at the final grant of extension of time. Withholding of this amount on failure to achieve a milestone, shall be automatic without any notice to the contractor. However, if the contractor catches up with the progress of work on the subsequent milestone(s), the withheld amount shall be released. In case the contractor fails to make up for the delay in subsequent milestone(s), amount mentioned against each milestone missed subsequently also shall be withheld. However no interest whatsoever shall be payable on such withheld amount.

#### **2.4. Management Meetings.**

2.4.1. Either the Engineer or the Contractor may require the other to attend a management meeting. The business of management meetings shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.

2.4.2. The Engineer shall record the business of management meetings and is to provide copies of his record to those attending the meeting and to the Employer. The responsibility of the parties for actions to be taken to be decided by the Engineer either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

#### **Clause-2 (b) of Percentage Rate P1 Agreement:- Rescission of Contract (Amendment as per letter No.10639 dt 27.05.2005 of Works Department, Orissa ):-**

To rescind the contract (of which rescission notice in writing to the contractor under the hand of the Executive Engineer shall be conclusive evidence), 20% of the value of left over work will be realised from the contractor as penalty.

#### **2.5. Amendment as per letter No.8310 dt.17.5.2006 of Works department, Orissa**

No incentive should be paid for this work.

#### **2.6. Clause-31(a)(ii) of percentage Rate P1 Agreement:- Codal/contractual provisions for payment of differential cost of Steel, Cement & bitumen. (Amendment as per letter No.5608 dt 3.4.07 of Works Department, Orissa):-**

Where original contract period is one year and above, increase/decrease of cost of Steel, Cement & Bitumen are to be paid/recovered. Payments in case of increase are to be made with prior approval of Government when the total claim is more than Rs.50, 000/- and with prior approval of the EIC/ Chief Engineer (as the case may be) when the claim is upto Rs.50, 000/-. Recovery in case of decrease shall be made by concerned Executive Engineer from the contractor immediately.

The cost shall be determined as follows:-

Steel	.....	Rate as fixed by Steel Authority of India Ltd. (SAIL)
Cement	.....	Average factory price of three manufacturer of cement inside the state.

Bitumen	.....	Rate as fixed by Indian Oil Corporation (IOC).
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#### **Clause – 31(a)(iii) of P1 Contract:-**

Where original period of contract is more than six months & below one year increase/decrease of cost of Steel, Cement & Bitumen are to be paid/ recovered. Payments in case of increase are to be made with prior approval of Government when the total claim is more than Rs.50,000/- and with prior approval of the EIC/Chief Engineer (as the case may be) when the claim is upto Rs.50,000/- subject to the fulfilment of the conditions mentioned below:-

(i) Cost shall be determined as follows:-

Steel	.....	Rate as fixed by Steel Authority of India Ltd. (SAIL)
-------	-------	---

Signature of Tenderer

Cement .....	Average factory price of three manufacturer of cement inside the state.
Bitumen .....	Rate as fixed by Indian Oil Corporation (IOC).

- (i) Cost of the project should be more than Rs.50.00Lakhs. However, the differential cost on such materials may be paid to the contractors after deducting the hike percentage amount in the tender for those materials from the calculated amount of differential cost.
- (ii) Contractors have to submit the vouchers showing procurement from an authorised dealer for the said work within 28days before utilisation of Steel, Cement & Bitumen.
- (iii) Differential cost will be allowed only for the original agreement period; but not for the extended period even though it might have been validly extended.
- (iv) Differential cost will be allowed only after successful completion of the work as per the approved work programme.
- (v) Stipulations contained in existing Clause 31(f).

Recovery in case of decrease shall be made by concerned Executive Engineer from the contractor immediately.

**Clause-31(e) of P1 Contract:-**

Vide Works Department letter No.21369 Dt.25.9.91, the reimbursement/refund on variation in price of materials (except steel, cement & bitumen which will be governed as per Clause-31a-ii & a-iii), labour and P.O.L. as per sub clauses (a-i), (b) and (c) respectively of this Clause-31 shall be applicable in the following manner:

"In terms of the aforesaid escalation clause, where the period for completion of the work as stipulated in the agreement is less than one year, no escalation is admissible. In case of work where the stipulated period of completion is one year and more, escalation on account of price variation would be admissible only for the remaining period after excluding the first one-year period thereof provided the work has been carried out by the contractor in terms of the relevant provision of the agreement. In the situation, where the period of completion is initially stipulated in the agreement is less than one year and subsequently the completion period has been validly extended on the ground that the delay in completion of the work is not attributable to the contractor and in the result the total period including the extended period stands at one year or more escalation is admissible only for the remaining period after excluding the first one year period therefrom.

109. **SPECIAL CONDITIONS:** - The contractors/Firms shall be responsible for the defect liability period for **12 months** from the date of completion of the project.

110. **ELIGIBILITY CRITERIA:** To be eligible for qualification, applicants shall furnish the followings.

**A) Required E.M.D as per the clause No. 13.**

**B) Copy of valid Registration Certificate, Valid VAT clearance certificate, Valid Service Tax registration certificate / Service Tax clearance certificate, certificates, PAN card along with the tender documents is mandatory and furnish the Original Registration certificate, VAT clearance certificate, Valid Service Tax registration certificate / Service Tax clearance certificate, certificates and Pan card, for verification within 2 (two) days of opening of the tender before B.D.O Pallahara as per Clause No.08.**

**C) Information regarding current litigation, debarring / expelling of the applicant or abandonment of work by the applicant in Annexure-V and affidavit to that effect including authentication of tender documents and Bank guarantee in Annexure-I.**

**D) Engineer contractor desirous to avail the facility of exemption of EMD is required to submit an affidavit to the effect that he/she has not yet availed the facility for more than two works during the current financial year.**

The **name of work** for which and the authority to whom the tender have been submitted, must be mentioned in the affidavit failing, which the tender will be **rejected**.

**N.B.:-**

- Bidder can submit one tender paper for a particular work. Submission of more than one tender paper by a bidder for a particular tender will be liable for rejection of all such tender papers.
- If the contractor has omitted to quote the rate both in figures and words the Tender will be summarily rejected.

Signature of Tenderer

**ANNEXURE – I****AFFIDAVIT**

I Sri \_\_\_\_\_ aged about \_\_\_\_\_ yrs.,

S/o \_\_\_\_\_, Vill- \_\_\_\_\_, PO- \_\_\_\_\_,

Dist- \_\_\_\_\_ do hereby solemnly affirm & state as follows:

1. The undersigned do hereby certify that all the statements made in the required attachments are true and correct for the work " \_\_\_\_\_ ".
2. The undersigned also hereby certifies that neither our firm M/s \_\_\_\_\_ nor any of its constituent partners have abandoned any road/ bridge/Irrigation /Buildings or other project work in India nor any contract awarded to us for such works have been rescinded during the last five years prior to the date of this bid.
3. The undersigned hereby authorized and request (s) any bank, person, firm or Corporation to furnish pertinent information as deemed necessary and as requested by the Department to verify this statement or regarding my (our) competency and general reputation.
4. The undersigned understands and agrees that further qualifying information may be requested and agree to furnish any such information at the request of the Department.

Signature of Tenderer

Signature of Tenderer

**Annexure-II****CERTIFICATE OF NO RELATIONSHIP**

I/We hereby certify that I/We\* am/are\* **related/not related\*** to any officer of P.W.D of the rank of Assistant Engineer & above and any officer of the rank of Assistant / Under Secretary and above of the Works Department, Govt. of Orissa I/We\* am/are\* aware that, if the facts subsequently proved to be false, my/our\* contract will be rescinded with forfeiture of E.M.D and security deposit and I/We\* shall be liable to make good the loss or damage resulting from such cancellation.

I/We also note that, non-submission of this certificate will render my / our tender liable for rejection.

(\*) - Strike out which is not applicable

Signature of the Tenderer  
Date:-

Signature of Tenderer

**Annexure-III****LIST OF PLANT AND EQUIPMENTS TO BE DEPLOYED ON THE CONTACT WORK**

<b>List of plants and equipments</b>	<b>Requirement</b>
Concrete Mixture	1 Nos
Vibrator	2 Nos
Water Tanker	1 No
Generator	1 No
Tractor	1nos

Signature of the Tenderer  
Date:-

Signature of Tenderer

**ANNEXURE-IV****WORKING EXPERIENCE**

Work performed as prime Contractor (in the same name and style) on construction works of a similar nature and volume over the last five years from the date of receipt of this bid. Attach certificate from the Engineer-in-Charge not the below rank of Executive Engineer or equivalent.

Project Name	Name of Employer	Description of work	Value of Contract	Contract No	Date of issue of work order	Stipulated date of completion.	Actual date of completion.	Year wise value of work done as per		Remarks explaining reasons for Delay, if any
								Year	Amount (Rs. in lakh)	
1	2	3	4	5	6	7	8	9	10	11

**Signature of the Tenderer**

**ANNEXURE- V****INFORMATION REGARDING CURRENT LITIGATION, DEBARRING EXPELLING OF TENDERED OR ABANDONMENT OF WORK BY THE TENDERER**

1. a) Is the tenderer currently involved in any litigation relating to the works. Yes / No  
b) If yes: give details:
  
2. a) Has the tenderer or any of its constituent partners been debarred/ expelled by any agency in India during the last 5 years. Yes / No
  
3. a) Has the tenderer or any of its constituent partners failed to perform on any contract work in India during the last 5 years. Yes / No  
b) If yes, give details:

**Note:**

If any information in this schedule is found to be incorrect or concealed, qualification application will be summarily be rejected.

**Signature of the Tenderer**

Signature of Tenderer

**COVER-II**  
**FINANCIAL BID DOCUMENTS**

Signature of Tenderer



**Tender Schedule**

Name of Work : "Construction of Chek Dam near Jamardiha village in Pallahara Block"

Sl.no	Description of Item	Unit	Quantity	Rate in	Amount
1	2	3	4	5	6
1	Earth work is hard soil or gravely soil within 50m initial lead and 1.5 m. initial lift including rough dressing and breaking clods to maximum 5cm to 7cm and laying in layers not exceeding 0.3m in depth and as per the direction of the Department.				
	Hard Soil 50 % of Total	Cum	131.05	184.60	24190.91
	Stoney Earth 30 % of Total	Cum	78.63	287.90	22636.71
	D.I.Rock 20 % of Total	Cum	52.42	425.30	22293.38
2	Cement concrete M - 15 grade with crushed broken granite course aggregate of size 20 mm down graded mixed in concrete mixer including cost of all materials , machineries and labour within initial lead etc complete.	Cum	198.43	4829.70	958357.37
3	Reinforced Cement concrete M - 20 grade with crushed broken granite course aggregate of size 20 mm down graded mixed,including cost of all materials , machineries , labour and transportation of mixed concrete within initial lead etc complete.	Cum	46.28	5248.20	242886.70
4	Filling Foundation and plinth with excavated materials including watering and compacting etc complete as directed by the Engineer-in-charge. (Hard Soil)	100Cum	87.36	10255.30	8959.37
5	Supply ,fitting & fixing of M.S. Reinforcement for R.C.C. works including cutting , bending, binding & placing in position including cost ,convayance, labour, T&P etc complete as directed by E.I.C.	Qni	16.90	7492.50	126623.25
6	Rigid smooth centering and shuttering for R.C.C works and dismantling then after casting including cost of materials complete in ground floor.	Sqm	436.75	205.80	89883.15
7	Rough stone dry packing in aprons and revetments to all heights with hard stone other than granite and laterite of 1cuft. 15cm to 30cm size of approved quality quarried and free from weathered skin including filling interstices with small stones with cost, conveyance, royalty and other taxes of all materials required for the work and finished to proper slope and level complete in all respect as directed by the Engineer-in-Charge.	Cum	11.00	1955.10	21506.10

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8	Earthwork in hard soil or gravelly soil within initial lead of 50m and 1.5m initial lift including rough dressing and breaking clods to maximum 5cm to 7cm and laying in layers not exceeding 0.3m in depth and as per direction of the Engineer-in-charge.	100C um	134.25	15382.90	20651.54
9	Providing weep holes 8mmX23mm size etc complete as directed by EIC.	Nos	40.00	20.00	800.00
10	Fixing 25mm dia anchor bars in foundation rock including drillind	Rmt	30.00	339.70	10191.00
Total					1548979.48
ADD 12 % G S T					185877.54
G. Total					1734857.02
OR SAY Rs					1734857.00

### TENDER SCHEDULE

Special Condition : All materials, labour, machineries and equipments required to complete the work in all respect shall be arranged by the tenderer at his own cost. The employer will bear no responsibility in this aspect.

My/Our quoted rate is \_\_\_\_\_ % Excess over /  
 \_\_\_\_\_ % Less than /  
 \_\_\_\_\_ equal to corresponding estimate rate.

Signature of the Tenderer.

Notes : 1. The contractor should not write anything expect quoting of percentage, excess / less/ equal to the estimated cost.

Approved for 10 (Ten) items only

No. of Corrections .....  
 No. of Overwriting .....  
 No. of interpolations.....  
 No. of omission .....

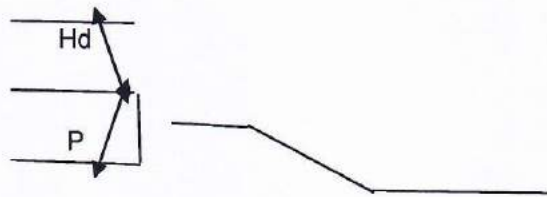
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**DESIGN OF RENTHANA CHECK DAM OF RANTAN NALLA OF PALLAHARA BLOCK**

**DETAIL DESIGNS :**

Catchment Area	=	3.75	Sq.km
D/S Floor Level	=	305.00	m
U/S Floor Level	=	305.00	m
Consider height of check dam	=	1.60	m
Crest Level	=	306.60	m
U/S H.F.L	=	307.75	m
Considering free board	=	0.60	m
T.B.L	=	308.35	m

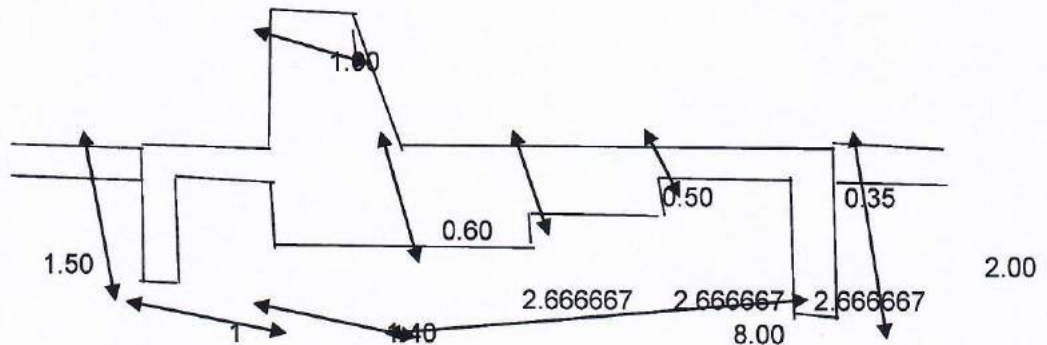
Height of crest from u/s floor level	P =	Crest Level - U/S Floor	=	1.60	m
Flood Lift	Hd =	$(Q/1.7xL)^{0.67}$	=	1.15	m
Calculation of flood discharge	C		=	19.50	
Considering Flood Discharge	Q =	$C \times (C.A)^{0.75}$	=	53.00	cumecs



Lacey's stable water way	=	$4.75 \times Q^{0.5}$	=	34.58	m
Adopt, water way (As per data sheet)	35 %	of Lacey's water way	=	12.00	m
Hence, Provide length	L		=	12.00	m
Provide vents of Size 1.5 x 1.00	Vent Required	=	2	Nos	
	% =		=	25%	(Range 20-30%)
Discharge per unit length	q =	Q/L	=	4.42	cumec/mt.

**Body Wall (Broad Crested)**

	Hd =	1.15	mtr.	=	3.76	Ft.	
	P =	1.60	mtr.	=	5.25	Ft.	
Crest Width	$= Hd^{0.5} + P^{0.5} =$	1.00	mtr.	=	4.000	Ft.	
<b>Provide, width of crest</b>		=	1.00	<b>mtr.</b>			
Submerged density of Concrete		=		$\rho$	=	1.24	t/m <sup>3</sup>
Bottom width	$= (Hd + P)/\rho^{0.5}$	=	2.47	mtr.	=	8.10	Ft.
<b>Provide, Bottom width</b>		=	1.40	<b>mtr.</b>			



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**DESIGN OF ENERGY DISSIPATOR :**

Discharge intensity	q	=	4.42	cumec/mt.
D/S floor level		=	305.00	m.
U/S H.F.L		=	307.75	m.
Approach velocity	$V_a = q/(P+Hd)$	=	1.61	m/sec.
Approach head	$H_a = V_a^2/2g$	=	0.132	m
U/S total energy level	= U/S H.F.L + $H_a$	=	307.88	m
	$E_{f1} =$ U/S TEL -D/S Floor	=	2.88	m
	$E_{f1} = E_{f2} + H_L =$ $E_{f2} = (d_2 + q^2/2gd_2^2) =$	=	6.33	m
	$H_L = (d_2 - d_1)^3/4d_1d_2$	=	4.612	m
Where,	$d_2 = (2q^2/gd_1 + 0.25d_1^2)^{0.5} - d_1/2$	=	0.41	m

Hence, compute  $d_1$  so that  $E_{f1}$  computed =  $E_{f1}$  Required

	$d_1$	$E_{f1}$ req.	$E_{f1}$ comp.
	2.919	2.878	1.836
Prejump depth	$d_1$		= 2.919 m
Froude No	$Fr^2 = q^2/gd_1^3 =$	0.08	$Fr =$ 0.283
Post jump depth	$d_2 = d_1/2 * ((1 + 8Fr^2)^{0.5} - 1)$		= 0.41 m
D/S H.F.L	= D/S Bed level + $d_2$		= 304.38 m
Length of stilling basin	$L_b = 5(d_2 - d_1)$		= 8.391 m

**FIXATION OF CISTERN LENGTH :**

As Froude No	=	0.283	<	4.5	<b>say</b>	0.41
Provide, I.S. Type-I			Stilling Basin			
Length of stilling basin	=			8.391	m	
From Graph, For Froude No=		0.283				
$L_b/d_2 =$	=	0.441	m			4.286
$L_b =$	=	0.181				
Hence, provide length of stilling basin =				8.00	m	8.391

**Design of Cut-off**

Silt factor	f	=	1.500
Discharge intensity	q	=	4.4 cumec/mt.
Hydraulic radius	$R = 1.35(q^2/f)^{1/3}$	=	3.18 m

**Down Stream**

Max. Scour depth in down stream	=	1.5R	=	4.77	m
R.L of max. scour	=	H.F.L - Depth of max. scour	=	299.61	m
Depth of down stream cut-off	=	D/S bed level - R.L of max. scour	=	2.00	m
Hence, provide d/s cut-off			=	2.00	m
R.L of cut-off	=	D/S bed level - depth of d/s cut-off	=	303	m

**Up Stream**

Max. Scour depth in up stream	=	1.25R	=	3.98	m
R.L of max. scour	=	H.F.L - Depth of max. scour	=	303.77	m
Depth of up stream cut-off	=	U/S bed level - R.L of max. scour	=	1.50	m
Hence, provide u/s cut-off			=	1.50	m
R.L of cut-off	=	U/S bed level - depth of u/s cut-off	=	303.5	m

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**Check for Exit Gradient**

$\alpha =$	$b/d$	$b =$ creep length	$=$	17.4	m
		$d =$ depth of down stream cut-off	$=$	3	m
G.E =	$(H/d) * (1/\pi\lambda^{0.5})$				
H =	Max. Static seepage head = F.R.L - D/S Bed Level		$=$	1.60	m
$\alpha =$			$=$	5.8	
$\lambda =$	$(1+(1+\alpha^2)^{0.5})/2$		$=$	3.44	
G.E =	$(H/d) * (1/\pi\lambda^{0.5})$		$=$	0.09	< 0.20

**SAFE**

**Uplift pressure calculation & floor thickness**

**For Up Stream**

Hence, depth of u/s cut-off =	$d$	$=$	1.50	m
$\alpha =$	$b/d$	$=$	11.6	
$\lambda =$	$(1+(1+\alpha^2)^{0.5})/2$	$=$	6.32	
$\phi E =$	$(\cos^{-1}((\lambda-2)/\lambda))/\pi$	$=$	14.92	
$\phi D =$	$(\cos^{-1}((\lambda-1)/\lambda))/\pi$	$=$	10.4	
	$\phi D1 = 100 - \phi D$	$=$	89.60	
	$\phi E1 = 100 - \phi E$	$=$	85.08	

Assuming thickness of concrete	$t$	$=$	0.60	m
Correction to	$\phi E = t/d (\phi D1 - \phi E1)$	$=$	1.81	
Corrected	$\phi E =$	$=$	86.89	

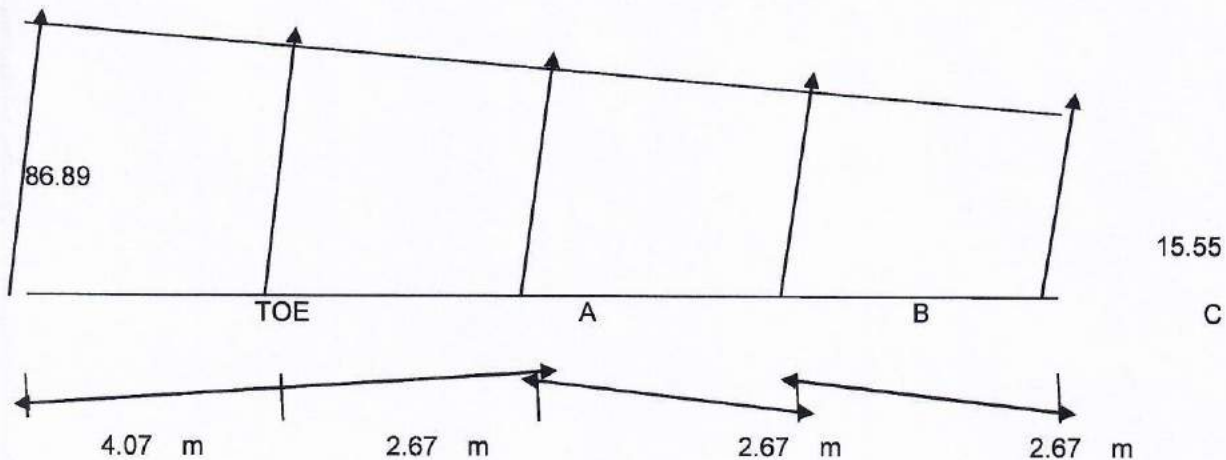
**For Down Stream**

Hence, depth of d/s cut-off =	$d$	$=$	2.00	m
$\alpha =$	$b/d$	$=$	8.7	
$\lambda =$	$(1+(1+\alpha^2)^{0.5})/2$	$=$	4.88	
$\phi E =$	$(\cos^{-1}((\lambda-2)/\lambda))/\pi$	$=$	17.13	
$\phi D =$	$(\cos^{-1}((\lambda-1)/\lambda))/\pi$	$=$	11.88	

Assuming thickness of concrete	$t$	$=$	0.60	m
Correction to	$\phi E = t/d (\phi E - \phi D)$	$=$	1.58	
Corrected	$\phi E =$	$=$	15.55	

**Pressure distribution**

(Considering 100% Pressure)



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Pressure at toe =	48.35
Pressure at A =	37.42
Pressure at B =	26.48
Pressure at C =	15.55

**Concrete thickness**

Submerged density of concrete = 1.24 t/m<sup>3</sup>  
 Thickness at any point of D/S floor = (Static Head / Submerged density of concrete ) x % Pressure at that point

Thickness at toe =	0.624 m	say,	0.60 m
Thickness at A =	0.483 m	say,	0.50 m
Thickness at B =	0.342 m	say,	0.35 m

including w/c of 0.10 mt.

**PROTECTION WORK (PERVIOUS APPRON)****U/S PROTECTION WORK**

Scour depth below u/s floor	D	=	1.50 m
Quantity	2.25D	=	3.38 cum/m.
Assuming thickness		=	0.5 m
Length of apron	= Quantity/thickness	=	6.75 m
Provide length		=	3.00 m

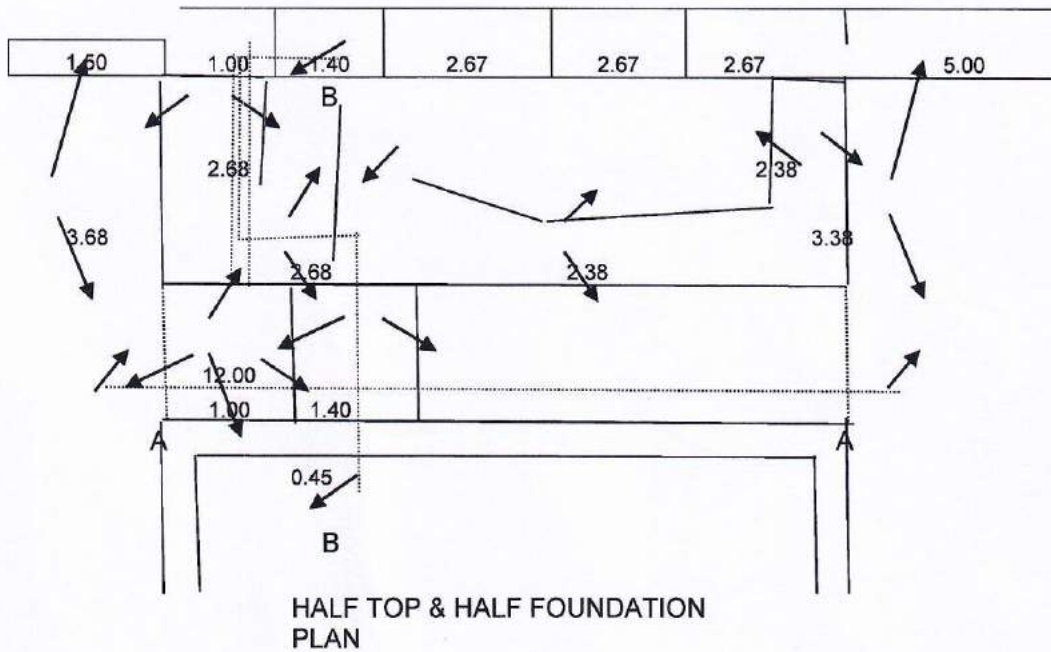
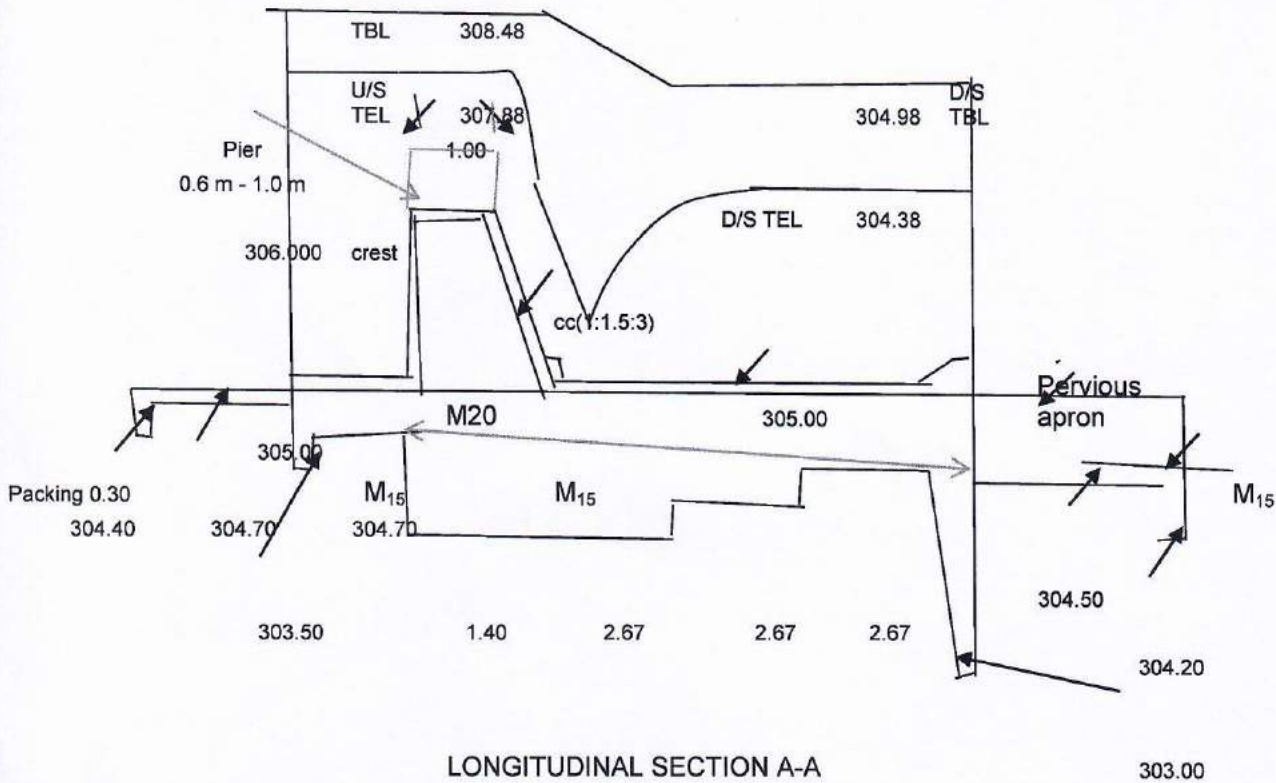
**D/S PROTECTION WORK**

Scour depth below d/s floor	D	=	2.00 m
Quantity	2.25D	=	4.50 cum/m.
Assuming thickness		=	0.5 m
Length of apron	= Quantity/thickness	=	9.00 m
Provide length		=	5.00 m

Size of Pier =	No of piers on bodywall	4	Nos say	4 nos
	1.00 x 0.60			
	Thickness of pier(width)	= 0.60 m		
	Ht of pier	1.00		

Signature of Tenderer

# DRAWING OF RENTHANA CHECK DAM



Bid Document consisting of 39 (Thirty Nine) pages only

Approved  
 23/11/21

BLOCK DEVELOPMENT OFFICER, PALLAHARA  
 Block Development Office,  
 Pallahara

Signature of Tenderer