

GOVERNMENT OF ODISHA

DEPARTMENT OF WATER RESOURCES



e- Procurement Notice No – (NID) 01/2026-27

Bid Identification No – NID(04)/2026-27

BID DOCUMENT

FOR THE WORK

Slope protection of Kharkhara nallah D/S bridge
from RD 632m to 800m of village Chanabeda for
the year 2026-27

Sd/-

Superintending Engineer
Nuapada Irrigation Division
Nuapada

GOVERNMENT OF ODISHA

BID DOCUMENTS

NAME OF WORK: Slope protection of Kharkhara nallah D/S bridge from RD 632m to 800m of village Chanabeda for the year 2026-27

The bid document contains 74 sheets including cover page.

Sd/-
Superintending Engineer
Nuapada Irrigation Division
Nuapada

C O N T E N T S

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SECTION – 1
DETAILED TENDER CALL NOTICE

GOVERNMENT OF ODISHA
DEPARTMENT OF WATER RESOURCES.

Office of the Superintending Engineer,
Nuapada Irrigation Division, Nuapada

'e-mail I.D. : ee.npd.irr@gmail.com'

Notice Inviting Tender

Bid Identification No. (NID)04/2026-27 online

The Superintending Engineer, Nuapada Irrigation Division, Nuapada on behalf of Hon'ble Governor of Odisha invites On-line **percentage rate** tenders through e-procurement for execution of following work. The bid should be submitted by eligible class of contractors through On-line in the Govt. website www.tendersodisha.gov.in. The bidders should have necessary portal enrolment (with own digital signature certificate). The registered bidders outside of ODISHA state can also participate in this on-line tender process after necessary portal enrolment but shall have to subsequently undergo registration with appropriate authority of the State Government within a month of acceptance of bid.

1.	Name of work	:	Slope protection of Kharkhara nallah D/S bridge from RD 632m to 800m of village Chanabeda for the year 2026-27
2.	Class of contractor	:	'C' & 'B' (Orissa P.W.D. or equivalent class of other licensing authority)
3.	Approximate value of work.	:	Rs. 33.66 lakhs (Excluding GST)
4.	Time for completion	:	04(Four) Calendar Months
5.	EMD / Bid Security required	:	The bidder shall transfer online the Earnest money deposit/ Bid Security of Rs. 33,700/- (.i.e 1%) for the as part of its bid through a process. Bidders desirous to hire machineries or equipment's from outside the State or owned but deployed outside the State are required to transfer online 2% of the amount put to tender as bid security.
6.	Cost of Bid Document	:	Rs. 6,000/- per set (Non- refundable) online
7.	Mode of submission of Bid	:	Bid should be submitted online in www.tendersodisha.gov.in

8. Period of availability of bid on line /Date of time of bidding on line / Last date of seeking clarification / Date of opening of tender papers. : Detailed as follows

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Procurement officer	Bid Identification No.	Availability of bid On -line		Any other clarification with respect to tender on or before	Date, Place & Time of opening of Bid
		From	To		
1	2	3	4		6
Superintending Engineer, Nuapada Irrigation Division, Nuapada	(NID) 04 / 2026-27	Date 04.08.2026, 10.00 A.M	Date 14.08.2026, 5.30P.M.	By Date 14.08.2026 during office hours	17.08.2026 at 11.00 A.M. in the O/O the Superintending Engineer, Nuapada Irrigation Division, Nuapada

9. Bid document consisting of qualification, information and eligibility criteria of bidders, plans, specification and Bill of quantities of the works are available in web-site www.tendersodisha.gov.in and the set of terms and conditions of contract and other necessary documents can be seen in the web-site till last date of submission of Bid. Interested bidders may get further information if any at the web site www.tendersodisha.gov.in

10. The Bids for the work shall remain open for acceptance for a period of 90 days from the last date of opening of Bid. If any bidder withdraws his Bid before the said period or makes any modification in the terms and condition of the bid.

11. No Engineer of Gazetted rank or other Gazetted officer employed in Engineering or Administrative duties in an Engineering Department of the State Government is allowed to work as a contractor for a period of two years after his retirement from Government service, without Government permission.

12. Other details can be seen in the bid documents, which is available in website www.tendersodisha.gov.in.

13. Authority reserves the right to reject any or all the tenders without assigning any reasons thereof.

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SUPERINTENDING ENGINEER

OFFICE OF THE SUPERINTENDING ENGINEER
NUAPADA IRRIGATION DIVISION, NUAPADA

DETAILED TENDER CALL NOTICE

1. The Superintending Engineer, Nuapada Irrigation Division, Nuapada, Dist.-Nuapada, Odisha, invites **on-line** tender through website prescribed forms to be eventually drawn up to state P.W.D. form No.P-1 contract from the Registered contractors of C' & B' and equivalent registered under Water Resources, Works and other Departments of Govt. of Orissa, C.P.W.D., Railway or military Engineering Services, Air and Naval or other State Govt., Govt of India, Central Govt. undertakings are also eligible to tender for the work. This invitation for Bids is open to eligible bidders and to bidders who are registered in the portal.

2. The tender documents may be downloaded from the Govt. website www.tendersodisha.gov.in.

From 04.08.2026 10.00A.M to 14.08.2026 up to 5.30 P.M for the work “Slope protection of Kharkhara nallah D/S bridge from RD 632m to 800m of village Chanabeda for the year 2026-27” on payment of **Rs. 6,000.00 (Rupees Six thousand)** only for each set. The amount is not refundable. The bid documents will be received through Govt. web site only **04.08.2026 10.00A.M to 14.08.2026 up to 5.30 P.M**. The Bid will be opened on Dated **17.08.2026 at 11.00 AM** in the Office of the Superintending Engineer, Nuapada Irrigation Division, Nuapada in presence of the bidders or their authorized agents. The bidder shall bear all costs associated with the preparation & submission of bids. In case of submission of Bids through e-Procurement portal, the cost of bid is **Rs. 6,000.00**. Documents to be furnished to the bidder in compliance to the requirement as per DTCN & IIT will be prepared by him & furnished. In case of submission of bids through the e-Procurement portal, all the volumes shall be provided in the portal. The bidders shall prepare the documents & up load the scanned document to the portal in appropriate place. In case of submission of bids through e-procurement portal, the bidders who participated in the online bidding can witness opening of the bid from any system logging on to the portal away from opening place. The bids can only be opened by the pre-designated officials at the opening time & venue mentioned in the bid.

3. The value of the work tendered for is **Rs. 20.01 lakhs**

4. No bidder will be permitted to furnish the bid documents in their own manuscript.

5. The bidder shall transfer online the Earnest money deposit/ Bid Security of the amount specified for the work in the table Column 7 above as part of its bid through a process as mentioned under Tender Call Notice No- (NID) 01/2026-27. Bidders desirous to hire machineries or equipment's from outside the State or owned but deployed outside the State are required to transfer online 2% of the amount put to tender as bid security. (As Per Memorandum No- 1499/W dated 01.02.2023 of Works Department, Govt. of Odisha)

The successful bidders will have to deposit remaining bid security @2% .i.e. ISD (Initial Security Deposit) of the agreement value in the form of N.S.C/ Post Office Savings Bank Account/ Post Office Time Deposit Account/ Kisan Vikas Patra/ Bank Guarantee of any Nationalized bank duly pledged in favour of the Superintending Engineer, Nuapada Irrigation Division, Nuapada and payable at Nuapada as per the terms & conditions laid down in OGFR and in no other form during execution of the agreement.

N.B. a) No Cheque / Bank draft / Cash Payment will be accepted.

b) Adjustment of earnest money given with other tenders previously and submitted with other tenders shall not to be entertained.

6. In case of submission of Bids through the e-Procurement Portal, the system shall reject submission of any bid through portal after closure of the receipt time. For all purpose the portal time displayed in the system shall be the time to be followed by the bidder.

7. For a particular work a bidder can submit only one set of tender paper. Submission of more than one set tender paper by a bidder for a particular tender will be liable for rejection all such tender papers. In case of submission of bids through e-Procurement portal the system shall consider only the last bids submitted through portal.

8. The tender is to be submitted along with **EMD**, signed DTCN, attested copy of registration certificate, PAN card, valid GST registration certificate in Form No.25, certificates duly filled-in and documents required as per the relevant clauses of this DTCN and special conditions if any. The cover is to be sealed and super scribed name the name of work for [“Slope protection of Kharkhara nallah D/S bridge from RD 632m to 800m of village Chanabeda for the year 2026-27.](#) In case of submission of Bids through the e-Procurement Portal, the bidder shall only submit single copy of the document. He is required to check the documents uploaded with the requirement asked for in the bid. Only after satisfying, that all the documents have been uploaded, he should activate submit button. His bids shall not be considered responsive and be taken any action as per relevant clause, if he does not provide the required eligible documents. Clarity of the document may be ensured by taking out a sample printing.

The bidders are only required to write the name of the work and authority who had issued the tenders.

9. In case of submission of Bids through the e-procurement portal, the bidder can seek clarification on the bids as per the date mentioned within the deadline for submission of bids. The Employers response will be forwarded through the e-mail ID of the enquirer.

10. The bid must be accompanied with the Earnest money deposit/ Bid Security of the amount specified for the work in the table Column 7 above as part of its bid through a process as mentioned

under Tender Call Notice No- (NID) 01/2026-27 along with the bid document. Bidders desirous to hire machineries or equipments from outside the State are required to furnish 2% (Two percent) of the amount put to tender, only in form of above shape and as per the above terms and conditions. Bid documents not accompanied with proof of submission of EMD and bid security for hired machineries as specified above shall be liable for rejection.

11. (i) The bidders are required to furnish evidence of ownership of principal machineries / equipments in section-2 Annexure-C & D .

(ii) The contractor shall furnish ownership documents for those machineries which he is planning to deploy for the tendered work including the sources with authenticated evidence in conformity with the ownership from whom the additional machineries shall be obtained as per Annexure 'C' & 'D'. It will be sole responsibility of the contractor to provide / use the required machineries. No interruption shall be entertained by the Department for whatsoever may be the cause and no hindrance for the reasons of short availability of Machineries shall be tenable.

(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 2% of amount put to tender as additional bid security. The entire bid security including the additional bid security shall stand forfeited in case the contractor fails to mobilize the machineries within a week from the date of commencement of the work.

(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 deed should cover the entire period of work. In the event of non submission of above specified documents in proper shape, the bid document will be summarily rejected.

12. 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 three years having the contracted work as incomplete prior to the date of the bid, shall be disqualified. The information to this effect and the authentication of tender documents including Bank guarantee should be furnished in Annexure-'E' & 'F' in absence of which will be summarily rejected.

13. All charges towards quality control test will be borne by the contractor.

14. The work is to be completed in all respect with **04(Four)** Calendar months from the date of issue of work order.

15. All tenders received will remain valid for a period of 90days from the date of opening of bids.

16. Bidders whose Tender is accepted must submit a programme of work immediately at the time of agreement for approval of Engineer-in-charge.

17. The date of commencement of the work shall be as notified in work order/ Agreement.

18. The Plans, specifications and scope for the work can be seen from the Govt. website during the sale and receipt period of tender.

19. The Bidders shall carefully study the tentative drawing and specification applicable to the contract and documents which will form as a part of the agreement to be entered into by the accepted bidders. The detailed standard specifications for Odisha and other said relevant specification and drawings are available with the authority inviting tender. Complain at a future date that plans and specifications have not been seen by the bidders will not be entertained.

20. Every bidder is expected before quoting his rates to inspect the site of the proposed work. He should also inspect the quarries and locality of the work and - satisfy himself about the quality and availability of materials including the medical aids, labour and food stuff etc. In every case the materials must comply with the relevant specifications.

The bidder will be deemed to have Satisfied himself that the Rates quoted by him in the tender will be adequate to complete the work according to the specifications and conditions attached and that he has taken in to account all conditions, difficulties that may be encountered during its progress and to have quoted labour rates and materials, octroi and other duties, including GST, labour cess, royalty lead, lifts, de-lifts loading and unloading and freight for 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. Complaints at future date regarding the non-availability of materials, labour or any other factor cannot be entertained .It should be understood clearly that no claim whatsoever will be entertained after-wards on the plea of non availability of proper quantity and quality of materials including food stuff or for any other.

21. Sample of materials such as cement, steel, sand, stone metal and chips etc to be used , are to be collected and deposited quoting the name of quarry under dated initial of the bidder and A.E in charge for testing and acceptance in the office of the S.E., Quality Assurance Division, Bhawanipatna, before procurement. The conveyance along with all testing charges will be borne by the contractor.

22. All rates should be for finished items of work unless otherwise mentioned in the tender schedule.

23. If the rate quoted by the bidder is less than 15% of the tendered amount then such a bid shall be rejected and the tender shall be finalized basing on merits of rest bids. But if more, than one bids is quoted at 14.99% (Decimals up to two numbers will be taken, for all practical purposes) less than the estimated cost, the tender accepting authority will finalize the tender through a transparent lottery system, where all bidders / their authorized representative, the Superintending Engineer, concerned Asst. Executive Engineers/ AEs and DAO/DA will remain present. (As per Office Memorandum No- 1437/ dated 31.01.2023 of Works Deptt., Govt. of Odisha)

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The lottery (if required) will be held in the office of the Superintending Engineer, Nuapada Irrigation Division after verification of the all documents. All the contractors participated in this bid must submit the relevant documents in hard copy as per ECR of office Memorandum No.17254 dt.5.12.2017 of Works Department , Under such circumstances, the defaulter bidder will be debarred in future from participating in tender in this office and will be blacklisted by the competent authority.

24. In case of submission of Bids through the e-Procurement Portal, the bidder can submit the scanned copy of the documents, in the designated locations of Technical Bid and Financial Bid. Submission of document shall be effected by using DSC of appropriate class and thus shall be in encrypted form.

25. The bid may not, at the discretion of the competent authority, be considered unless accompanied by scanned attested true copies of income tax clearance certificate PAN card, GSR registration certificate in Form-25. The original certificates are also to be produced at the time of opening of the tender. Copies of PAN CARD & GST registration certificate given with other tender previously or with other tender on the same day will not be taken in to consideration.

26. The tender containing extraneous condition not covered by the tender call 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.

27. In case of submission of Bids through the e-Procurement Portal, it is allowed to modify the bid. The bidder shall have to log on to the system and resubmit the documents as asked for by the system including the price bid. In doing so, the bids already submitted by the bidder will be removed automatically from the system and the latest bid only will be admitted. But the bidder should avoid modification of bid at the last moment to avoid system failure or malfunction of

internet or traffic jam. If the bidder fails to submit his modified bids within the designated time of receipt, the bids already in the system shall be taken for evaluation.

In case of submission of Bids through the e-Procurement Portal, withdrawal of bid is allowed. The bidder has to click on the “withdraw” button and record the necessary justification for the same in the space provided. In addition to this, he has to write a letter addressed to the Officer inviting the bid and up load the scanned document to portal in respective bid. The system shall not allow any withdrawal after expiry of the closure time of the bid.

28. Items of work not covered by the tender notice shall be paid at the current schedule of rates of the state and those not covered by the said schedule rates will be paid, on actual analysis approved by the competent authorities.

29. On no account the contract work should be sublet to any body without the prior approval of the competent authority of the Department. In such an event the contract may be rescinded with penalty as will be deemed proper as per decision of the competent authority.

30. Letters etc, raising and lowering the rates or dealing with any point in connection with the tender will not be considered.

31. Schedule of quantity accompanies tender notice: - It shall be definitely understood that the Government does not accept any responsibility for the correctness and completeness of this schedule and this schedule is liable for alternations or omissions, deductions or additions as set forth in the condition of contract and such omission, deductions additions or alternations shall in no way invalidate the contract and no extra monetary compensation will be entertained.

32. The authority reserves the right to make such increase or decrease in the quantity of items of works mentioned in the schedule attached to the tender notice as may be considered necessary for the satisfactory completion of the contract work. All such increase or decrease shall in no way invalidate the contract rates. The contractor shall not be entitled for any compensation on this account, except extension of time where considered necessary.

33. Tenders not accompanied by the Proof of EMD submission will be summarily rejected; no EMD submission will be accepted after closing hour of the tender. The bidder shall furnish, as a part of this Bid, EMD as shown in bid notice of the table of Notice Inviting Tender for a particular work. In case of submission of Bids through the E-Procurement Portal, the bidder shall scan all the written pages of the bid security and up load to the system in designated place. The on line bidder shall have to submit the proof of bid security original with the “officer inviting the Bid” prior to

opening of technical bid. The officer inviting the bid shall not be responsible for any postal delay and/ or non- receipt due to any frivolous reasons. Non- submission of bid security within the specified period shall debar the bidder from participating in the on-line bidding system and his portal registration shall be cancelled. His name shall also be informed to the registering authority for cancellation of his registration. The bid security shall be in shape of Term Deposit Receipt of any nationalized bank duly pledged in favour of Superintending Engineer, Nuapada Irrigation Division, Nuapada.

34. All taxes, fees, royalties, additional charge, EMF & DMF' payable under the local rule including GST, Income taxes Octroi tax. Entry tax etc. will be borne by the contractor.

35. Cess @ 1% will be deducted from the work bill of the contractor as per Resolution No. 12653 dtd.15.12.2008 of Govt. of Orissa, Labour & Employment Department.

36. The earnest money will be retained in the case of successful tender 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 of the unsuccessful tender will be refunded on application after the tender is finally accepted.

37. The work may be splited up and distributed among several contractors if considered necessary on the emergency of the circumstances of the work and the contractor is not entitled to any compensation on this account.

38. The Department reserves the right of authority to reject any or all tenders received without assigning any reason whatsoever.

39. That for the purpose of jurisdiction in the event of any dispute if any 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.

40. The bidder whose tender is selected for acceptance and has no fixed deposit with the Government of Odisha shall within a period of seven days upon intimation being given to him of acceptance of his tender make an initial security deposit in the form of Term Deposit Receipt of nationalized Bank in no other form which including the amount already deposited as earnest money shall be 2% of the value of the tendered amount and sign agreement in the P.W.D. Form No. P-1 contract Form (Schedule XLV No.61) for the fulfillment of the contract in the office of the Superintending Engineer, Nuapada Irrigation Division, Nuapada or as directed. In case of submission of Bids through the e-Procurement Portal , the system shall generate the award of

Contract letter and intimate the bidders in his e-mail. The security deposit together with the earnest money and the amount withheld according to the provision of P-1 contract Form agreement shall be retained as security for the due fulfillment of this contract. Failure to enter into the required agreement and to deposit the security 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 into between the contractor and the Govt. shall be the foundation of the rights of both 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 into the contract on behalf of the Govt. The security will be refunded one year after completion of the work and payment of the final bill and will not carry any interest.

41. Under section 12 of contract labour (Regulation and Abolition Act, 1970) the contractor should obtain contract labour license from District Labour Office and produce the Labour License to the undersigned at the time of signing of the agreement).

42. The bidder shall be liable to fully indemnify the department of any compensation under workmen compensation Act VIII of 1993 on account of the workmen employed by the contractor and full amount of compensation paid will be recovered from the contractor.

43. Tenderers are required to abide by the fair wages clause as introduced by Govt, of Orissa and will not pay less than the fair wages fixed by Govt, to the labourers engaged by him for the work.

44. In case of any complaint by the labourers working about the nonpayment of his wages as per latest minimum wages Act, the Superintending Engineer will have the right to investigate and if the contractor is found to be in default he may recover such amount from the contractor's dues and pay such amount to the labourer directly under intimation to the local labour officer to the govt. The decision of the Superintending Engineer is final and binding on the contractor.

45. The bidders will have to submit the Superintending Engineer, Nuapada Irrigation Division, Nuapada monthly return of labourer both skilled and unskilled employed by him on the work.

46. The bidder should keep himself in touch with the Engineer in charge for smooth execution of the work and arrange adequate labour depending on the work load and working space available. No claim for- detention for labour on any account will be entertained.

47. No compensation will be paid by the department for any damage done by rain, flood, cyclone, tide or by any other natural calamities during the execution of the work.

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48. It should be understood clearly that no claim what-so-ever will be entertained in regard to extra items of work or extra quantity of any item besides estimated amount, unless written order is obtained from the Engineer-in-charge and rates settled before the extra items of work or extra quantity of any item of work is taken up.

49. The bidders shall have to abide by the C.P.W.D. safety code rules introduced by the Govt. of India, Ministry of works Housing and supply in their standing order no.44150 dt.25.1.1957. which can be seen in the office of the Superintending Engineer, Nuapada Irrigation Division, Nuapada / undersigned on working day, during office hours.

50. The bidders shall bear various incidentals sundries and contingencies necessitated by the work in full within the following or similar category.

(a) Rent, Royalties and other charges of materials, octroi duty, entry tax and all other taxes including GST, Labour cess, ferry tolls, conveyance charges and other cost but excluding GST on account of land and building & temporary electric connection to worksite, water charges as well as construction of coffer dam. construction of service road diversion road and its maintenance till completion of work required by the bidder for collection of materials, storage, housing of staff or other purpose of the work. No bidder will however be liable to pay 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 there in 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 canal or water supply authorities.

(e) Suitable equipment and wearing apparatus for the labour engaged in risky operations and medical aid to the labourer engaged for the work.

(f) Suitable fencing. barriers, signals including paraffin and electric signals where necessary at work and approaches in order to protect public and employees form accident.

(g) Compensation including cost of any suit for injury to persons or property due to neglect of any major precautions also become payable due to operation of the workmen compensation Act.

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

51. All preliminary works such as vats, mixing platforms etc. are to be done by the contractor at his own cost. No payment will be made for bench marks, level pillars, profiles, benching and leveling the ground where require. The rates to be quoted should be before finishing items of work inclusive of carriage of all materials and incidental items of works.

52. After the work is finished all surplus materials, & debris should be removed 100 mtrs clear away from the site of the 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 and this should be inclusive of the rates,

53. If any further necessary information is required, Superintending, Nuapada Irrigation Division, Nuapada will furnish such, but it must be clearly understood that the tender must be received in order and according to instruction.

54. The work will be commenced after land acquisition, forest & environment clearance, if required. In case of delay in acquisition of land, forest & environment clearance, no compensation will be admissible but extension of time will be allowed.

55. The department will have the right to supply at any time in the interest of the work any departmental material to be used in the work in addition to those mentioned in clause No-54 and the contractor shall use such materials at the stock issue rate fixed by the Department or market rate whichever is higher.

56. Over and above these condition including the Technical specifications the terms, conditions, rules and regulations and specification laid down in Orissa standard specification code are also binding on the part of the contractor.

57. All Intending bidders should furnish the following information's in the proforma enclosed herewith (Annexure B)

(a) Particulars of each work now in hand (As per agt.)

(b) Approximate value of work remaining on the date of submission of tender.

(c) List of T & P. vehicles, machineries available with him.

(d) In case of submission of bids through e-Procurement portal on the bidder shall upload the scanned copy/copies of documents as required vide clause No-59 DTCN & 4 of IIT.

58. No Relation Certificate

The contractor shall have to furnish certificate along with the tender to the effect that he is not related to any officer in the rank to an Asst. Engineer and above in the state P. W.D., or Asst. Secy.

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and above in the W.R. Department. If the fact subsequently proved to be false the contract will be rescinded. The earnest money and the total security will be forfeited and shall be liable to make good the loss of damage resulting from such cancellation. The proforma for no relation certificate is contained in a separate sheet of D.T.C.N in Annexure-‘G’

59. The contractor shall sign as a token of final acceptance of the plans, sections and agreements for the work prior take up the work for execution.

60. The contractor is to supply necessary labour and materials for the purpose of alignment laying whenever required at his own cost.

61. The contractor should arrange necessary tools and plants such as Concrete Mixure, Vibrator, truck, tanker, pumps, Road Rollers etc, required for the efficient -execution of work at his own cost. The running charges of such plant and cost of consumables and conveyance are to be borne by the contractor.

62. In the event of delay in supply of design reasonable extension of time will be granted on the application of the contractor. But no claim for monetary compensation will be entertained under any circumstance.

63. Under no circumstance, Interest chargeable for the dues to any additional dues, if any payable for the work.

64. Conditional tenders will not be taken into consideration.

65. a) The EMD will be forfeited if the bidder backs out from offer before acceptance of tender by the competent authority as concurred in by law Deptt. & Finance Deptt. in their UOR No. 848/L 31.5.97 & UOR No.202/WFD Dt.6.3.98 respectively. (Works Deptt. Memo No. 9101/Clt.30.3.98) also the EMD will be forfeited if the bidder failed to sign the agreement after acceptance and not willing to deposit the required ISD and additional performance security for the unbalance tender items.

66. b. Signing of bid: The ‘online bidder’ shall digitally sign on all statements, documents, certificates, uploaded by him, owning responsibility for their correctness/authenticity as per IT Act 2000. if any of the information furnished by the bidder is found to be false/fabricated/bogus, his EMD/ Bid security shall stand forfeited and the bidder is liable to be blacklisted.

67. Dewatering from the foundation for bridges, culverts, building worksites etc and watering for consolidation in roads embankments when and where necessary during execution will have to be done by the contractor and no extra payment will be made on that account. The term dewatering

shall mean the execution or operation of the items due to standing water as well as due to percolation water.

68. The required amount (As fixed by Govt.) of the gross amount of the bill will be deducted from the contractors bill towards income tax & cess as amended from time to time.

69. (a) The rates quoted by the contractor shall be deemed to be inclusive of VAT on all the materials that he will have to purchase for performance of this contract.

(b)The rates quoted by the contractor in the tender for works shall include VAT that may be levied on turnover on works contract according to the Laws and Regulations as applicable from time to time & as amended from time to time.

(c) GST on works contract will be deducted from the bill @ 2% (TDS) or as amended from time to time and credited to Govt. account.

70.(a) The contractors are required to pay the Royalty to Govt. as fixed from time to time and produce such authenticated documents in support of their payment as royalty along with their bills. Failing which the amount of royalties of different materials as utilized by them in the work will be recovered from their bills.

(b)1% of the gross amount of bills shall be deducted from the contractor towards labour cess as amended from time to time

71. Additional performance security- No Additional performance security shall be obtained from the bidder when the bid is less than 5% of the estimated cost put to tender, 50% Additional performance security shall be deposited by the successful bidder if the bid amount is 5% and above and below 10% and further 50% Additional performance security shall be deposited by the successful bidder if the bid amount is 10% and above shall have to furnish (APS) in shape of demand draft / term deposit receipt duly pledged in favour of the Superintending Engineer, Nuapada Irrigation Division, Nuapada within 07, (Seven) days of issue of letter of acceptance (LoA) by the Divisional Officer (by e-mail) to the successful bidder, otherwise the bid of the successful bidder shall be cancelled and the Earnest money deposit/ bid security deposit shall be forfeited vide office memorandum No-4559/W Bhubaneswar, dt.-05.04.2021 of Works deptt. Further, proceeding for black listing shall be initiated against bidder vide office memorandum No-14299, dt.-03.10.2017 of Works deptt.

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SUPERINTENDING ENGINEER

GOVERNMENT OF ODISHA

WORKS DEPARTMENT

OFFICE MEMORANDUM

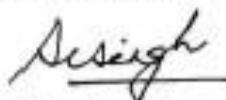
No. 07764800022025 632 /W., Bhubaneswar Dt. 9.1.26

Sub- Clarification on Works Department Office Memorandum No.173 dt 03.01.2026 regarding Amendment of Codal and Contractual Provisions.

The following clarifications are issued on Works Department Office Memorandum No. 173 dated . 03.01.2026

1. The phrase " to abolish the extant provisions of threshold negative bid caps (14.99%) introduced" in the first para of the Works Department OM No. 173 dated. 03.01.2026 may be read as " to abolish the extant provisions of threshold negative bid caps of 15 % introduced vide Works Department OM No. 12366/W dt. 08.11.2013 and amended vide Works Department OM No. 1437 dt. 31.01.2023"
2. If more than one bid is quoted (decimal up to two numbers will be taken for all practical purposes), either at the estimated cost put to tender or less than the estimated cost put to tender, the tender accepting Authority will finalize the tender through a transparent lottery system, where all the concerned bidders/their authorized representatives, the concerned SE/EE of the concerned Division and Divisional Accounts Officer (DAO) will remain present.
3. If the rate quoted by the SC and ST Category Contractors comes to the rate quoted by the L1 bidder(decimal up to two numbers will be taken for all practical purposes) after availing 10% price preference as per Para 2 of Works Department Resolution No. 27748 dated. 11.10.1977, the tender shall be finalized by the tender accepting authority through a transparent lottery system along with other categories of contractors.
4. As regards the bidding process in which the tender has been floated before the issue of Works Department Office Memorandum No.173 dt 03.01.2026, the bid shall be finalized as per the earlier provisions in Appendix-IX, Clause 36 of OPWD Code Volume-II.
5. This has been concurred in by the Finance Department in File No **FIN-WF1-MISC-0102-2025**

By order of the Governor



Principal Secretary to Government

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GOVERNMENT OF ODISHA
WORKS DEPARTMENT

OFFICE MEMORANDUM

No. 07764600022025 173 /W., Bhubaneswar Dt. 03/01/26

Sub:- Amendment of Codal & Contractual Provisions.

After careful observation, Government has been pleased to abolish the extant provisions of threshold negative bid caps (14.99%) introduced in Appendix-IX, Clause 36 of OPWD Code Volume-II in the procurement of works undertaken by the Govt of Odisha and its agencies to ensure the procurement process results in a viable and successful manner with adoption of following incremental **Additional Performance Security(APS)** system:

1. Additional performance security shall be taken on an incremental basis from the selected bidder for low bid prices in the project works as under:

- I. where the bid price is below 0% but not below 10% of the project cost put to bid, no additional performance guarantee/security percentage is required.
- II. where the bid price is below 10% but not below 20% of the project cost put to bid, the additional performance guarantee/security percentage shall be incremented by 0.1% for every percentage of bid price below 10% of the project cost put to bid starting at 11% with the additional bid performance guarantee being 0.1% and this additional performance guarantee percentage shall be applied on the bid price;
- III. where the bid price is 20% or more below of the project cost put to bid, the additional performance guarantee percentage shall be incremented by 0.2% for every percentage of bid price below 20% of the project cost put to bid in addition to 1% of the bid price and this additional performance guarantee percentage shall be applied on the bid price;
- IV. The additional performance guarantee percentage shall be rounded off to the next lower percentage based on whether the decimal point of the percentage of bid price is below 0.5% or next higher percentage based on whether the decimal point of the percentage of bid price is 0.5% or more.
- V. The additional performance security shall be treated as part of the performance security.

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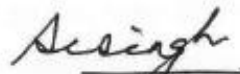
VI. Justification for abnormally low bids shall be scrutinized by the Departmental Technical Committee and recommended to the competent authority of the Administrative Department for the approval of the Additional Performance Security (APS). An abnormally low bid is one in which the Bid price, in combination with other elements of the Bid, appears so low that it raises material concerns as to the capability of the Bidder to perform the contract at the offered price. Procuring Entity may, in such cases, seek written clarifications from the Bidder, including detailed price analyses of its Bid price in relation to scope, schedule, resource mobilization, allocation of risks and responsibilities, and any other requirements of the bid document. If, after evaluating the price analyses, the procuring entity determines that the Bidder has substantially failed to demonstrate its capability to deliver the contract at the offered price, the Procuring Entity may reject the Bid/ Proposal. However, it would not be advisable to fix a normative percentage below the estimated cost, which would automatically be considered as an abnormally low bid.

2. These amendments shall take effect from the date of issue of the O.M.

3. Accordingly, the relevant existing codal/contractual provision stands modified with effect from the date of issue of this O.M.

4. This has been concurred in by the Finance Department vide **File No. FIN-WF1-MISC-0102-2025**

By order of the Governor

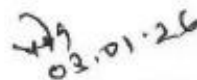


Principal Secretary to Government

Memo No. 174 /W, dated 03/01/26

Copy along with soft copy forwarded to Gazette Cell, Commerce and Transport (Commerce) Department, Bhubaneswar, for information and necessary action.

They are requested to publish the Office Memorandum in the extraordinary issue of the Gazette and supply 20 (twenty) copies to this Department.

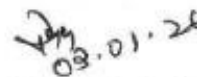


03.01.26

EIC-cum-Special Secretary to Government

Memo No. 175 /W., Dt. 03/01/26

Copy forwarded to the P.S. to the Hon'ble Chief Minister, Odisha for the kind information of the Hon'ble Chief Minister.



03.01.26

EIC-cum-Special Secretary to Government

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72. Providing facilities to the Engineer Contractor:

- a) Engineer contractor desirous to avail the facilities of exemption of EMD is required to submit an affidavit to be effect that he has not availed the facilities for more than two works during the current financial year. The name of work for which and the authority to which the tender is being submitted must be mentioned in the affidavit failing, which the tender will be rejected.
- b. If the tender of the following type of Schedule Caste and Scheduled Tribe Contractors is within 10% of the rate quoted by the lowest tender for any work, the work may be considered BY Lottery for award to him/them at the lowest tenders rate in relaxation of Rule 18 of the O.G.F.R. Vol - 1 and Pare 3.5.14 of the OPWD Code.
 - i. Individual registered Contractors belong to the S.C. and S.T.
 - ii. Private Limited companies in which at least 51% of the share are held by member of Scheduled Caste and / or Scheduled Tribes.
 - iii. Partnership Farms in which at least 51% of the share are held by members of Scheduled Caste and / or Scheduled Tribes.

The security deposit (earnest money & initial security) at half of the usual rate may be deposited realized by / from the Scheduled Caste or Scheduled Tribe Contractors coming under the categories upto PWD Contractors registration rules. The above concession will take effect from date of issue of the resolution.

73. On no account of the contracted work should be sublet to any body without the prior approval of the tender accepting authority of the Department. In such an event the contract may be rescinded with penalty as will be deemed proper by the competent authority.

74. In the contract (as hereinafter defined) the following words and expressions will have the meanings here by assigned to them.

- a) Approved / Approval Means approved in writing.
- b) Construction plant- Means all equipments, appliances or a thing of whatsoever nature required for the execution, or completion, maintenance of the works or temporary works but does not include materials or other things intended to form or forming part of the permanent work.
- c) Contract- means the instruction and information for tenderers General and Special conditions of the contract., Technical Specification, drawings, tender (including the Schedule of quantities and tender prices) the formal agreement and all agenda and attachment related to the above.
- d) Contractor- means the particular person, firm or corporation with whom the contract has been made for executing the work.

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- e) Drawing- means the drawings referred to in the specifications, any modifications of such drawings approved in writing by the **Superintending Engineer, Nuapada Irrigation Division, Nuapada** and such other drawings as may from time to time be furnished or approved in writing by the Engineer-in- charge.
- f) Engineer-in- Charge- Means the Superintending Engineer in charge of the work specified or parts of the works under the contract, or such other departmental assistants or sub- ordinates to whom the Executive Engineer, in charge may have delegated certain duties, acting separately within the scope of particular duties entrusted to them.
- g) Government- Means Government of Orissa, Department of Water Resources.
- h) I.S.S./ B.I.S.- Means Indian Standard Specifications/ Bureau of Indian Standard.
- i) Temporary works- Means all temporary works of every kind required for the performance of the contract.
- j) Specification- Whenever the term “Specification” is used, apart from a specified standard specification; it shall mean the specification of plan prepared for a particular site as instructed to the contractor in executing that item of work.

75. Miscellaneous :

- (a) The department will have the right to inspect the scaffolding and centering made for the work and reject partly or fully such structures if found defective in their opinion.
- (b) Shuttering and centering shall be made with seasoned sal wood planks the inside of which shall be lined with suitable sheeting and make leak proof and water tight or alternatively steel shuttering and centering may be used.

76. Bidders are also required to go through each clause of P.W.D. form F2 carefully in addition to the clause mentioned herein before tendering.

77. The contractor shall have to submit an affidavit about authentication of tender documents, while submitting tender.(As per Annexure-E)

78. All the Annexures from ‘A to ‘H’, Form ‘D’ and check list attached to section 2 of this DTCN must be filled in properly along with the authenticated documentary evidence required therein, failing which the bid shall be treated as ‘Non-responsive’ and summarily be rejected.

79. Amendment to Clause-32 of F² Contract (Payment of escalation of Steel, Cement and Bitumen)

Clause-32 (a) (i) : If during the progress of the work, the price of any material (excluding the cost of Steel, Cement & Bitumen) incorporated in the work (not being materials supplied from the Engineer-in-Charge’s store in accordance with clause here of) increases as result of increase or

decrease in the average wholesale price index (all commodities) and the contractor there upon necessarily & properly pays in respect of that material (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 shall be equivalent to the loss or minus difference of 75% in between the average wholesale price index (all commodities) which the tender was opened as per the formula indicated below provided that the work has been carried out within the stipulated time or extension thereof as are not attributable to him.

(ii) : Where original contract period is one year and above, increase/decrease of cost of Steel, Cement & Bitumen are to be paid/ received. Payments in case of increase are to be made with prior approval of Govt. 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 Superintending 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 (IOCL)

(iii): 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 Govt. 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 fulfillment of the conditions mentioned below.

i) 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 (IOCL)

ii) Cost of the project should be more than Rs.50.00 lakhs. However, the differential cost of 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.

iii) Contractor has to submit the vouchers showing procurement from an authorized dealer for the said work within 28 days before utilization of steel, cement & Bitumen.

iv) Differential cost will be allowed only for the original agreement period, but not for the extended period even though it might have been validity extended.

v) Differential cost will be allowed only after successful completion of the work as per the approved work programme.

vi) Stipulations contained in existing clause-32.

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

80. The tender will be decided as per latest amendment to OPWD code vide Government of Odisha Works Department No.12366 dtd.08.11.2013.

81. (i) The original tender documents will not be received by any office as per Works Department Office Memorandum file No.07556900042013 (pt-II)-7885/W dt.23.07.2013

(ii) The bidders who have not deposited the cost of tender paper earlier participated in the tender of this Division will be considered for this time. The work performance of the agency will be taken in to account while processing the tender.

82. For a notice calling for tenders, only a single tender is received in the first time, the tender shall be cancelled without opening of the bid as per office Memorandum No.16 dt.01.01.2015 of Govt. of Odisha, Works Department and rule-29 of Appendix-IX of O.P.W.D. code Vol-II.

83. If the rate quoted by the SC&ST category contractor comes to 14.99% (decimals up to two numbers will be taken for all practical purpose) less than the estimated cost after availing 10% preference as per para 2 of Works Deptt. Resolution No.27748 dt.11.10.1977, then the tender shall be finalized by the tender accepting authority through a transparent lottery system along with other category of contractor whose rates 14.99% less than the estimated cost.

SECTION – 2

**INFORMATION
AND
INSTRUCTION TO BIDDERS**

SECTION-2

1. Preparation of Tender Documents

The intending bidder shall submit tender documents duly filled in and signed, in on-line through Govt. web-site. The forms attached with the documents are to be filled in completely. All the information called for should be furnished. Any change to the forms will not be accepted. All pages including additional pages of the tender document must be signed at the bottom of the page by the contractor and Superintending Engineer, Nuapada Irrigation Division , Nuapada.

2. Method of submission of Tender Documents

2.1 The tender documents duly filled in and signed by the intending bidder should be submitted in on-line through prescribed website only.

2.2 If the intending bidder is an individual, the documents shall be signed by the individual above his full type written name and current address.

2.3 If the intending tender is a proprietary firm it shall be signed by the proprietor above his full name and with his current address.

2.4 If the intending bidder is a firm in partnership it shall be signed by a partner holding the power of attorney for the firm in partnership in which case a certified copy of power of attorney shall accompany in the pre-qualification documents.

2.5 If the intending bidder is a limited company or Corporation, it shall be signed by a duly authorized person holding the power of attorney in which case certified copy of power of attorney shall accompany.

2.6 All witness and sureties shall be of person of status and probity and their full names, occupation and address shall be stated below their signatures.

2.7 As the period of execution is **02 (Two) months**, so there is no provision of escalation.

2.8 The agency will install display board mentioning information about the work at worksite after drawal of the agreement at his own cost.

3. Opening of Tender Documents: The tender documents will be opened on **31.01.2026 at 10.00 A.M.** by the Superintending Engineer, Nuapada Irrigation Division, Nuapada in the office of the Superintending Engineer, Nuapada Irrigation Division, Nuapada in the presence of bidder on their authorized representative, who wishes to be present.

4. Machineries

The following machineries and equipments in working condition required for execution of the work.

<u>Sl.No</u>	<u>Name of the equipment</u>	<u>Capacity</u>	<u>Number required</u>
1.	Concrete Mixture	0.28 cum	2 Nos
2.	Concrete Needle Vibrator	3.00 HP	4 Nos
3.	Tipper/Truck	10 T	2 Nos.
4.	Water tanker	Tractor driven (3000 Ltr)	2 nos

The successful bidder should deploy all the machineries required for the work on receipt of the acceptance letter. On verification and satisfaction of the concerned Superintending Engineer the agreement will be done.

5. Final Decision making authority

The competent authority reserves the right to accept or reject or disqualify any of the tender of pre qualification without assigning any reasons and its decision shall be final.

6. Further Clarification: The Superintending Engineer, Nuapada Irrigation Division, Nuapada, Dist. Nuapada may be contacted during office hours on any working days for any further clarification. Online clarification may also be obtained as per the dateline mentioned in the NIT.

7. Sample of all material: The contractor shall supply sample of all materials fully before procurement for the work for testing and acceptance at his own cost as may be requiring by the concerned Superintending Engineer.

8. 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, damages and repairs occasioned or rendered necessary to the same by fire or other causes and they hold the Govt. of Orissa harmless for any claims for injuries to person or structural damage to property 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 earth quake, flood, cyclone, epidemic, riot or any other calamity whether natural or incidental damages so caused will have to be made good by the contractor at his own cost.

9. 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 his book by the PWD Officer-

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in-Charge with their dated signatures and duly noted by the contractor or his authorized agents with their dated signature. Orders entered in his book and noted by the contractor's agent shall be considered to have been duly given to the contractor for following the instructions of the Department. The order book shall be the property of the Department and shall not be removed from the site of work without written permission of the Engineer (Superintending Engineer) and to be submitted to the Engineer-in-Charge every month.

Government of Orissa

Works Department Office Memorandum No 1027 /W, Date 24.07.2009

1. This office memorandum consists of the procedural requirement of e-procurement and shall be made part of the detailed Tender Call Notice of Instruction to Bidder for all work tenders hosted in the portal.
2. The e-Procurement portal of the Government of Orissa is "<https://tendersorissa.gov.in>"
3. Use of valid Digital Signature Certificate of appropriate class (Class II or Class III) issued from a registered Certifying Authority (CA) as stipulated by Controller of Certifying Authorities (CCA). Government of India such as n-Code, Sify, TCS, MTNL, e-Mudhra etc. is mandatory for all users.
4. The DSC issued to the Department users is valid for the period of two years only. All the Department users are responsible to revalidate their DSC prior to expiry.
5. For all purpose, the server time displayed in the e-procurement portal shall be the time to be followed by all the users.
6. Government after careful consideration has decided to host all tenders costing 10 lakhs or above in the e-procurement portal. This will be applicable across all Engineering Department such as Works Department, Department of Water Resources, Rural Development and Housing and urban Development Department, Government of Orissa also welcomes hosting of tenders by any other departments, authority, corporations, local bodies etc. of the State with prior approval from Information Technology Department.
7. The e-Procurement shall be operated compliant to relevant provisions of OGFR/OPWD code/Accounts code/Government statutes including any amendments brought from time to time to suit to the requirement of the best national practice.
8. Registration in the e-procurement portal is without levy of any charges but Government reserves the right to levy any charges for such value added services in future.
9. Contractors not registered with Government of Orissa, can participate in the e-procurement after necessary enrollment in the portal but have to subsequently register themselves with the appropriate registering authority of the State Government before award of the work as per prevalent registration norms of the State.

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10. For the role management "Department" is the Administrative Department, Organization or wing is the Chief Engineer or highest tender accepting authority or equivalent officer under the Administrative Department, Circle is the Addl. Chief Engineer or equivalent officer, Division is the Superintending Engineer or equivalent officer and subdivision is the Assistant Engineer or equivalent officer.
11. The e-procurement software assigns role for operation of the module for specific function. The terminologies used in the Portal and their respective functions in the software are as follows.
 - a. Application Administrator: (NIC and State Procurement Cell)
 - i. Master Management
 - ii. Nodal officer Creation
 - iii. Report Generation
 - iv. Transfer and blocking of Officers
 - b. Nodal Officer (At organization Level not below the Superintending Engineer or equivalent rank)
 - i. Creation of Users
 - ii. Role Assignment
 - iii. Transfers and blocking of Officers
 - c. Procurement Officer-Publisher (Officer having Tender inviting power at any level)
 - i. Publishing of Tender
 - ii. Publishing of Corrigendum/addendum/cancellation of Tender
 - iii. Bid Clarification
 - iv. Uploading of Pre-Bid Minutes
 - v. Report generation
 - d. Procurement Officer-Administrator : (generally sub-ordinate officer to Officer inviting the Tender)
 - i. Creation of Tender
 - ii. Creation of corrigendum/addendum/cancellation of Tender
 - iii. Report generation
 - e. Procurement Officer-Opener (generally Sub-ordinate officer to Officer inviting the Tender)
 - i. Opening of Bid
 - f. Procurement Officer-Evaluator (generally Sub-ordinate officer to Officer inviting the Tender)
 - i. Evaluating Bid
 - g. Procurement Officer-Auditor (Procurement Officer –Publisher and / or Accounts Officer /Finance Officer)
 - i. To take up auditing

12. NOTICE INVITING BIDS (NIB) OR INVITATION FOR BID (IFB):

- a. The Notice inviting Bids (NIB) and Bid documents etc. shall be in the Standard formats as applicable to conventional Bids and will be finalized / approved by the officers competent as in the case of conventional Bids.
- b. The officers competent to publish NIB in case of conventional Bids will host the NIB in the portal. Simultaneously a notification should also be published in the newspapers as per existing rules preferably in the following format to effect economy.

Government of Orissa "e" procurement Notice	
Bid Identification No.: _____	
1.	Name of the work: _____
2.	Estimated cost: _____
3.	Period of completion: _____
4.	Date & Time of availability of bid document in the portal: _____
5.	Last date / Time for receipt of bids in the portal: _____
6.	Name and address of the Officer Inviting Bid: _____

c. Further details can be seen from the e-procurement portal "<https://tendersorissa.gov.in>"

- Administrator and published by Procurement Officer Publisher (Officer Inviting Tender) using their DSCs in appropriate format so that the document is not tampered with.
- d. The tender documents published by the Tender Inviting Officer (Procurement Officer Publisher) in the website "<https://tendersodisha.gov.in>" will appear in the "Latest Active Tenders". The Bidders / Guest Users can download the Bid documents after the due date & time of sale. The publication of the tender will be for specific period of time till the last date of submission of bids as mentioned in the 'notice Inviting Bid' after which the same will be removed from the list of Latest Active tenders.

13. ISSUE OF ADDENDA/CORRIGENDA/CANCELLATION NOTICE

- a. The Procurement Officer Publisher (Officer inviting tender) shall publish any addendum/corrigendum/cancellation of tender in the website "<https://tendersodisha.gov.in>" notice board and through paper publication and such notice shall form part of the bidding documents.
- b. The System shall generate a mail to those bidders who have already uploaded their tenders and those bidders if they wish, can modify their tender.

14. PARTICIPATION IN BID

- a. **PORTAL REGISTRATION:** The Contractor/Bidder intending to participate in the bid is required to register in the Portal using his/her active personal/official e-mail ID as his/her Login ID and attach his/her valid Digital signature certificate (DSC) to his/her unique Login ID. He/She will enter relevant information as asked for about the firm/Contractor. This is a onetime activity for registering in Portal.

i. Bidders participating through Joint Venture shall declare the authorized signatory through Memorandum of Understanding duly registered and enroll in the portal in the name and style of the Joint venture Company. It is mandatory that the DSC issued in the name of the authorized signatory is used in the portal.

ii. Any third party/company/person under a service contract for operation of e-procurement system in the State or his/their subsidiaries or their parent companies shall be ineligible to participate in the procurement processes that are undertaken through the e-procurement system irrespective of who operates the system.

b. **LOGGING TO THE PORTAL:** The Contractor/Bidder is required to type his/her Login ID and password. The system will again ask to select the DSC and confirm it with the password of DSC as a second stage authentication. For each login, a user's DSC will be validated against its date of validity and also against the Certificate Revocation List (CRL) of respective CA stored in system database. The system checks the unique Login ID, password & DSC combination and authenticates the login process for use of portal.

c. **DOWNLOADING OF BID:** The bidder can download the tender of his choice and save it in his system to undertake necessary preparatory work off-line and upload the completed tender at his convenience before the closing date and time of submission.

d. **CLARIFICATION ON BID:** The bidder may ask question online in the e-procurement portal using his/her DSC; provided the questions are raised within the period of seeking clarification as mentioned in tender call notice/Bid. The Officer inviting the bid / Procurement Officer-Publisher will clarify queries related to the tender.

e. **PREPARATION OF BID:**

i. The bids may consist of general arrangements drawings or typical or any other drawings relevant to the work for which bid has been invited. Bidder may down load these drawings and take out the print for detail study and preparation of his bid. Any other drawings and documents pertaining to the works available with the Officer Inviting the Bid will be open for inspection by the bidders.

ii. The Bidder shall go through the Bid carefully and list the documents those are asked for submission. He shall prepare all documents including cost of Bid Document, Bid Security, Declaration form, price bid etc and store in the system.

f. **SUBMISSION OF BID SECURITY DECLARATION AND COST OF BID DOCUMENTS:**

i. The Bidder shall furnish, as part of his Bid, a Bid Security Declaration in prescribed form **(As per Annexure-I)** for the amount mentioned under NIT/Contract Data. The bidder shall scan all the written / printed pages of the bid security declaration form and up load the same in portable document format (PDF) to the system in designated place of the technical BID. Furnishing scanned copy of such documents is mandatory otherwise his/her bid shall be declared as non-responsive and liable for rejection.

ii. The successful bidders will have to deposit bid security (ISD)@1% of the amount put to Tender in the form of Deposit receipt of Schedule Bank /Kissan Vikash Patra/Post Office Savings Bank Account / National Savings Certificate / Post Office Term Deposit Account duly pledged in favour of the Superintending Engineer, Nuapada Irrigation Division, Nuapada and payable at S.B.I. Nuapada as per the terms & conditions laid down in OGFR and in no other form during execution of the agreement.

The Fixed Deposit / Bank Guarantee or any other form as mentioned in detailed tender call notice in respect of Earnest Money Deposit /Bid Security and the Bank Draft in respect of cost of Bid are to be scanned and up loaded in portable document format (PDF) along with the bid.

- iii. The bidder shall provide the cost of bid and the Bid security in a sealed cover superscripting the name of the work for which the instruments are intended and the Officer inviting the Bid. He/She is not required to write his/her name on the cover. The original FD/BG/BD shall be physically produced before the Officer inviting the Bid or the concerned Division/ Circle/ Chief Engineer before the specified period mentioned in the bid; which in no case shall be less than three days excluding the last date of submission and opening of bids (Technical cover opening in case of Double Cover System). The bidder is also allowed to submit the original FD/BG/BD by Registered post / Speed post or any other delivery system before the last date & time of opening of tender.
- iv. The Officer authorized by the Procurement Officer-Publisher (Officer Inviting Tender) shall transmit the sealed envelopes carefully to the Procurement Officer-Publisher prior to opening of the Bid. The Procurement Officer-Publisher shall provide signed receipt with date and time for having received the number of sealed envelopes.
- v. The Procurement Officer-Publisher (Officer Inviting the Tender) or other concerned officers authorized to receive the original Bid security and Bid cost on behalf of the Procurement Officer-Publisher shall not be responsible for any postal delay and /or non-receipt of the original copy of the bid security on or before specified date and time.

Contractor exempted from payment of EMD will be able to participate in the tender directly by uploading documentary evidences towards his eligibility for such exemption.
- viii. Government of Orissa has been actively considering integrating e-payment gateway in to the portal for payment of Cost of Bid and Bid Security/Earnest Money Deposit. The process of using e-payment gateway shall be issued separately after it is established.

15. SUBMISSION OF BID:

- a. The bidder shall carefully go through the tender and prepare the required documents. The Bid shall have a Technical Bid & a Financial Bid. The Technical Bid generally consist of cost of Bid documents, proof of EMD submission, GST, PAN/TIN, Registration Certificate, Affidavits, Profit Loss statement, Joint venture agreement. List of similar nature works, work in hand list of machineries and any other information required by OIT. The Financial Bid shall consist of the Bill of Quantities (BOQ) and any other price related information/undertaking including rebates.
- b. The Protected Bill of Quantities (BOQ) uploaded by the Procurement Officer-Publisher for the Bid is the authentic BOQ. Any alteration or deletion or manipulation in BOQ shall lead to cancellation of Bid.
- c. The Bidder shall up load the scanned copy/copies of document in support of eligibility criteria and qualification information in prescribed format in Portable Document Format (PDF) to the portal in the designated locations of Technical Bid.
- d. The bidder shall write his name in the space provided in the specified location in the Protected Bill of Quantities (BOQ) published by the Officer Inviting Tender. The bidder shall type rates in figure only in the rate column of respective item(s) without leaving any blank cell in the rate column in

case of item rate tender and type percentage excess or less up to one decimal place only in case of percentage rate tender.

- e. The bidder shall log on to the portal with his/her DSC and move to the desired tender for uploading the documents in appropriate place one by one simultaneously checking the documents.
 - i. Bids cannot be submitted after due date and time. The bids once submitted cannot be viewed, retrieved or corrected. The Bidder should ensure correctness of the bid prior to uploading and take print out of the system generated summary of submission to confirm successful uploading of bid. The bids cannot be opened even by the OIT or the Procurement Officer-Publisher/opener before the due date and time of opening.
 - ii. Each process in the e-procurement is time stamped and the system can detect the time of log in of each user including the Bidder.
 - iii. The Bidder should ensure clarity/legibility of the document uploaded by him to the portal.
 - iv. The system shall require all the mandatory forms and fields filled up by the contractor during the process of submission of the bid/tender.
 - v. The bidder should check the system generated confirmation statement on the status of the submission.
 - vi. The Bidder should upload sufficiently ahead of the bid closure time to avoid traffic rush and failure in the network.
 - vii. The Tender inviting Officer is not responsible for any failure, malfunction, or breakdown of the electronic system used during the e-procurement process.
 - viii. The Bidder is required to up load documents related to his eligibility criteria and qualification information and Bill of Quantities duly filled in. It is not necessary for the part of the Bidder to up-load the drawings and other Bid documents (after signing) while up-loading his bid. It is assumed that the bidder has referred all the drawings and documents uploaded by the Officer Inviting the Bid.
 - ix. Seeking any revision of rates or backing out of the bid claiming for not having referred to any or all documents provided in the Bid by the Officer Inviting the Bid will be construed as plea to disrupt the bidding process and in such cases the bid security shall be forfeited.
 - x. The bidder will not be able to submit his bid after expiry of the date and time of submission of Bid (server time). The date & time of bid submission shall remain unaltered even if the specified date for the submission of bids declared as a holiday for the Officer Inviting the Bid.
 - f. **SIGNING OF BID:** The 'online bidder' shall digitally sign on all statements, documents, certificates, uploaded by him, owning responsibility for their correctness/authenticity as per IT ACT 2000. If any of the information furnished by the bidder is found to be false / fabricated / bogus, his EMD / Bid security shall stand forfeited and the bidder is liable to be blacklisted.
16. **SECURITY OF BID SUBMISSION:**
- a. All bid uploaded by the Bidder to the portal will be encrypted.
 - b. The encrypted Bid can only be decrypted/opened by the authorized openers on or after the due date and time.

17. RESUBMISSION AND WITHDRAWAL OF BIDS:

- a. Resubmission of bid by the bidders for any number of times before the final date and time of submission is allowed.
- b. Resubmission of bid shall require uploading of all documents including price bid afresh.
- c. If the bidder fails to submit his modified bid(s) within the pre-defined time of receipt the system shall consider only the last bid submitted.
- d. The bidder should avoid submission of bid at the last moment to avoid system failure or malfunction of internet or traffic jam or power failure etc.
- e. The Bidder can withdraw his bid before the closure date and time of receipt of the bid by uploading scanned copy of a letter addressing to the Procurement Officer-Publisher (Officer Inviting Tender) citing reasons for withdrawal. The system shall not allow any withdrawal after expiry of the closure time of the bid.

18. OPENING OF THE BID:

- a. Bid opening date and time is specified during tender creation or can be extended through corrigendum. Bids cannot be opened before the specified date & time.
- b. All bid openers have to log on to the portal to decrypt the bid submitted by the bidders.
- c. The bidders & guest users can view the summary of opening of bids from any system.
Contractors are not required to be present during the bid opening at the opening location if they so desire.
- d. In the event of the specified date of bid opening being declared a holiday for the Officer inviting the Bid, the bids will be opened at the appointed time on the next working day.
- e. In case bids are invited for more than one package, the order for opening of the "Bid" shall be that in which they appear in the "Invitation for Bid".
- f. During bid opening, the covers containing original financial instruments towards Cost of bid and Bid Security in the form specified in the DTCN/ITB valid for the period stated in the Bid, received after last date of receipt of bid and before opening of the bids shall be opened and declared. The Procurement Officer-Opener shall continue opening of other documents if he is satisfied about the appropriateness of the cost of Bid and the Bid security.
- g. Combined bid security for more than one work is not acceptable.
- h. The electronically submitted bids may be permitted to be opened by the predefined Bid opening officer from their new location if they are transferred after the issue of Notice inviting Bid and before bid opening. Further action on bid documents shall be taken by the new incumbent of the post.

19. EVALUATION OF BIDS:

- a. All the opened bids shall be down loaded and printed for taking up evaluation. The Procurement Officer-Openers shall sign on each page of the documents downloaded and furnish a certificate that the documents as available in the portal for the tender have been down loaded.
- b. The Procurement Officer-Evaluators shall take up evaluation of bids with respect to the qualification information and other information furnished subject to confirmation of the bid security by the issuing institutions.
- c. After receipt of confirmation of the bid security, the bidder may be asked in writing to clarify on the documents provided in the Technical Bid, if necessary, with respect to any doubts or illegible documents. The Officer Inviting Tender may ask for any other document

of historical nature during Technical evaluation of the tender. Provided in all such cases, furnishing of any document in no way alters the Bidder's price bid. Non-submission of legible documents may render the bid non-responsive.

- d. The bidders will respond in not more than 7 days of issue of the clarification letter, falling which the bid of the bidder will be evaluated on its own merit.
 - e. Technical evaluation of all bids shall be carried out as per information furnished by Bidders. But evaluation of bids does not exonerate bidders from checking their original documents at later date. If the bidder is found to have misled the evaluation through wrong information action as per relevant clause of DTCN/ITB shall be taken against the bidder/contractor.
 - f. The procurement Officer- Evaluators; will evaluate bids and finalize list of responsive bidders.
 - g. The financial bids of the technically responsive bidders shall be opened on the due date of opening. The Procurement Officer-Openers shall log on to the system in sequence and open the financial bids.
 - i. The Financial Bid will be opened on the notified date & time in the presence of bidders or their authorized representative who wish to be present.
 - ii. At the time of opening of "Financial Bid" bidders whose technical bids were found responsive will be opened.
 - iii. The responsive bidder's name, bid prices, item wise rates, total amount of each item in case of item rate tender and percentage above or less in case of percentage rate tenders will be announced.
 - iv. Procurement Officer-Openers shall sign on each page of the downloaded BOQ and the Comparative Statement and furnish a certificate to that respect.
 - v. Bidder can witness principal activities and view the documents/summary reports for that particular work by logging on to the portal with his DSC from anywhere.
20. **NEGOTIATION OF BIDS:**
- a. For examination, evaluation, and comparison of bids, the officer inviting the bid may at his discretion, ask the lowest bidder for clarification of his rates including reduction of rate on negotiation and breakdown of unit rates.
21. **NOTIFICATION OF AWARD AND SIGNING OF AGREEMENT:**
- a. The Employer/Engineer-in-Charge shall notify acceptance of the work prior to expiry of the validity period by cable, telex or facsimile or e-mail confirmed by registered letter. This Letter of Acceptance will state the sum that the Engineer-in-Charge will pay the contractor in consideration of the execution & completion of the Works by the contractor as prescribed by the contract & the amount of Performance Security and additional Performance security required to be furnished. The issue of the letter of acceptance shall be treated as closure of the Bid process and commencement of the contract.
 - b. The Contractor after furnishing the required acceptable performance security & additional performance security, "Letter to Proceed" or "Work Order" shall be issued by the Engineer-in-Charge with copy thereof to the Procurement Officer-Publisher. The Procurement Officer-Publisher shall up load the summary and declare the process as complete.

Sd/-

EIC-cum-Secretary to Govt.

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SECTION – 3

GENERAL RULES AND DIRECTIONS

Schedule-XLV-Form No.61

ORISSA PUBLIC WORKS DEPARTMENT
(Form P-1)
PERCENTAGE RATE TENDER AND CONTRACT FOR WORKS
General Rules and Directions for the guidance of Contractors

1. All works proposed for execution by contract will be notified in a form of invitation to tender pasted on board hung up in the office of and signed by the Superintending Engineer.

This notice will state the work to be carried out, the items and approximate quantities thereof as well as the date of submitting and opening of tenders also the amount of earnest money to be deposited and the amount of the security deposit to be deposited by successful tenderer and the percentage if any, to be deducted from bill. Copies of the specification, design and drawing and any other documents required in connection with the submission of tender signed for the purpose of identification by the Superintending Engineer shall also be opened for inspection by the contractor at the office of the Superintending Engineer during office hours.

2. In the event of the tender being submitted by a firm it must be signed separately by each member thereof, or in the event of the absence of any partner, it must be signed on his behalf by a person holding a power of attorney, authorizing him to do so.

3. Receipts for payment made on account of work, when executed by firm must also be signed by several partners except where the contractors are described in their tender as a firm in which case the receipts must be signed in the name of the firms by one of the partners, or by some other person having authority to give effectual receipts for the firm.

4. The memorandum of work tendered for and the memorandum of materials to be supplied by the Public Works Department and their issue rates shall be filled in and completed in the office of the Sub-Divisional Officer/Superintending Engineer before the tender form is issued. If a form is issued to an intending tender without having been so filled in and completed he shall request the office to have this done before he completes and delivers his tender.

5. The amount of earnest money to be deposited will be 1% of the amount put to tender.

6. Any person who submits a tender shall fill up the usual printed form standing at what rate he is willing to undertake each item of the work. Incomplete tender and the tenders which propose any alteration in the specified in the said form of invitation to tender, or which contain any other condition of any sort or omit to not the time within which the work can be finished or which are not accompanied by a treasury challan for the required earnest money will be liable to rejection. No single tender shall include more than one work but contractors who wish to tender for two or more works shall submit a separate tender for each. Tender shall bear the name of the work to which they refer written outside the envelope. Cash deposits for earnest money herein before mentioned shall be made in Government treasuries and the challan thereof should be enclosed with the tender.

7. The Engineer-in-Charge or his fully authorised assistant will open the tenders in the presence of any intending contractors who may be present at the time and will enter the amounts of the several tenders in a comparative statement in suitable form. In the event of a tender being rejected the challan for the earnest money forwarded therewith

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shall thereupon be returned to the tenderer with a pay order for the amount of the earnest money.

8. The Engineer-in-Charge shall have the right of rejecting all or any of the tenders.

9. In the event of tender being selected for acceptance the Engineer-in-Charge who opened the tender will, if he is competent to accept the tender, inform the tender of the selected tender who shall thereupon sign copies of the specification and other document mentioned in rules 1 and 4 for the purpose of identification and for his acceptance with the tender. The tenderer of the selected tender shall also deposit the required amount of the security money within the prescribed time. If the tenderer fails to deposit the required amount of the security money within the prescribed time, the Engineer-in-Charge may reject the tender.

If the Engineer-in-Charge is not competent to accept the tender himself, he will inform the tenderer of the tender which is decided to recommend for acceptance. Such tender shall thereupon sign forthwith copies of the specification and other documents mentioned in rules 1 and 4 and shall deposit the required amount of security money within the prescribed time. The tender with the specification and other documents signed by the tenderer will then be forwarded for acceptance to the Engineer who is competent to accept the same. If the said Engineer rejects the tender the security money deposited shall be refunded to the tender.

10. When a tender is selected for acceptance the tenderer shall deposit the required amount of the security money in cash in the treasury and shall forward the challan to the Executive Engineer. Government securities may be endorsed to the Superintending Engineer in lieu of cash deposit of the required amount of the security money. No tender shall be finally accepted until the required amount of the security money has been deposited.

11. Contractors. Should pay 1% as earnest money at the time of submitting tenders and 1% as initial security at the time of acceptance of tender. Besides the earnest money and initial security, contractors of Super, Special, A and B classes will be made required to furnish 5% security deposit by way of each bill where as in case of C and D class contractors such deductions will be made @ 3% of gross amount of each bill. Thus the total security deposit from contractors will be 7% for Super, Special, A and B classes and 5% for C and D classes respectively.

12. When tender has been selected for acceptance and the required amount of the security money has been deposited the Engineer shall scrutinize all pages of the form of Item, Rate, Tender and contract for works to see that the form has been properly filled up and signed by the contractor and the signature witnessed. He shall then if he is not so competent, shall send the form for signature of the acceptance to the officer competent to accept it.

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TENDER FOR WORKS

I/We hereby tender for the execution for the Governor of Odisha of the work specified in the underwritten memorandum at the rates specified therein within a period of years months from the date of written order to commence and in accordance in all respect with specifications, designs, drawing and other documents referred to in rule thereof and subject to the annexed conditions of contract and with such materials as are provided for by and in all other respects in accordance with such conditions so far as applicable

MEMORANDUM

a) If Several sub-works are included they should be detailed in separate list.	Name of Work :- Slope protection of Kharkhara nallah D/S bridge from RD 632m to 800m of village Chanabeda for the year 2026-27	
	b) Estimated cost:	Rs. 33.66 lakhs (Excluding GST)
	c) Agreement amount:	
b) This deposit will be 1% of the estimated cost of the work.	d) Earnest money:	
	e) (i) Initial security deposit @ 2%(including earnest money) to be deposited before the commencement of the work:	
	(ii) Additional Performance Security:	
c) This percentage deduction from bills will be credited to the contractor's security deposit.	f) %age to be deducted from bills:	
	g) Time required for the work from date of written order to commence	
	h) Date of written order to commence	
	i) Total number of work tendered for	

Signature of contractor before submission of tender

Should this tender be accepted I/We hereby agree to abide by and fulfill all the terms and provisions of the said conditions of contract annexed here to so far applicable, or in default thereof to forfeit and pay to the Governor of Orissa or his successors in office the sum of money mentioned in the said conditions.

*Signature of witness to tenderer's signature

Dated the day of 2026

Witness

Address

Occupation

Signature of the officer by whom accepted.

The above tender is hereby accepted by me on behalf of the Governor of Odisha.

Dated the Day of2026

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SECTION – 4

CONDITION OF CONTRACT

CONDITIONS OF CONTRACT

Clause-1: All compensation or other sums of money payable by the contractor to Government under the terms of this contract may be deducted from or paid by the sale of a sufficient part of his security deposit or from the interest arising there from or from any sums which may be due or may become due to the contractor by Government on any account whatsoever and in the event of his security deposit being reduced by reason of any such deduction of sale as aforesaid, the contractor shall within ten days thereafter make good in cash or Government securities endorsed as aforesaid any sum or sums which may have deducted from or raised by sale of the security deposit or any part thereof.

Compensation for delay. The work should not be considered finished until such date as the Superintending Engineer shall certify as the date on which the work is finished after necessary rectification of defects as pointed out by the Superintending Engineer or his authorised agents are fully complied with by the contractor to the Executive Engineer's satisfaction.

Action when whole security deposit is forfeited.

Clause - 2(a): The time allowed for carrying out the work as entered in the tender shall be strictly observed by the contractor and shall be reckoned from the date of which the written order to commence work is given to the contractor. The work shall, throughout the stipulated period of the contract, be carried on with all due diligence (time being deemed to be of essence of the contract on the part of the contractor) and the contractor shall pay as compensation, an amount equal to $\frac{1}{2}$ percent on the amount of the estimated cost, if the whole work as shown by the tender for every day that the work remains uncommenced, or un-finished on which the work is finished after necessary rectification of defects as pointed out by the Superintending Engineer or his authorised agents, are fully complied with by the contractor to the satisfaction of the S.E. And further, to ensure good progress during the execution of the work the contractor shall be bound, in all cases in which the time allowed for any work exceeds one month, to complete one-fourth of the whole of the work before one fourth of the whole time allowed under the contract has elapsed; one half of the work, before one half of such time has elapsed in the events of the contractor failing to comply with the condition, he shall be liable to pay as compensation an amount equal to one third percent on the said estimated cost of the whole work for every day that the due quantity of work remains incomplete. Provided always that the entire amount of compensation to be paid under the provisions of this clause shall not exceed 10 percent on the estimated cost of the work as shown in the tender.

Clause - 2(b) If there are possibility of exceeding this compensation amount as mentioned in clause (a) 10% of the estimated cost, or in any case in which under any clause or clauses of this contract the contractor shall have rendered himself liable to pay compensation amounting to the whole of his security deposit in the hands of Government (whether paid in one sum or deducted by the installments). The Superintending Engineer on behalf of the Governor of Orissa shall have power to adopt any of the following courses as he may deem best suited to the interest of the Government.

To rescind the contract of which rescission notice in writing to the contractor under the hand of the S.E. shall be conclusive evidence, 20% of the value of late over work will be realized from the contractor as penalty as per Memo No.13396 dt.01.07.2005 of Works Deptt and as per OPWD.Code Vol-II page-298.

To employ labour paid by the Public Works Deptt. and to supply materials to carry out the work or any part of the work, debiting the contractor with the cost of the labour and the price of the materials (of the amount of which the cost and price certificate of the Superintending Engineer shall be final and conclusive against the contractor) and crediting him with the value of the work done in all respects in the same manner and at the same rates as if it had been carried out by the contractor under the terms of his contract, the certificate of the Superintending Engineer as to the value of the work done shall be final and conclusive against the contractor.

iii) To measure up the work of the contractor and to take such part of the work of the contract as shall be unexecuted out of his hands and to give it to another contractor to complete, in which case any expenses which may be incurred in excess of the sum which would have been paid to the original contractor if the whole work had been executed by him (of the amount of which excess the certificate in writing of the Superintending Engineer shall

be final and conclusive) shall be borne and paid by the original contractor and may be deducted from any money due to him by Govt. under the contract or otherwise or from his security deposit or the proceeds or sale thereof or a sufficient part thereof.

In the event of any of the above courses being adopted by the Superintending Engineer the contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchases or procured any material, or entered into any engagements, or made any advances on account of or with a view to, the execution of the work or the performance of the contract. And in case the contract shall be rescinded under the provision aforesaid, the contractor shall not be entitled to recover or be paid any sum of any work thereto for actually performed under this contract, unless and until the Superintending Engineer shall have certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

iv) Security deposit of the contractor shall be refunded only **twelve** months after the date of completion of the work provided that the final bill has been paid and defects, if any, rectified.

Contractor remains liable to pay compensation if action not taken under clause- 5

Clause-3 : In any case in which any of the powers, conferred upon the Superintending Engineer by clause-3 hereof shall have become exercisable and the same shall not constitute a waiver of any of the condition hereof and such powers shall not withstanding to be exercisable in the event of any future case of default by the contract of which by any clause or clauses hereof he is declared liable to pay compensation amounting to the whole of his security deposit, and the liability of the contractor for past and future compensation) shall remain unaffected. In the event of the Superintending Engineer putting in force the powers vested in him under the preceding clause he may, if he so desires, take possession of all or any tools, plants, materials and stores, in or upon the works or the site there of or belonging to the contractor or procured by him and intended to be used for the execution of the work or any part thereof, paying or allowing for the same in the account at the contract rates or in case of these not being applicable, at current market rates to be certified by the Executive Engineer whose certificate thereof shall be final,

Power to take possession of or require removal of or sell contractor's plants.

otherwise the Superintending Engineer may notice in writing to the contractor or his clerks of the works, foreman or other authorised agent required by him to remove such tools, plants, materials, or stores from the premises within time to be specified in such notice, and in the event of the contractor failing to comply with any such requisition, the Superintending Engineer may remove them by the contractor's expense or sell them by suction or private sale on account of the contractor and at his risk in all respects, and the certificate of the Superintending Engineer as to the expense of any such removal and the amount of the proceeds and expense, if any such sale shall be final and conclusive against the contractor.

Extension of time

Clause-4 : If the contractor shall desire an extension of the time for completion of the work on the ground of his having been unavoidably hindered in its execution or any other ground he shall apply in writing to the Superintending Engineer within 30 days of the date of the hindrance on account of which he desires such extension as aforesaid and the Superintending Engineer shall if in his opinion (which shall be final) reasonable grounds be shown therefore authorize such extension of time if any, as may in his opinion be necessary or proper. The Superintending Engineer shall at the same time inform the contractor whether he claims compensation for delay.

Final certificate

Clause-5 : On completion of the work, the contractor shall be furnished with a certificate by the Superintending Engineer(herein after called the Engineer-in-Charge) of such completion, but no such certificate be given nor shall the work be consider to be completed until the contractor shall have removed from the area of the premises (to be distinctly marked by the Superintending Engineer in the site plan) on which the work shall be executed, all scaffolding, surplus materials and rubbish and cleaned of the dirt from all wood work, doors, windows, walls, floor or other parts of any building in upon or about which the work

is executed, or of which he may have had possession for the purpose of the execution thereof nor until the work shall have been measured by the Officer of the Public Works Department in accordance with the rules of the department whose measurements shall be binding and against the contractor. If the contractor shall fail to comply with the requirements of this clause as to removal scaffolding, surplus materials and rubbish and cleaning off dirt on or before the date fixed for the completion of the Engineer-in-Charge may at the expense of the contractor remove such scaffolding, surplus materials and rubbish, and dispose of the same as he thinks fit and clean off such dirt as aforesaid, and the contractor shall forthwith pay the amount of all expenses incurred, and shall have no claim in respect of any such scaffolding or surplus material as aforesaid, except for any sum actually realized by the sale thereof.

Payment intermediate certificate to be regarded as advances and bill to be submitted monthly.

on

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submitted

Clause-6 : A bill shall be submitted by the contractor each month on or before the date fixed by the Engineer-in-charge or his subordinate shall take the requisite measurement for the purpose of having the same verified and the claim, as far as admissible adjusted if possible, before the expiry of ten days from the presentation of the bill. If the contractor does not submit the bill within the time fixed as aforesaid, the Engineer-in-Charge or his subordinate shall measure up the said work in the presence of the contractor whose countersignature to the measurement list will be sufficient warrant, and the Engineer-in-charge or his subordinate shall prepare all bill from such list which shall be binding on the contractor in all respects.

Provided that, if any balance of the 10% security is outstanding from each such payment shall be deducted so much not exceeding 5% as may be necessary to make up the balance of the security. All such intermediate payments to the contractor shall be regarded as payments by way of advance against the final payment only and not as payments for work actually done and completed, and shall not preclude the requiring of bad, unsound and imperfect or unskillful work to be removed and taken away and reconstructed or re-erected, or be considered as an admission of the due performance of the contractor, or any part thereof in any respect, or the accrual of any claim nor shall it conclude determine or effect in any way the powers of the Engineer-in-charge under these conditions or any of them as to the final settlement or adjustment of the accounts or otherwise or in any other way vary or affect the contract.

Clause-7: The final bill shall be prepared by the officer of the Public Works Department in accordance with the rules of the department in presence of the contractor within one month of the date fixed for completion of the work.

Stores supplied by Government

Clause-8, 8(a) & 8(b): DELETED VIDE LETTER NO.25172 DT.7.11.2014 OF D.O.W.R., GOVT.OF ODISHA.

Work to be executed in accordance with specification drawing and orders etc.

Clause-9 : The contractor shall execute the whole and every part of the work in the most substantial and workman like manner and both as regards materials and otherwise in every respect in strict accordance with the specifications. The contractor shall also confirm exactly fully and faithfully to the designs, drawing and instructions in writing relating to the work signed by the Engineer-in-charge and lodged in his office, and to which the contractor shall be entitled to have access at such office, for the purpose of the inspection during office hour and the contractor shall, if the so require be entitled at his own expense to make or cause to be made copies of the specification , and of all such designs, drawings and instructions as aforesaid.

Do not invalidate contracts.

Extension of time and consequence of alterations

Clause-10 : The Engineer-in-charge shall have power to make any alterations in or additions to the original specifications, drawings designs and instructions that may appear to him necessary and advisable during the progress of work and the contractor shall be bound to carry out the work in accordance with any instructions which may be given to him in writing signed by the Engineer-in-charge and such alteration shall not invalidate the contract, and any additional work the contractor may be directed to do in the manner above specified as part of the work shall be carried out by the contractor on the same conditions in all respects

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Rates of work not in estimate or schedule of rates of the district.

on which he agreed to do the main work, and at the same rates as are specified in the tender for the main work.

The time for the completion of the work shall be extended in the proportion that the additional work bears to the original contract work and the certificate of the Engineer-in-charge shall be conclusive as to such proportion. And if the additional work includes any class or work for which no rate is specified in this contract then such class of work shall be carried out at the rates entered in the sanctioned schedule of rates of the locality during the period when the work is being carried on and if such last mentioned class of work is not entered in the schedule of rates of the district then the contractor shall within seven days of the date of his receipt the order to carry out the work inform the Engineer-in-charge of the rate which it is his intention to charge for such class of work, and if the Engineer-in-charge does not agree to his rate he shall by notices in writing be at liberty to cancel his order carry out such class or work and arrange to carry it out in such manner as he may consider advisable.

No deviation from the specification stipulated in the contract nor additional items of work shall ordinarily be carried out by the contractor nor shall any altered, additional or substituted work be carried out by him, unless the rates of the substituted, altered or additional items have been approved and fixed in writing by the Engineer-in-charge. The contractor shall be bound to submit his claim for any additional work done during any month on or before the 15th day of the following month accompanied by a copy of the order in writing of the Engineer-in-charge for the additional work if he fails to submit his claim within the aforesaid period.

Provide always that if the contractor shall commence work or incur any expenditure in regard thereof before the rates shall have been determined as lastly herein before mentioned, in such case he shall only be entitled to be paid in respect of the work carried out or expenditure incurred by him prior to the date of the determination of the rates as aforesaid according to such rate or rates as shall be fixed by the Engineer-in-charge. In the event of a dispute, the decision of the Chief Engineer of the Project will be final.

No compensation for alteration in or restriction of work to be carried out.

Clause-11 : If any time after the commencement of the work the Government of Orissa shall for any reason whatsoever not require the whole thereof as specified in the tender to be carried out the Engineer-in-charge shall give notice in writing of the fact to the contractor who shall have no claim to any payment or compensation whatsoever on account of any profit or advantage, which he might have derived from the execution of the work in full but which he did not derive in consequence of the full amount of the work not having been carried out, neither shall he have any claim for compensation by reason of any alternation having been made in the original specification drawing, design and instruction which shall involve any curtailment of the work as originally contemplated.

Action and compensation payable in case of bad work.

Clause-12 : If it shall appear to the Engineer-in-charge or his sub-ordinate-in-charge of the work, that any work has been executed with unsound, imperfect or unskillful workmanship or with materials of any inferior description or that any materials or articles provided by him for the execution of the work are unsound or of a quality inferior to that contracted for or otherwise not in accordance with the contract, the contractor shall on demand in writing from the Engineer-in-charge specifying the work materials or articles complained of notwithstanding that the same may have been inadvertently passed certified and paid for, forthwith rectify or remove or reconstruct the work so specified in whole or in part, as the case may require or as the case may be remove the materials or articles so specified and provide other proper and suitable materials or articles at his own proper charge and cost and in the event of his failing to do so within a period to be specified by the Engineer-in-charge in his demand aforesaid, then the contractor shall be liable to pay compensation at the rate of one percent on the amount of the estimate for every day not exceeding ten days, while his failure the Engineer-in-charge may rectify or remove and replace with others, the materials or articles complained of as the case may be at the risk and expense in all respects of the contractor.

Work to be opened to inspection

Clause- 13: All work under or in course of execution or executed in pursuance of the contract shall at all times be opened to the inspection and supervisions of the Engineer-in-

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Contractor or responsible agents to be present.	charge and his subordinates and the contractor shall at all times during the usual working hours and at all other times at which reasonable notice of the inspection of the Engineer-in-charge or his subordinates to visit the works shall have been given to the contractor either himself be present to receive orders and instruction or have a responsible eager to duly accredited in writing present for that purposes. Order given the contractor's agent shall be considered to have the same force as if they had been given to the contractor himself.
Notice to be given before work is covered up	Clause-14 : The contractor shall give not less than five day's notice in writing to the work before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimensions thereof be taken before the same may be measured and correct dimensions thereof be taken before the same is so covered up or placed beyond the reach of measurement, any work without the consent in writing of the Engineer-in-charge of the work and if any work shall be covered up or placed beyond the reach of measurement without such notice having been given or consent obtained, the same shall be uncovered at contractor's expense, or in default thereof on payment or allowance shall be made for such work or the materials with which the same was executed.
Contractor liable for damage done and or imperfection for 3 months after certificates.	Clause-15 : If the contractor or his work people, or servants shall break, deface, injure or destroy any part of a building, in which they may be working or any building, road, fence, enclosure, or grass land, or cultivated ground contiguous to the premises on which the work or any part of it is being executed or if any damage shall happen to the work, while in progress from any cause whatever or any imperfection became apparent in it within three months from the date of final certificate of its completions shall have been given by the Engineer-in-charge, as aforesaid, the contractor shall make the same good at his own expense, or in default, the Engineer-in-charge may cause the same to be made good by other workmen, and deducted the expense (of which the certificate of the Engineer-in-charge shall be final) from any sums that may be then, or any time thereafter may become due to the contractor, or from his security deposit or the proceeds of sale thereof, or of a sufficient portion thereof and the contractor shall be liable to pay any part of the expenses not so recovered by the Engineer-in-charge.
Contractor to supply plant, ladders, scaffoldings etc.	Clause-16 : The contractor shall supply at his own cost all materials (except such special, if any, as may in accordance with contract, be supplied from the Engineer-in-charge's stores) plants tools appliances, implements, ladders, cordage, tackle, scaffolding and temporary works requisite for the proper execution of the work, whether original, altered or substituted, and whether included in the specification or other documents forming part of the contract or referred to in these conditions or not or which may be necessary of the purpose of satisfying or complying with the requirement of the Engineer-in-charge as to any matter as to which under these conditions he is entitled to be satisfied which he is entitled to require together with carriage therefore to and from the work. The contractor shall also supply without charge the requisite number of persons with the means & materials necessary for the purpose of setting out works, and counting, weighing and assisting in the measurement or examination at anytime and from time to time of the work or materials. Falling his so doing the same may be provided by the Engineer-in-charge at the expense of the contractor and the expenses may be deducted from any money due to the contractor under the contract, or from his security deposit or the proceeds of sale thereof, or of a sufficient portion thereof. The contract shall also provide all necessary fencing and light required to protect the public from accident and shall be bound to bear the expenses of defence of every suit, action or other proceedings at law that may be brought by any person for injury sustained owing to neglect of the above precautions, and to pay any damages and cost which may be awarded in any such suit, action or proceeding to any such person or which may with the consent of the contractor be paid to compromise any claim by any such person.
And is liable for damages arising from non provision of lights, fencing etc.	Clause-17(a) : No female labour shall be employed within the limits of cantonment. The contractor shall not employ for the purpose of this contract any person who is below the age of twelve years and shall pay to each labour wages not less than the wages paid for seminal work in the neighborhood. The Superintending Engineer shall have the right to enquire into and decide any complaint alleging that the wages paid by the contractor to any labour for the work done by

such labour is less than the wages paid for similar work in the neighborhood.

The Officer-in-charge of the work shall have the right to decide whether any labour employed by the contractor is below the age of twelve years and to refuse to allow any labour whom he decides to be below the age of twelve years to be employed by the contractor.

Clause-17(b) The contractor shall employ one or more Engineering Graduates or Diploma holders as apprentices at his own cost if the work as shown in the tender exceeds Rs. 1,50,00,000/- 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 be not less than Rs... the emolument of personnel or equivalent qualification employed under Government. The number of apprentices to be employed should be fixed by the Chief Engineer in a manner so that the total the total expenditure does not exceed one percent of the tendered cost of the work.

Clause-17(c) AMENDMENT MADE IN WORKS DEPT. NO. CODES

M-22/91-15384/9.7.93

Super Class/ Special Class contractor shall employ under him one Graduate Engineer and two Diploma Holders 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 of the personnel of equivalent qualification employed under the State Government of Orissa. The Engineer-in-Chief, R&B, Orissa may however, assist the contractor with names of such unemployed Graduate Engineers and Diploma Holders. If such engineer personnel appointed by the contractors should be intimated to the tender receiving authority along with the tender.

Each bill of the Super Class/Special Class and 'A' class contractor shall be accompanied by an employment roll of the engineering personnel together with a certificate of the graduate engineer or diploma holder as employed by the contractor to the effect that the work executed as per the bill has been supervised by him.

Work not to be sublet

Clause- 18: The contractor shall not be assigned or sublet without the written approval of the Executive Engineer. And if the contractor shall assign or sublet his contract, or attempt to do so or become insolvent or commence any insolvency proceeding or make any composition with his creditor, or attempts to do so, or if any bribe, gratuity, gift, loan, perquisite reward or advantage, pecuniary or otherwise, shall either directly or indirectly be given promised or offered by the contractor or any of his servants or agents to any public officer or person in the employ of Government in any way relating to his office or employment, or if any such officer or person shall become in any way directly or indirectly interested in the contract, the Superintending Engineer may thereupon by notice in writing rescind the contract and the security deposit of the contractor shall thereupon stand forfeited and be absolutely at the disposal of Government and the same consequences shall ensue as if the contract had been rescinded under clause- 2(b) hereof, and in addition the contractor shall not be entitled to recover or be paid for any work therefore actually performed under the contract.

Contractor may be rescinded and security deposit forfeited for subletting bribing or if contractor becomes insolvent.

Sum of payable by way of compensation to be considered as a reasonable compensation without reference to actual loss.

Clause-19: All sums payable by way of compensation under any of these conditions shall be considered as reasonable compensation to be applied to the use of Government without reference to the actual loss or damage sustained, and whether or not any damage shall have been sustained.

Changes in constitution of firm

Clause-20: In the case of tender by partners, any change in the constitution of the firm shall be forthwith notified by the contractor to the Engineer-in-charge for his information.

In case of failure to notify the change in the constitution within fifteen days, the Engineer-

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in-charge may by notice in writing rescind the contracts and the security deposit of the contractor shall thereupon stand forfeited and be absolutely at the disposal of Government and the same consequences shall ensue as if the contract had been rescinded under clause-2(b) hereof and in addition the contractor shall not be entitled to recover or be paid for any works thereof actually performed under the contract.

Clause-21: All work to be executed under the contract shall be executed under the direction and subject to the approval in all respects of the Chief Engineer of the Project for the time being who shall be entitled to direct at what point or points and in what manner they are to be commenced and from time to time carried on.

Clause-22: Deleted.

Lump sums in estimates

Clause-23: When the estimate on which a tender is made include lump sums in respect of parts of the work the contractor shall be entitled to payment in respect of the items of work involved or the part of the work in question at the same rates as are payable under this contract for such items, or if the part of the work in question is not in the opinion of the Engineer-in-charge capable of measurement, the Engineer-in-charge may by his discretion pay the lump sum amounts entered in the estimate and the certificate in writing of the Engineer-in-charge shall be final and conclusive against the contractor with regard to any sum or sums payable to him under the provisions of this clause.

Action where no specification.

Clause-24: In the case of any class of work for which there is no such specification as is mentioned in rule-1 such work shall be carried out in accordance with the circle specification and in the event of there being no circle specification, then in such case the work shall be carried out in all respects in accordance with the instructions and requirements of the Engineer-in-charge.

Definition of works

Clause-25: The expression "works" or "work" used in these conditions shall unless there be something either in the subject or context repugnant to such construction, be constructed and taken to mean the works by or by virtue of the contract contracted to be executed, whether temporary or permanent, and whether original, altered, substituted or additional.

Clause-26: Government shall be entitled to recover in full from the contractor any amount that the Government may be liable to pay under Workmen's Compensation Act VIII of 1923 to any workman employed in course of execution of any part of the work covered by these contract.

Clause-27: That the purpose of jurisdiction in the event of dispute if any the contract should be deemed to have been entered into within the State of Orissa and it is agreed that neither party to the contract nor agreement will be competent to bring a suit in regard to the matters covered by this contract at any place outside the state of Orissa.

Clause-28: The department will have the right to inspect the scaffolding and centering made for the work and can reject partly or fully such structure if found defective in their opinion.

Clause-29: Sanitary arrangements will be made by the contractor at his own cost for his labour camp.

Clause- 30: The contractor shall bear all taxes including sales tax, income tax, fair-weather charges and tollage, where necessary.

Clause-31

Annexure-A

31.1: Contract price shall be adjusted for increase or decrease in rates and price of labour, materials, fuels and lubricants in accordance with the following principles and procedures and as per formula given in following paragraphs.

(a) the price adjustment shall apply for the work done from the start date given in the contract data up to end of the initial intended completion date or extensions granted by the Engineer and shall not apply to the work carried out beyond the stipulated time for reasons attributable to the contractor.

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(b) the price adjustment shall be determined during each month from the formula given in following paragraphs.

(c) Following expressions and meanings are assigned to the work done during each month:

R= Total value of work done during the month. It would include the amount of secured advance granted, if any, during the month, less the amount of secured advance recovered, if any during the month. It will exclude value for works executed for extra items under variations.

31.2: To the extent that full compensation for any rise or fall in costs to the contractor is not covered by the provisions of this or other clauses in the contract, the unit rates and prices included in the contract shall be deemed to include amounts to cover the contingency of such other rise or fall in costs.

The formula (e) for adjustment of prices are:

31(a)(i): Adjustment of Other Materials Component

Price adjustment for increase or decrease in cost of local materials other than cement, steel, bitumen, pipe and POL procured by the contractor shall be paid in accordance with the following formula:

$$V_M = 0.85 \times P_m / 100 \times R \times (M_1 - M_0) / M_0$$

V_M = Increase or decrease in the cost of work during the month under consideration due to changes in rates for local materials other than cement, steel, bitumen and POL

M_0 = The all India wholesale price index (all commodities) on 28 days preceding the date of opening of Bids as published by the Ministry of Commerce and Industry, Government of India, New Delhi.

M_1 = The all India wholesale price index (all commodities) for the month under consideration as published by the Ministry of Commerce and Industry, government of India, New Delhi.

P_m = Percentage of local material component (other than cement, steel, bitumen and POL) of the work.

31(a)(ii): Adjustment for Cement Component

Price adjustment for increase or decrease in cost of cement procured by the contractor shall be paid in accordance with the following formula:

$$V_C = 0.85 \times P_c / 100 \times R \times (C_1 - C_0) / C_0$$

V_C = Increase or decrease in the cost of work during the month under consideration due to changes in rates for cement

C_0 = The all India wholesale price index for Ordinary Portland cement (OPC) on 28 days preceding the date of opening of Bids as published by the Ministry of Commerce and Industry, Government of India, New Delhi.

C_1 = The all India wholesale price index for Ordinary Portland Cement (OPC) for the month under consideration as published by the Ministry of Commerce and Industry, government of India, New Delhi.

P_c = Percentage of Cement component of the work.

31(a)(iii): Adjustment for Steel Component

Price adjustment for increase or decrease in cost of Steel procured by the contractor shall be paid in accordance with the following formula:

$$V_S = 0.85 \times P_s / 100 \times R \times (S_1 - S_0) / S_0$$

V_S = Increase or decrease in the cost of work during the month under consideration due to

changes in rates for Steel

S₀= The all India wholesale price index for Steel (Mild Steel long products) on 28 days preceding the date of opening of Bids as published by the Ministry of Commerce and Industry, Government of India, New Delhi.

S₁= The all India wholesale price index for Steel (Mild Steel long products) for the month under consideration as published by the Ministry of Commerce and Industry, government of India, New Delhi.

P_c= Percentage of Steel component of the work.

Note: For the application of this clause, index of (Mild Steel long products) has been chosen to represent steel group.

31(a)(iv): Adjustment of Bitumen Component

Price adjustment for increase or decrease in cost of Bitumen shall be paid in accordance with the following formula:

$$V_b = 0.85 \times P_b / 100 \times R \times (B_1 - B_0) / B_0$$

V_b= Increase or decrease in the cost of work during the month under consideration due to changes in rates for Bitumen

B₀= The official retail price of bulk bitumen at the IOC/BPCL depot at nearest center on the day 28 days prior to date of opening of Bids.

B₁= The official retail price of bulk bitumen at the IOC/BPCL depot at nearest center for the 15th day of the month under consideration.

P_b= Percentage of Bitumen component of the work.

31(a)(v): Adjustment towards differential cost of Pipes

Price adjustment for increase or decrease in cost of Pipe shall be paid in accordance with the following formula:

$$V_{pi} = 0.85 \times P_i / 100 \times R \times (P_{i1} - P_{i0}) / P_{i0}$$

V_{pi}= Differential cost of pipe i.e. amount of increase or decrease in rupees to be paid or recovered during the month under consideration.

P_{pi}= Percentage of pipe component of the work.

P_{i1}= All India wholesale price index of pipe for the period under consideration as published by the Ministry of Commerce and Industry, government of India, New Delhi.

P_{i0}= All India wholesale price index of pipe on 28 days preceding the date of opening of Bids as published by the Ministry of Commerce and Industry, Government of India, New Delhi.

31(b): Adjustment of Labour Component

Price adjustment for increase or decrease in cost of due to labour shall be paid in accordance with the following formula:

$$V_L = 0.85 \times P_1 / 100 \times R \times (L_1 - L_0) / L_0$$

V_L= Increase or decrease in the cost of work during the month under consideration due to changes in rates for local labour

L₀= The minimum wages for unskilled labour as notified by Government of Odisha as prevailed on the last stipulated date of receipt of tender including extension, if any

L₁= The minimum wages for unskilled labour as notified by Government of Odisha as prevailed on the last date of the month previous to the one under consideration.

P₁= Percentage of Labour component of the work.

31(c): Adjustment of POL (Fuel and lubricant) Component

Price adjustment for increase or decrease in cost of POL (Fuel and lubricant) shall be paid in accordance with the following formula:

$$V_f = 0.85 \times P_f / 100 \times R \times (F_1 - F_0) / F_0$$

V_f = Increase or decrease in the cost of work during the month under consideration due to changes in rates for fuel and lubricant

F_0 = The official retail price of High speed Diesel (HSD) at the existing consumer pumps of IOC /BPCL/HPCL at nearest center on the day 28 days prior to the date of opening of Bid.

F_1 = The official retail price of HSD at the existing consumer pumps of IOC /BPCL/HPCL at nearest center for the 15th day of the month under consideration.

P_1 = Percentage of fuel and lubricants component of the work.

Note: For the application of this clause, the price of High speed Diesel oil has been chosen to represent fuel and lubricant group.

31 (d) : Adjustment for Plant and Machinery Spares Component

i) Price adjustment for increase or decrease in the cost off plant and machinery spares procured by the Contractor shat be paid in accordance with the following formula.

$$V_p = 0.85 \times P_p / 100 \times R \times (P_1 - P_0) / P_0$$

V_p :- Increase or decrease in the cost of work during the month under consideration due to changes in the rates for plant and machinery spares.

P_0 :- The all India wholesale price index for manufacture of machinery for mining, quarrying and construction on 28 days, preceding the date of opening of Bids as published by the Ministry of Commerce and Industry, Government of India, New Delhi.

P_1 :- The all India wholesale price index for manufacture of machinery for mining, quarrying and construction for the month under consideration as published by the Ministry of Commerce and Industry, Government of India, New Delhi.

P_p :- Percentage of plant and machinery spares component of the work.

Note : For the application of this clause, index of manufacturing of machinery for mining, quarrying and construction has been chosen to represent the plant and machinery Spares group.

Regarding wholesale price index (WPI) for appropriate commodity for payment of price adjustment, due to change of base year of WPI from 1993-94 to 2004-05 & 2011-12. It is observed that the commodity 'Bars and Rod', Cement, 'Heavy machinery and parts' include in the list of WPI 1993-94 series are not mentioned as such in the WPI 2004-05 & 2011-12 series. Therefore, the following items in WPI 2004-05 & 2011-12 series shall be considered corresponding to items in WPI 1993-94 series.

Sl. No.	Item in WPI 1993-94 Series	Item in WPI 2004-05 Series	Item in WPI 2011-12 Series
1.	Cement	Grey Cement	Ordinary Port land cement
2.	Bars & Rods	Rebars	Mild steel long products
3.	Heavy machinery & parts	Construction Machinery	Manufacture of machinery or mining, quarrying & construction

31 (e) : APPLICATION OF ESCALATION CLAUSE:

The contractor shall for the purpose of availing reimbursement refund of differential cost of

steel, bitumen, cement, pipe, POL and wages 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 representative of Government and further shall at the request of the Engineer-in-charge may require any documents and information kept. The contractor shall within a reasonable time of 15 days of his becoming aware of any alternation in the price of such materials, 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 along with information relating to there to which he may be in a position to supply.

Percentage Table

Sl. No	Category of works		% Component (cost wise)		
			Labour (P ₁)	POL (P ₁)	Steel (P ₁) + Cement (P _c) + Bitumen (P ₀) + Pipes (P _p) + Plant & Machinery, spare & Component(P ₀) + Other Materials)
1	R&B works (% of component)	Road works	5	5	90
		Bridge works	5	5	90
		Building works	5	5	90
2	Irrigation works (% of component)	Structural work	5	5	90
		Earth, canal & embankment works	5	5	90
	P.H. works (% of component)	Structural work	5	5	90
		Pipeline work	5	5	<u>Pipe-70%</u> *Machinery + Other materials-20%
		Sewer line	5	5	<u>Pipe-70%</u> *Machinery + Other materials-20%

Note: Further break up may be worked out considering the consumption of cement, steel, bitumen, pipe and Plant & Machinery, spare component in the concerned works and shall be provided in the bid document in shape of "Schedule of Adjustment Data" as an "Appendix to bid" (enclosed here with).

Appendix to Bid

Schedule of Adjustment Data

(For all works, adjustment factor for Labour and POL shall be considered @ 5% each Steel, cement, pipes, other Materials and Machinery shall contribute to 90% of Price Adjustment and shall be calculated for each work separately during preparation of estimate shall be approved by the authority during technical sanction as a "Schedule of Adjustment Data" and shall form part of the Bid Document) (As Per office Memorandum No- 1739/ dated 03.02.2023 of Works Department, Govt. of Odisha)

Cl.No.31 of F2/P1 contracts	Index description	Source of index	Base value	Base Date	Weight age of item
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Sl.No					
31(a)(i)	Other materials	All India Wholesale price index (all commodities) as published by the Economic Advisor to the Govt. of India, Ministry of Commerce and Industry)			
31(a)(ii)	Cement	Wholesale price index for cement (Ordinary Portland cement) as published by the office of the Economic Advisor to the Govt. of India, Ministry of Commerce and Industry)			
31(a)(iii)	Steel	Wholesale price index for Steel (Mild Steel-long products) as published by the office of the Economic Advisor to the Govt. of India, Ministry of Commerce and Industry)			
31(a)(iv)	Bitumen (VG-30)	Official retail price of bulk bitumen at the nearest IOC/HPCL depot			
31(a)(v)	Pipes	Wholesale price index for the type of pipe under consideration as published by the office of the Economic Advisor to the Govt. of India, Ministry of Commerce and Industry)			
31(b)	Labour	Minimum Wage notified by the Labour and Employee's State Insurance Department of government of Odisha, India			5%
31(c)	P.O.L.	Official retail price of HSD at the nearest IOCL/HPCL/BPCL Consumer pump depot			5%
31(d)	Plant & Machinery	Wholesale price index for manufacture of Machinery for Mining, Quarrying and Construction as published by the office of the Economic Advisor to the Govt. of India, Ministry of Commerce and Industry)			
			Total		100%

*Value to be filled up at the time of drawl of contract

*Values to be filled up in the bid document.

	Clause –32 :- After the work is finished all surplus materials and debris are to be removed by the contractor and preliminary works such as vats, mixing platforms, etc are to be dismantled and all materials removed from site. The ground up to 100'-0" wide from the building should be cleared and dressed.
<u>FAIR WAGE CLAUSE</u>	
	Clause-33 (a):- The contractor shall not employ for the purpose of this Contract any person who is below the age of twelve years and shall pay to each labourer for work done by such labours fair wages.
	Explanation: - "Fair Wage" means wages, whether for time or piece work prescribed by the State Public Works Department provided that where higher rates have been prescribed under the Minimum Wages Act 1948 wages at such higher rates should constitute fair wages.
	The Superintending Engineer shall have the right to enquire into and decide any complaints alleging that wages paid by the contractors to any labourer for work done by such labourer is less than the wages as per the sub-paragraph (1) above.

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	(b): The contractor shall not with standing the provisions of any contract to contrary, cause to be paid a fair wage to labourers indirectly engaged on the work including any labour engaged by his sub-contractors in connection with the said work as if the labourers had been immediately employed by him.
	©: In respect of all labour directly or indirectly employed in the work for the performance of the contractor's part of this agreement the contractor shall comply with or cause to be complied with all regulations made by Government in regard to payment of wages, wage period productions from wages, recovery of wages not paid, and deductions unauthorisedly made, maintenance of wage register, wage cards, publication of scale of wages and other terms of employment, inspection and submission of periodical return and all other matters of like nature.
	(d) : The Superintending Engineer or Sub Divisional Officer concerned shall have the right to deduct from the money due to the contractor, any sum, required or estimated to be required for making good the loss suffered by a worker or workers by reason of non fulfillment of condition of the contract for the benefit of the workers nonpayment of wages or of deductions made from his or their wages, which are not justified by their terms of the contract or non observance of the regulations. Money so deducted should be transferred to the workers concerned.
	(e) Vis-à-vis the Government of Orissa, the contractor shall be primarily liable for all payment to be made under and for the observance of the regulation aforesaid without prejudice to his right to claim indemnity from his sub contractor.
	(f) The regulations aforesaid shall be deemed to be part of this contract and any breach thereof shall be breach of the contract.
	(g) Under the provision of the Minimum Wages Act, 1948 and the minimum wages (Central Rules, 1950) the contractor is bound to allow or cause to be allow to the labourers directly or indirectly employed in the works one day rest for six days continuous work and pay wages at the same rate as for duty. In the event of default, the Superintending Engineeror Sub-Divisional Officer concerned shall have the right to deduct the sum not paid on account of wages for weekly holiday to any labourers, and pay the same to the persons entitled there to from any money due to the contractor.
	(h) The Contractor shall at his own expense provide or arrange for the provision of foot wear for any labour during cement mixing work and blacktopping of roads. (The contractor has undertaken to execute under this contract) to the satisfaction of the Engineer-in-charge, and on his failure to do so Government shall be entitled to provide the same and recover the cost from the contractor.
	(i) The contractor shall submit by the 4th and 10th of every month, to the Engineer-in-charge a true statement showing in respect of the Second half of the preceding month and the first half of the current month respectively (1) the number of labours employed by him on the work (2) their working hours (3) the wages paid to them (4) the accident that occurred during the said fortnight showing the circumstances under which they happened and the content of damage and injury caused by them and (5) the number of female workers who have been allowed maternity benefit according the clause (K) and the amount paid to them, failing which the contractor shall be liable to pay to Government a sum not exceeding Rs. 50/- for each default of materials in correct statement. The decision of the Superintending Engineer shall be final in deducting from any bill due to contractor, amount levied as fine.
	(j) In respect of all labour directly or indirectly employed in the works for the performance of the contractor's part of this agreement, the contractor shall comply with a cause to be complied with all the rules framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by the Orissa Public Works department and its contractors. This will apply to work places having 50 or more workers.
	(k) Maternity benefit rules for female workers employed by contractor. Leave and pay during leave shall be regulated as follows:

1. Leave: (i) In case of Delivery:- Maternity leave not exceeding 8 weeks, 4 weeks up to including the day of delivery and 4 weeks following that day.

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(ii) In case of Miscarriage: - Upto 3 weeks from the date of miscarriage.

2. Pay: (i) In case of Delivery: - Leave pay during maternity leave will at the rate of the women's average daily earnings calculated on the total wages earned on the days when full time work was done during a period of three months immediately preceding the day of which she gives notice that she expects to be confined or at the rate of twelve annals a day whichever is greater.
(ii) In case of Miscarriage:- Leave pay at the rate of average daily earning calculated on the total wages earned on the days full time work was done during a period of 3 months immediately preceding the date of such miscarriage.

Condition of the grant of Maternity Leave: - No maternity leave benefit shall be admissible to women unless she has been employed for a total period not less than 6 months immediately preceding the date on which she proceeds on leave.

Model Rules for Health and Sanitary Arrangements for Workers Employed by Orissa P.W.D. or 1st Contractors.

1. Application: These rules shall apply to all construction work-in-charge of Orissa Public Works Department which are expected to continue for a year or more.
2. Definitions:
 - I.) "Work Place" means a place at which averages of fifty or more workers are employed in connection with construction work.
 - II.) Large work place means at which an average of 500 or more workers are employed in connection with construction work.
3. First Aid:
 - (a) At every work place, there shall be maintained in a readily accessible place first-aid appliances including and adequate supply of sterilizer dressing and sterilized cotton wool. The appliances shall be kept in good order and in large work place they shall be readily available during working hours.
 - (b) At large work places, where hospital facilities are not available within easy distance of the workers, first aid posts shall be established and run by a trained compounder.
 - (c) Where large work places are remote from regular hospitals an indoor ward shall be provided with one bed for every 250 employees.
 - (d) Where large work places are situated in cities, towns or in their suburbs and no beds are considered necessary owing to the proximity of city, town hospitals, an ambulance shall be provided to facilitate removal of urgent cases to these hospital. At the work place, some conveyance facilities such as car shall be kept readily available to take injured person or persons suddenly taken seriously ill to the nearest hospitals.
4. Drinking Water:-
 - (a) In every work place, there shall be provided and maintained at suitable places, easily accessible to labour, a sufficient supply of water fit for drinking.
 - (b) Where drinking water is obtained from an intermittent public water supply, each work place shall be provided with storage where such drinking water shall be stored.
 - (c) Every water supply of storage shall be at a distance of not less than 50 feet from any latrine, drain or other source of pollution. Where water has to be drawn from an existing well which is within such proximity of latrine drain or any other source of pollution, the well shall be properly chlorinated before

- water is drawn from it for drinking. All such wells such be entirely closed in and be provided with a trap door which shall be dust and water proof.
- (d) A reliable pump shall be fitted to each covered well, the trap door shall be kept locked and opened only for cleaning or inspection which shall be done at least once a month.
 - (e) The temperature of drinking water supplied to workers shall not exceed 90° F
5. Washing and Bathing Place:-
- (i) Adequate washing and bathing places shall be provided separately for men and women.
 - (ii) Such places shall be kept in clean and drain condition.
6. Scale of Accommodation in Latrines and Urinals:- There shall be provided within the premises of every work place latrines and urinals in an accessible place, the accommodation separately for each of them shall not be less than the following.
- | | |
|--|-----------------------|
| (a) Where the number of persons employed exceeds 50 | No. of Seats 1. |
| (b) Where the number of persons employed exceeds 50
But does not exceed 100 | No of Seats 3 |
| (c) For every additional 100 | No of Seats 3 per 100 |
- (In particular cases, the Superintending Engineer shall have the power to vary the scale where necessary)
7. Latrines and Urinals of women: - If women are employed, separate latrines and urinals separate from that for women and marked in the vernacular in conspicuous latter "for women only" shall be provided on the scale laid in rule. Those for shall be similarly marked "for men only". A poster showing that figure of a men and women shall also be exhibited at the entrance of latrines for each sex. There shall be adequate supply of water close to the urinals and latrines.
8. Latrines and Urinals: Except in work place provided with water flushed latrines connected with a water borne sewerage system, all latrines shall be provided with receptable on dry earthen system which shall be cleaned at least four times daily and at least twice during working hours and kept in a strictly sanitary condition. The receptable shall be tarred inside and outside at least once a year.
9. Constructions of Latrines: The inside wall shall constructed for masonry of stone materials and shall be cement washed inside and outside at least once a year. The dates of cement washing shall be noted in register maintained for this purpose and kept available for inspection.
10. Disposal of Excreta: Unless otherwise arranged for by the local sanitary authorities, arrangements for proper disposal of excreta by incinerator at the work place be made by means of a suitable incineration approved by Asst. Director of Public Health or Municipal Medical Officer of Health as the case may be, in whose jurisdiction the work place is situated. Alternatively, excreta may be disposed off by putting a layer of night soil at the bottom of pucca tank prepared for the purpose and covering it with 6" layer of waste of refuse and then covering it up with a layer of earth for a fortnight (when it will turn into manure)
11. Provision of shelters during rest:- At every work place, there shall be provided free of cost two suitable sheds one for meals and the other for rest for the use of labourers. The height of the shelter shall not be less than 11 feet from the floor level to the lowest part of the roof.
- 12. Crèche:**
- (a) At every work place at which more than 50 women workers are employed, there shall be provided only one hut for the use of children under the age of 6 years,

belonging to such women and shall be used for infant's games and play and their bed room, the huts shall not be constructed on a lower standard than the following:-

- (i) Thatched roofs.
- (ii) Mud floors and walls
- (iii) Planks spared over the mud floor and covered with matting.

The hut shall be provided with suitable and sufficient opening for light and ventilation. There shall be adequate provision for sweepers to keep the place clean. There shall be two days in attendance sanitary utensils shall be provided to the satisfaction of the Health Officer of the area concerned. The use of the hut shall be restricted to children, their attendants and mothers of the children.

- (b) Where the number of women workers is more than 50 the contractor shall provide one hut and Dhai to look after the children of women workers.
- (c) The size of crèche shall vary according to the number of women workers.
- (d) The crèche shall be properly maintained and necessary equipment like toys etc shall be provided.

13. Canteen: A cooked food canteen on a moderate shall be provided for the benefit of workers whenever it is considered expedient.

ORISSA P.W.D. ELECTRICITY DEPARTMENT CONTRACTOR'S LABOUR REGULATION	
1.	Short Title- These regulations may be called 'The Orissa Public Works Department/Electricity Department Contractor's regulations.
2.	Definitions- In these Regulations, unless otherwise expressed or indicated the following words and expression shall have the meaning hereto assigned to them respectively, that is to say :-
	(i) "Labour" mean workers employed by a contractor of the Orissa Public Works Department/Electricity Department directly or indirectly through a sub contractor or other person by an agent on his behalf.
	(ii) "Fair Wages" means wages whether for the time or piece work prescribed by the State Public Works Department E.S. for the area in which the work is done.
	(iii) "Contractor" shall include every person whether a sub contractor or headman or agent employing labour on the work taken on contract.
	(iv) "Wages" shall have the same meaning as defined in the payment of wages Act and include time and piece rate wages, if any.
3.	Display of notices regarding wages:-
	The contractor shall :- (a) Before he commences his work on contract display and correctly maintain and continue to display and correctly maintain in a clean and legible condition in conspicuous places on the work notice in English and in the local Indian language spoken by the majority of the worker's giving the rate of wage prescribed by the State Public Works Department/Electricity Department for the district which the work is done.

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	(b) Send a copy of such notices to the Engineer-in-charge of the work.
4.	Payment of wages:-
	(1) Wages due to every worker shall be paid to him direct.
	(2) All wages shall be paid in current coin or currency or in both.
5.	Fixation of wage period:-
	(i) The contractor shall fix the wage period in respect of which the wages be payable.
	(ii) No wage period shall exceed one month.
	(ii) Wages of every workman employed on the contract shall be paid before the expiry of ten days, after the last day of the wage period in respect of which the wages are payable.
	All payments of wages shall be made on a working day.
6.	Wage book and wages cards, etc.
	1) The contractor shall maintain a wage book of each worker in such form as may be convenient, but the same shall include the following particulars:-
	(a) Rate of daily or monthly wages
	(b) Nature of works on which employed
	(c) Total number of days work during each wage period.
	(d) Total amount payable for the work during each wage period.
	(e) All deductions made from the wage with an indication in each case of the ground for which the deduction is made.
	(f) Wage actually paid for each wage period.
	2) The contractor shall also maintain a wage card for each worker employed on the work.
	3) The Superintending Engineer may grant an exemption from the maintenance of wage bond, wage cards to a contractor who, in his opinion may not directly or indirectly employ more than 100 persons on the work.
7.	Fines deduction which may be made from wages.
	1) The wages of a worker shall be paid to him without any deduction of any kind except the following:-
	(a) Fines
	(b) Deduction for absence from duty; from the place or places where by the terms of his employment he is required to work. The amount of deductions shall be in proportion to the period for which he was absent.
	(c) Deduction for damage to or loss of good expressly entrusted to the employed person for custody or for loss of money for which he is required to account where such damages or loss is directly attributable to his neglect or default.
	(d) Any other deductions which the Orissa Government may from time to time allow.
	2) No fines shall be imposed on a worker and no deduction for damage or loss shall be made from his wages until the worker has been given an opportunity of showing cause against such fines or deduction.
	3) The total amount of fines which may be imposed in any one wage period on a work shall not exceed an amount equal to five paise in a rupee of the wages payable to him in respect of

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	that wage period.
	4) No fine imposed on any worker shall be recovered from him by installments, or after the expiry of 60 days from the date on which it was imposed.
8.	Register of fines, etc.
	1) The contractor shall maintain a register of fines and of all deductions for damage or loss. Such Register shall mention the reason for which fine was imposed or deduction for damage or loss was made.
	2) The Contractor shall maintain a list in English and in the local Indian language, clearly defining acts and commissions for which penalty or fine can be imposed. It shall display such list and maintain it in a clean and legible condition in conspicuous places in the work.
9.	Preservation of Register:-
	The wage register, the wage cards and the register of fines, deduction required to be maintained under these regulation shall be preserved for 12 months after date of the last entry made in them.
10.	Powers of Labour Welfare Officer to make investigation or enquiry.
	The Labour Welfare Officer or any other person authorised by the Government of Orissa on their behalf shall have power to make enquiries with a view to ascertaining and enforcing due and proper observance of the fair wage clauses and the provisions of these regulation. He shall investigate into any complaint regarding default made by the contractor, sub-contractor in regard to such provisions.
11.	Report of Labour Welfare Officer:- The Labour Welfare Officers or others authorised as aforesaid shall submit a report of the results of his investigation or enquiry to the Superintending Engineer concerned, indicating the extent, if any to which the default has been committed with a note that necessary deductions from the contractor's bill be made and the wages and other dues be paid to the labourers concerned.
12.	Appeal against the decision of Labour Welfare Officers:- Any persons aggrieved by the decision and recommendation of the Labour Welfare Officer or other person so authorised may appeal against such decision to the Labour Commissioner within 30 days from the date of decision forwarding simultaneously a copy of his appeal to the Superintending Engineer concerned but subject to such appeal, the decision of the officer shall be final and binding upon the contractor.
14.	Submission of return:- The contractor shall submit periodical returns as may be specified from time to time.
15.	Amendments:- The Government of Orissa may from time to time, add to or amend these regulations and on any question as to the application, interpretation of effect of these regulations, the decision of the Labour Commissioner or any other person authorised by the Government of Orissa in that behalf shall be final.
Clause:-34 The terms and conditions of the agreements have been read/ explained to me/us and I/we certify that I/we clearly understand them.	

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Schedule showing (approximately) materials to be supplied if available, the rates which they are to be charged for and the places at which are to be supplied.

Particulars	Rates at which the materials will be charged to the Contractor.		Place of Delivery
	Unit	Rs. P.	

Note: - The person or Firm submitted the tender should see that the rates in above schedule are filled up by the Engineer-in-charge on the issue of the form prior to the submission of the tender.

SPECIAL CONDITIONS

1. All materials required for giving profile will be arranged by the contractor at his own cost and responsibility.
2. Land required for borrow area, dumping yard & storage of materials will be arranged by the Contractor at his own cost and responsibility if departmental land is not available.
3. Dewatering if required, during execution will be done by the Contractor at his own cost and responsibility.
4. The length and section of reinforcement after it is put in position as per design will be measured for the purpose of payment excluding weight of binding wire.
5. Water for execution will be arranged by the Contractor at his own cost and responsibility.
6. Concrete should be vibrated with mechanical vibrator.
7. Shuttering materials (frame work) etc. should be returned to the department without any damage, if supplied by the department.
8. It must be definitely understood that the Government do not accept any responsibility for the correctness and completeness of the trial boring shown in the cross sections.
9. Cement shall be used by bags and weight of one bag of cement being taken as 50kg or weight of one cubic meter of cement to be taken as 14.30 quintals.
10. The contractor should have enough technically skilled persons for supervision of the work.
11. All borrow pits for earth work should be at least 30 feet away from the toe of the canal embankment.
12. The seat of embankment will be ploughed 6" deep before earth is put for which no extra payment will be made.
13. No claim whatsoever on account of interest will be entertained under any circumstances.
14. The work will be executed as per Orissa Detailed Standard Specifications and as per the instructions of Engineer-in-charge.
15. Borrowed earth approved by the Engineer-in-Charge should be used in the work.
16. The contractor will make his own cost for arrangements to watch the materials at site till the work is finally closed and handed over.
17. The contractor will remain responsible to arrange all mechanical means
Whenever required to complete the work in time at his own cost.

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18. The quantities provided in the tender schedule are tentative and there is Likelihood of variation during execution as directed by the Engineer-in- charge. Before starting the work, the initial levels will be taken for his acceptance. The final bill be paid on level sections. Neither any claim nor any extra rate will be entertained for variation in quantities.
19. The contractor shall engage local labourers on priority basis during execution of the work
20. No claim whatsoever will be entertained for a damage caused to the work during supply of water in canal.
21. The contractor has to make good the damages cause to canal banks for carriage of materials at his own cost.
22. If use of explosive is necessary for the purpose of blasting of rock required at any stage of the execution, the contractor is to obtain necessary area license from the District Authorities for use of explosives in the work site and issue of blasting materials will be allowed only on production of valid license by the contractor.
23. Deduction towards settlement allowance of earthwork is as follows.
 - a. 20% before monsoon
 - b. 10% after one monsoon
 - c. Nil after two successive monsoons and or compaction& earthwork done under OMC condition.
24. Whenever controversy will arise between Bill of quantities & technical specification, Bill of quantities will stand.
25. Royalty for stone products, sand & moorum are to be recovered from the contractor's bill as follows
 - 1) Stone Products @Rs 130.00/cum
 - 2) Sand @ Rs 35.00/cum
 - 3) Earth & Moorum @ Rs 35.00/cumStatutory increase in the rate of royalty if any shall be reimbursed. On the other hand the same shall be recovered if there is decrease in rates.
26. As per amendment to rule-2 of OPWD code Vol-II, the successful bidder registered under other state government has to register under state PWD before signing the agreement.(As per the Works. Deptt. No.- 13281 dated 02.08.2007.)
27. The empty cement bags @ Rs 3.945 only will be recovered from the work bill.
28. Before execution of work the contractor has to arrange to obtain necessary Quality control test reports on mix designs by physical tests on construction materials from the Govt. laboratories. The testing charges on quality control reports shall be borne by the contractor.

SECTION – 5

TECHNICAL SPECIFICATIONS

1. CLEARANCE OF THE SITE AND EXCAVATIONS.

1.1. CLEARANCE OF THE SITE.

1.1.1. GENERAL:- The work to be done under this section consists of furnishing all plants, labour and materials and performing all works necessary to carry out all clearing and grubbing operation as specified and or as directed by Engineer-in-Charge. The areas to be occupied by the dam / Canal works(Canal & structure) has to be cleared of all vegetations including all trees, bushes, stumps, roots, logs (buried or not) and other objectionable materials before starting of the work.

DISPOSAL:- All stumps, roots, bushes, buried logs and other debris within the area required to be cleared and where grubbing is to be done, shall be burnt or otherwise completely removed from the site to the satisfaction of the Engineer-In-Charge. Disposal in the river bed and streams will not be permitted and no materials shall be piled where in the opinion of the Engineer-In-Charge it is liable to be foliated away by floods. Timber and fuel obtained in clearing shall be properly stacked at sites approved by the Engineer-In-Charge. Disposal by burning will be allowed only on specific sanction of the Engineer-In-Charge and shall be done under constant attendance until fires have been brunt out or have been extinguished to guard against spreading of fire. In absence of approved dumping yard the agency will has to arrange dumping yards for disposal of waste materials.

1.1.2 PAYMENTS:- Clearing and grubbing in the performance of this contract will be considered for payment of the basis of the unit price per sqm. Provided in the Schedule.

1.2. EXCAVATION:-

1.2.1. GENERAL:- The work to be done under this section consists of bringing all plants, labour and materials and performing all works required to do all excavation and maintain the excavated slopes and prepare the foundations as directed by the Engineer-In-Charge. Excavation for the foundation of major structures shall be made up to sound firm rock, free from weathered materials, open seam and crevices, and shall be so shaped, cleaned and roughly stepped so as to produce the desired surface as directed by the Engineer-In-Charge. The excavation shall be open cut excavation which shall be made to the full dimensions and shall be finished to the prescribed lines and grades in a workman like manner, except that sharp points of undisturbed wedge rock will be permitted to extend within the prescribed lines by not more than 15 cms. The bottom and side slope of common excavation shall be made accurately to the dimensions shown in the drawings and prescribed by the Engineer-In-Charge. The surface so prepared shall be moistened with water and tamped or rolled with suitable tools or equipment for the purpose of roughly compacting them and forming foundations upon or against which the concrete/ masonry structure is to be placed.

If at any point in ordinary excavation, materials excavated beyond the lines required to receive the structure, the over excavation shall be filled with selected materials in layers not more than 15 cms thick, moistened, and thoroughly compacting by tamping or rolling. If at any point in common excavation the natural foundation materials is disturbed or loosened during excavation process or otherwise, it shall be removed and replaced with selected materials which shall be removed and replaced with selected materials which shall be thoroughly compacted. Where concrete/ masonry is to be placed upon or against rocks, and average minimum thickness are shown, the excavation shall be sufficient to provide for the minimum thickness of concrete/masonry is not indicated in the drawings, the excavation shall be made to the lines as prescribed by the Engineer-In-Charge. All necessary precautions shall be taken to preserve the materials below and beyond the lines of all excavations in the soundest condition. No blasting that might injure the work will be permitted and any damage done to the work by blasting, including the shattering of the materials beyond the required excavation lines, shall be repaired in a manner satisfactory to the Engineer-In-Charge. All cavities in rock excavation as determined by the Engineer-In-Charge or by removal of rock or other foundation materials needlessly damaged by blasting or other operations shall be filled solidly with concrete of the same mix as foundation concrete or as per direction of the Engineer-In-Charge.

After the excavation works have been completed to the approximate grade specified by the Engineer-In-Charge, all loose rock and other excavated materials shall be removed and the surface shall be cleaned with air and water jet under high pressure, for the purpose of inspection. If the foundation is found to be unsatisfactory, additional excavation shall be made as directed by the Engineer-In-Charge and the surface again cleaned for inspection. The procedure shall be repeated until satisfactory foundation is reached.

1.2.2 CLASSIFICATION:- The materials excavated shall be classified as below.

(i) COMMON EXCAVATION:-

(a) Excavation in all kinds of soil including D.I. Rock and Disposal:-

In the Foundation excavation, the item of excavation of all kinds of soil including D.I. rock will be encountered. These operations shall include the excavation of all kinds of soil and D.I. by manual labour including fine dressing and transportation of muck by either head load or by mechanical means, i.e. by transport vehicle like Truck, etc. or by both to the place of dumping.

(b) Soil and disintegrated rock excavated from the foundation will be dumped at the location within 1 km leads as directed by the Engineer-In-Charge. Excavated hard rock which has got reuse value should be stacked by the contractor at his own cost at a suitable place as directed by the Engineer-In-Charge.

(ii) EXCAVATION IN ALL KINDS OF ROCK AND DISPOSAL:-

The major portion of the excavation work will be excavated in all kinds of hard rock in the foundation pit. The rock encountered is very hard and formation will be jointed with softer layers in between. The volume of softer layers encountered in the joints will, however, be measured along with the hard rock and will be paid at the same rate.

Normally methods of excavation will be by use of explosive i.e. by blasting methods, however excavation by wedging, barring and chiseling and control blasting can be done if desired by the Engineer-In-Charge. The Contractor's item rate shall include all necessary operations such as ordinary methods of blasting, wedging, barring, chiseling and controlled blasting, etc., besides loading and transportation to the dumping yard and unloading the same in a systematic manner.

All the blasting debris are to be taken to the specified dumping yard within specified lead. It may not be possible for the transport vehicles to approach the point of excavation at all places. It may be necessary to carry blasted muck by head load up to the transport vehicles including a lead of 100 to 150 m or more. The Contractor's item rate should include all such possibilities. No stacking of the blasted debris will be allowed within 300 m distance from the Dam base.

Normally methods of excavation will be by blasting with explosive, all operations, involving transportation, handling, storage and use of explosives for the blasting shall be conformed in accordance with the Indian explosives Act. The contractor shall engage licensed blasters for taking up the blasting operations in the work spot. The contractor shall take all necessary precautions for all accidents which may arise due to blasting. He should install portable magazines near the work site for carrying out day to day blasting operations.

(iii) LINE DRILLING AND BROACHING:- Excavation in rock shall be progressed by systematic line drilling and broaching or by chiseling in locations specified by the Engineer-In-Charge.

1.2.3. BLASTING:- Blasting shall be permitted only when proper precautions are taken for the protection of persons, work and property. Any damage done to the work or property by blasting shall be repaired immediately. Blasting may be done only to depth and extent approved by the Engineer-In-Charge with explosive of only approved quality and charge and at such location it may neither crack nor damage the rock outside the prescribed limits of excavations. Explosives shall be stored in a safe place at a sufficient distance from the works and under special care of a watch man so that in case of accidents, no damage occurs to the other parts of the works. All storing, handling, transport and use of explosives, detonators and the equipment there of shall be strictly in accordance with the Indian Explosive Act and the Explosive Rules-1940 and as amended from time to time.

Holes shall be drilled not exceeding two third of the depth of rock to be excavated from the elevation at which the hole is started. The holes shall not be larger than necessary to permit easy passage of whole sticks of explosives to the bottom of the holes. As the excavation approaches its final limits, the depth of holes shall be reduced progressively. When ever in the opinion of the Engineer-In-Charge further blasting may injure the rock upon or against which concrete is to be placed, the use of the explosives shall be discontinued and the excavation shall be completed by wedging, barring, chiseling, drilling or broaching or by other suitable methods.

Care should be taken to remove all loose slabs before masonry/concrete is placed for the dam. Rock bolting compared to excavation of rock may be useful at places in excavation of foundation. The Engineer-In-Charge will direct where to locate rock bolts and where to excavate by raring. Charging, tamping and firing of drilled holes shall be done by the foreman or by some licensed person under his personal directions. Proper signals by siren or bugles shall be given before each operations of blasting. In charging of hole, the cartridge shall be inserted one at a time and each squeezed gently with wooden rod.

Metal or bamboo rods shall not be used for this purpose. The fuses shall be out in such a way that the firing of the holes can easily be counted unless electric firing is used. More number of holes shall not be

fired at one time, that can not be easily counted in order that it may be determined definitely whether all the holes fired have discharged properly. If a misfire occurs, no one should approach the misfired hole until a safe time has elapsed. The inert materials placed above the charge of misfired hole shall be carefully removed and the hole flooded with water and be marked in distinguishing manner. A second adjacent hole not nearer than 23 cms shall then be drilled parallel to the misfired hole charged and fired and then the debris shall be searched thoroughly for unfired detonators and cartridges. This operation shall be continued until the misfired hole exploded. Special care shall be taken to keep the fuses dry and the explosives protected from the direct rays of the sun.

The final prepared foundation shall roughly present a saw tooth outline and shall have at least 50 % horizontal or nearly horizontal area to give resistance against sliding or as per direction.

1.3.0 DEWATERING:-

1.3.1 **GENERAL:-** Dewatering shall be carried out as per approval of the Engineer-In-Charge to enable excavation, mucking, inspection, final preparation of the surface, providing anchor bars, grouting, laying of masonry, laying of concrete and allied constructional activities.

1.3.2 **DEWATERING BY ELECTRICAL / DIESEL PUMPS :-** Electric / Diesel pumps (as approved by the Engineer-In-Charge) of requisite capacity shall be installed in order to handle seepage. In case of electric pumps, circuits shall be isolated from any other electric installation and the switch gears and pumping equipment shall be maintained in satisfactory condition to avoid loss of energy. If diesel pumps are used ; all cost of POL, running and maintenance shall be borne by the contractor deemed to have been included in the unit price of the particular item in the schedule of bid. Similarly the cost of electricity, running and maintenance of electric pumps, if used, shall have been included in the unit price for the particular item in the schedule of bid.

1.4.0. MEASUREMENT AND PAYMENT:-

1.4.1. **GENERAL:-**The prices included in the schedule for the works required by this section shall be all inclusive constituting full compensation for mobilizing, demobilizing and supplying all equipment, materials, labour, supervision and all incidental work except for any item specifically exempted there from and for which in addition specific payment item has been included in the schedule.

1.4.2. **COMMON EXCAVATION:-** Measurement for all works done should be on the level sections .Initial levels and final level will be taken at every 3 M square grid and the contractor shall accept such levels, either in the level book or graph sheets, or in both as directed by Engineer-In-Charge. If the contractor dumps the excavated materials in an irregular way or not conforming to the dumping specification, the department will withhold 20 % (of the rate) and the same can only be released after the contractor removes the materials to the proper place for dumping.

For the excavations done at the higher levels part rate of 90 % can be paid by the Engineer-In-Charge at his discretion and the contractor will have no objection to that. The same can be released after the work is completed up to the foundation grade. No allowance shall be made for over excavation beyond the specified minimum lines of excavation except where specifically authorized. No extra payment for any over breakage and subsequent repairs shall be payable and deemed to have been included in the applicable item of schedule of bid.

Payment for common excavation shall be made on the basis of the unit price entered for the particular items in the schedule.

1.4.3. **ROCK EXCAVATION: -** Measurement for payment of medium hard rock and sheet rock excavation in open cut as required by this section shall be made of the total volume of rock in cubic meters contained, within the minimum lines for such excavation shown on the drawings or as specifically directed. The profile of the original rock surface, prior to excavation shall be established by taking levels on a 3 M square grid.

The final levels on finished surface shall similarly be taken on a 3 M square grid on concurrent points as that of initial grid. With these profiles, the rock excavation shall be worked out. In case of hard rock boulders made during excavation for which blasting is resorted to, the contractor is required to stack the blasted debris in closely packed stacks as directed by the Engineer-In-Charge and payment will be made for the solid quantity of rock calculated after deducting 40 % of stacked volume towards voids.

No allowance shall be made for over excavation beyond the minimum lines of excavation except where specifically authorized. No extra payment for any over breakage and subsequent repairs shall be payable and deemed to have been included in the applicable item of the schedule of bid.

If the contractor dumps the excavated rock in an irregular way or not conforming to the dumping specification, the department will withhold 20 % of the rate and the same can only be released after the

contractor removes the materials to the proper place for dumping payment for rock excavation shall be made on the basis of the unit price entered for the particular item in the schedule.

1.4.4. DEWATERING: - No payment will be made separately for de-watering is to be done at the contractor's cost and the rates for all items include the de-watering operation.

2.0.0. CEMENT CONCRETE:-

2.1.0. GENERAL :- Concrete for the structure shall be composed of cement, sand, coarse aggregate, water and any other ad mixtures as specified all well mixed and brought to the proper consistency. Tests shall be carried out on the concrete at specified intervals during the progress of work and the mixes modified as necessary in order to consistently secure the required strength, workability, density and impermeability together with the maximum practicable economy. The water cement ratio for the concrete will be regulated by the requirements of strength, durability and workability. The concrete shall be of uniform consistency and quality throughout any pour and for similar parts of the same structure. However, the consistency and composition shall be such that the concrete can be worked into all corners and angles of the forms and that the concrete surrounds completely the reinforcement and embedded metal with out causing any segregation of the ingredients or collecting any free water taking into account the type and capacity of vibrating equipment used.

The control of concrete is based, besides other factors on maintaining a fairly uniform slump at the point of placement and on holding the water cement ratio as closely as practicable to the standards determined for the purpose. Under no conditions shall the slump be greater than that required to provide proper placement and compaction of the fresh concrete within the forms.

The slump shall be measured in accordance with the standard methods prescribed in the Appendix –G of IS 456-1978 as revised from time to time.

The allowable slump of consistency shall be as directed. The consistency of the concrete shall be varied only by increasing or by decreasing the amount of cement based in each batch and not be any changes of the water cement ratio established for each class of concrete.

2.2.0. CONCRETE CLASSIFICATION: Concrete classification is related to the specified 28 days compressive strength and shall conform with the requirements set out in Table-I there of. In case where approved pozzolana is used as part of replacement of cement, the pozzolana concrete shall be designed to attain the same 365 days strength as would be attained at the end of 365 days by a corresponding neat cement concrete.

A minimum of three test specimens shall be made for each 120 Cum of each class of concrete for a given age. There shall be at least three test specimens for each day of concreting even if only a few cum of the particular concrete is manufactured in a day.

The tests shall satisfy the following criteria.

- (i) The average strength of any three consecutive sample strength shall be greater than the specified strength.
 - (ii) The over all coefficient of variations for any 10 consecutive sample strength shall be less than 0.15.
 - (iii) Not more than 10 % of the specimen strengths shall be less than 85 % of the specified strength.
- Additional tests shall be carried out as and when directed.

TABLE-1

Grade of concrete	Compressive test strength in N/mm ² in 150 mm cube after mixing conducted in accordance with IS456-1978	
	Minimum at 7 days	Minimum at 28 days
M-10	7	10
M-15	10	15
M-20	13.50	20
M-25	17.00	25.00

NOTE :-

- 1) In all cases, the 28 days compressive strength specified in table shall alone be the criteria for acceptance or rejection of the concrete.
- 2) Where the strength of a concrete mix as indicated by tests lies in between the strengths for the two grade specified in the table, such concrete shall be classified for all purposes as concrete belonging to the lower of the two graded between which its strength lies.

2.3.0. CONCRETE MATERIALS:-

CONTRACTOR

SUPERINTENDING ENGINEER

- 2.3.1. CEMENT:-** Cement shall unless otherwise specified be ordinary Portland cement / slag cement conforming to the relevant clauses of the IS:269 (third revision) as revised from time to time. Cement shall be used in approximately the same chronological order in which it is received from the factory.

Transportation unit and storage bins for bulk cement shall be weather proof and shall be constructed so that there is no dead storage.

Cement delivered in bags shall be transported under completely weather proof cover and stored in weather proof structures with an adequate provision for prevention of-absorption of moisture and stored in a manner permitting inspection and identification of each consignment.

Stacking height of bagged cement shall not exceeding three meters.

Cement that has been in storage for more than four months shall not be used without special instruction, testing and approval.

- 2.3.2. WATER:-** The water used shall be cleaned and free from injurious amount of deleterious substance such as but not limited to silt, sewage, oil, acid, alkali, alkali salts and organic matters.

SAND:-The term sand is used to designate fine aggregate with maximum size of particles 4.75 mm. The sand used shall be of coarse category conforming to the relevant specification of the latest IS:515 and IS:383-1970 as revised from time to time. It shall be either natural river sand or manufactured stone sand or mixture of both in specified proportion. The sand shall be cleaned and gritty and composed of hard siliceous grains of a quality approved by the Engineer-In-Charge. It shall be free from injurious amount of clay, soft particles, flaky particles, vegetable or organic matter, mica and other deleterious substance and shall not contain any salts.

(i) NATURAL SAND ;-Natural Sand shall be obtained from an approved source. No sand affected by salty sea water shall be used . The sand shall be screened and thoroughly washed, preferably in flowing water so as to remove all earthy impurities and very small fines unless otherwise permitted by the Engineer-In-Charge.

Natural sand shall be reasonably free from laterite and other softer grains. Sand from all source showing appreciable percentage of these impurities shall be rejected.

The maximum percentage of deleterious substances in the natural sand as delivered to the mixture shall not exceed the following.

Deleterious Substance	Maximum permissible limit by weight
Materials finer than IS sieve No.8	3 %
Shale	1%
Coal and lignite	1%
Clay lumps	1%
Cinders and clinkers	0.50%
Alkali Mica and Coated grain (deleterious)	2%

NOTE: The sum of percentage of all deleterious substances shall not exceed 5 % by weight. The presence of mica in the fine aggregate will reduce the compressive strength of the concrete considerably. It is advisable to investigate the mica content of the fine aggregate and make suitable allowance for possible reduction of strength of concrete or mortar.

(ii) MANUFACTURED SAND:- Where ever natural sand conforming to specification requirements is not likely to be available within economic reach, resource has to be taken to manufacture the stone sand of desired quality. The stone that will be used in crushing for getting fine aggregates shall conform in all respects to the stone specified for coarse aggregates.

The maximum percentage of deleterious substances in the manufactured sand as delivered to the mixture shall not exceed the following.

Deleterious Substance	Maximum permissible limits (by Weight)
Material passing IS Sieve No.8	3%
Coal and Lignite	1%
Clay Lumps	1%
Others	1%

NOTE: The sum of the percentage of all deleterious substance shall not exceed 5% by weight. The Natural and the manufactured sand should be protected from being contaminated with dust, organic matter or other deleterious substances and should be as per specification. If manufactured sand is not considered as per specification, the same may be outright rejected by the Engineer-in-Charge or the same may be allowed to be used after required treatment. Varying amount of moisture in fine aggregate

contributes to lack of uniform and stable moisture content in the aggregate as batched. Dry sand is always be preferred.

The sand will be well graded and when tested by standard sieves shall conform to the following limits of gradation. The gradation shown in the table is indicative only. The best gradation may be determined by the Engineer-In-Charge after experiments and tests.

IS Sieve Size	Individual percentage retained	
	Natural Sand	Manufactured Sand
480	0-5	0-5
240	5-20	10-25
120	10-20	10-25
60	10-30	10-30
30	15-35	10-30
15	12-30	10-20
Pass	3-7	10-20
Maximum F.M.	3.10	3.25
Minimum F.M.	2.30	2.50

The grading of fine aggregates shall be so controlled that fineness module of at least nine out of ten sample of fine aggregate delivered to the maximum shall not vary more than 0.20 from the average of ten sample tested.

2.3.3. COARSE AGGREGATE:-

The term coarse aggregate is used to designate aggregate that is reasonable well graded ranging in size of particles form 4.75 mm to 150 mm or any size or range of sizes within such limits. The coarse aggregate shall conform to relevant specifications of latest IS:515 (for natural and manufactured aggregates) or of IS:383-1963 (for natural aggregates as revised form time to time)

The aggregates shall be composed of clean, hard, durable pieces of stone, regular, rounded in shape obtained naturally or by crushing from suitable stone approved by the Engineer-In-Charge.

The coarse aggregate shall be free from objectionable quantity of weeds or other deleterious substances, the preparation of which in any size of coarse aggregates as delivered to the mixture shall not exceed the following values.

Permissible deleterious materials in manufacture of coarse aggregates

Deleterious substances	Maximum permissible limits (by weight)
Materials finer than IS Sieve No-8	1%
Coal and Lignite	1%
Clay lumps	1%
Total soft, friable elongated or laminated pieces.	3%

NOTE:- Total of all deleterious materials shall not exceed 5 % by weight.

Permissible deleterious materials in natural coarse aggregate.

Deleterious substances	Maximum permissible Limit (By weight)
Materials finer than IS Sieve No-8	1%
Coal and Lignite	1%
Clay lumps	1%
Soft fragments	3%

NOTE :- Total of deleterious materials shall not exceed 5 % by weight. The aggregate shall be resistant to chemical or physical changes such as cracking, swelling, softening, leaching or other chemical alternation after its incorporation in concrete.

(i) **CRUSHING AND GRADING:** -The aggregate should be crushed and the different size of the coarse aggregates shall be separated into nominal sizes as follows.

Designation of Size	Nominal size of Range
20 mm (3/4") aggregate	4.75 mm to 20 mm (3/15" to 3/4")
40 mm (1 ½ ") aggregate	20 mm to 40 mm (3/4" to 1½")
80 mm (3") aggregate	40 mm to 80 mm (1½" to 3")
150 mm (6") aggregate	80 mm to 150 mm (3" to 6")

(ii) **STORAGE:-** The coarse aggregate shall, if possible be stored in a shade or covered storage and arrangements made for sprinkling of water to ensure wetting of aggregates. Great care shall be taken in screening and stacking of the coarse aggregates, so as to avoid inter mixture of different grade materials and inclusion of any foreign materials. The stockpile should be built up in a horizontal or gently slopping

layer. A hard base should be provided to prevent contamination from under line materials in storage areas in continual use. Overlap of different materials should be prevented with suitable walls or by an ample distance between storage piles. Sufficient storage of all grades shall be maintained so as to permit continuous placing of concrete.

The percentage of weight of the significant undersize shall be less than 5% when tested on the designated test screen having opening 5/6 times the normal minimum size of the materials. No over size (i.e. materials that would be retained on the designated test screens having opening 7/6 times the size of the materials) will be permitted. In addition to these requirement, coarse aggregates of all sizes shall further conform to the relevant IS:515-1959 or its latest revisions when tested for crushing, abrasion, soundness and water absorption of coarse aggregates. Use of aggregates containing excessive amount of zeolites, secondary minerals and such other components which cause reactivity of the aggregates and consequent reduction in durability in concrete is prohibited. The Engineer-In-Charge may, however, allow use of such materials either in part or in full keeping in view the extent of reactivity, location, the nature of exposure and the structure.

ADMIXTURES:- Admixtures such as pozzolonas, wetting agents, air entering agents etc. shall be used only specific authorization and where ever so permitted the proportions and method of use shall be as directed by the Engineer-in-charges. Materials permitted as admixtures shall have established merit for improving any specific quality of the concrete without having any deleterious effects.

2.4.0. MANUFACTURES OF CONCRETE:- Production of aggregate include quarrying of the raw materials and processing viz. transporting, crushing, screening and washing. Water used for washing aggregates shall be free from alkali, salts and other impurities. No foreign matter shall be allowed to mixed up with the aggregates.

The concrete ingredient shall be mixed thoroughly in concrete mixer, which are so designed as to ensure uniform distribution of all the component materials throughout the mass at the end of the mixing period.

2.5.0. TEMPERATURE OF CONCRETE AND WEATHER CONDITIONS: The temperature of concrete at the time of placement shall not exceed 32° C. When conditions are such that the concrete can not be placed at the required temperature, where every necessary, exposed surface of fresh or green concrete shall be adequately shaded from the direct rays of the sun and protected against premature setting or drying by curing under continuous fine spray or water.

2.6.0. TRANSPORTING CONCRETE:-

(i) Concrete shall be transported from the mixer to the placing position as rapidly as practicable by methods that will prevent segregation or loss of ingredients or slump loss in excess of 25 mm or a loss in air content of more than 1% before the concrete is placed in the works.

(ii) Chutes used for conveying concrete shall be of such size and shape as to ensure a steady uniform flow of concrete in compact mass without separation or loss of ingredients and shall be protected from wind and sun where necessary to protect loss of slump by evaporation and shall be furnished with the discharge hopper. The free or drop of concrete shall be limited to 150 cms. The chute sections shall be made of, or lined with metal and all runs shall have approximately the same slopes not flatter than one vertical to 2.5 horizontal. The required consistency of the concrete shall not be changed in order to facilitate chuting. However, if it becomes necessary to change the constituency, the concrete mix shall be completely redesigned. Where ever there is a free fall within the conveying system, suitable baffle plates, splashing or loss of ingredients whenever it is necessary to hold the discharge end of the chute more than three meters above the level of the fresh concrete, a flexible down spout shall be used to break the fall and confine the flow. The lower end of the spot shall be held close to the place of deposit. Where ever depositing is intermittent, a discharging hopper shall be provided. All chutes shall be thoroughly cleaned before and after each run. All wash water and debris shall be wasted outside the forms.

(iii) Equipment used for transporting concrete from the mixer to the forms shall be maintained free from deposits of still concrete and leakage of mortar. Batch containers, transit mixers, chutes, concrete pumps, pipe lines and discharge hoppers shall be thoroughly cleaned after each run and wash water and debris wasted outside the forms.

2.7.0. PREPARATION FOR PLACIGN CONCRETE:-

2.7.1. Concrete shall not be placed until all form work required is completed, embedded parts, if any installed and checked and surfaces prepared for placing. No concrete shall be deposited until the foundation has been inspected and approved.

All surface or forms and embedded materials that have become encrusted with dried mortar or grout from concrete previously placed shall be cleaned of all such mortar or grout before the surrounding or adjacent concrete is placed.

2.7.2. Immediately before placing concrete, all surfaces of foundation upon or against which the concrete is to be placed, shall be free from standing water, mud and debris. All surfaces of rock upon or against which concrete is to be placed shall, in addition to the foregoing requirements be cleaned and free from oil, lubricant, objectionable coatings and loose semi batched or unsound fragment a surface of absorptive foundations upon or against which concrete is to be placed shall be moistened thoroughly and kept sufficiently wet for at least 24 hours immediately prior to placing so that moisture will not be drawn from the freshly placed concrete. The cleaning and roughening of the surfaces of the rock shall be performed by the use of high velocity air water jets, wet sand blasting, stiff booms, picks or by other effective means. Washing and scrubbing process shall be continued until the wash water collected in puddles is clear and free from dirt. In the final cleaning process, the wash water may have to be removed by sponges. If any drilled hole is left in the foundation surface which is no longer needed, the hole shall be cleaned with air water jetting and filled up completely with cement slurry.

2.7.3. Concrete / Masonry surfaces upon or against which concrete is to be placed and to which the new concrete is to be adhered and that it has become so rigid that the new concrete cannot be incorporated by near vibration integrally with that previously placed are defined as construction joints. The surfaces of construction joint shall be clean, rough and damp but free from standing pools of water receiving the next lift. Clean up shall comprise of removal of all laitance, loose or defective concrete, castings, sand, sealing compounds if used and other foreign materials, if necessary by scrapping, chipping or by other suitable means. The surface of construction joints shall be cleaned by use of a high pressure water jet or wet sand blasting and then washed thoroughly. The water jetting, sand blasting and washing shall be performed at the last opportunity prior to the placing of concrete.

2.8.0. PLACING AND COMPACTING CONCRETE:-

2.8.1. After the surfaces have been cleaned and dampened as specified, surfaces of rock and construction joints shall be covered. Wherever practicable with a layer of mortar approximately 15 mm to 20 mm thick. The mortar will have the same proportions of water, air entraining agent, cement and fine aggregate as the concrete mixture which is to be placed upon it. The water cement ratio have the same proportions of water, air entraining agent, cement and fine aggregate as the concrete mixture which is to be placed upon it. The water cement ratio of the mortar in place shall not exceed that of the concrete to be placed upon it, and the consistency of the mortar shall be suitable for being spread uniformly and worked thoroughly into all irregularities of the surface.

2.8.2. So far as it is practicable, concrete shall be placed directly in its final position and shall not be caused to flow in a manner to permit or cause segregation. Methods and equipment employed in placing concrete will ensure that aggregate is not separated from the concrete.

2.8.3. In placing mass concrete in a lift successive batching of concrete shall be placed in a systematic arrangement in order to avoid long exposure of parts of the live surface of a concrete layer. In mass concrete placement, delay may occur resulting in cold joints within a lift. When placement is resumed while concrete is so green and therefore capable of ready bonding that it can be dug out with a hand pick, the usual contraction joint treatment will not be required if the surfaces are kept moist and the concrete placed against the surface is thoroughly and systematically vibrated over the entire area adjacent to the older concrete. If the delay is short enough to permit penetration of the vibration into the lower layer during routine vibration of successive layers, the vibration will assure necessary bonding.

If from any cause, the working surface is left exposed until it has hardened to a considerable extent, it shall be left to set and cure for not less than 56 hours or longer if necessary until strength greater than 35.2 kg/Cm² (500Psi) has been attained, before completing the lift. The surface thus, interrupted shall be given a thorough clean up as for normal lift joint surface and the work shall be commenced with a mortar layer as specified. In placing mass concrete, the exposed area of fresh concrete shall be maintained at the practical minimum by first building up the concrete shall be maintained at the practical minimum by first building up the concrete in successive approximately horizontal layers to the full width of the block and to full height of the lift over a restricted area at the downstream in similar progressive stages to the full area. The slope formed by the unconfined upstream edges of the successive layers of concrete shall be kept as steep as practicable in order to keep its area minimum. Concrete along these edges shall not be vibrated until adjacent concrete in the layer is placed, except that it shall be vibrated immediately when weather conditions are such that the concrete will harden to an extent the layer vibration may not fully consolidated and integrate it with more recently placed adjacent concrete.

Re tampering of concrete shall not be permitted. Any concrete which has become so stiff that proper placing without re tampering cannot be ensured shall be wasted. In formed structural work concrete placements shall generally be started with an over-sanded mix containing 20 mm maximum size aggregate and an extra sack of cement per cubic meter and having a 125 mm slump placed several

centimeters deep on the joints at the bottom of the form, concrete placement shall commence immediately thereafter.

2.8.4. If concrete is placed monolithically around opening having vertical dimensions greater than 0.6 meter or if concrete in decks, floor slabs, beams girders, or other similar parts of a structure is placed monolithically with supporting concrete, the following instructions shall be strictly observed.

(i) Placing of concrete shall be delayed not less than one hour for more than three hours at the top of opening and at the bottom of fillets under decks, floor slabs, beams, girders or other similar parts of structure.

(ii) The last 0.6 meter or more of concrete placed immediately before the delay shall be placed with as low slump as practicable and shall be thoroughly compacted.

(iii) The surfaces of concrete where delays are made shall be clean and free from loose end foreign materials when concrete placing is started after the delay.

(iv) Concrete placed over opening and in decks, floors, beams, girders and other similar parts of structures shall be placed with as low slump as practicable.

(v) Concrete shall be compacted to maximum practicable density, in such a manner that is free from pockets of coarse aggregate and is in intimate contact with surface of forms and embedded materials. Unless otherwise permitted, all concrete shall be compacted by mechanical vibrator.

(vi) Compaction of concrete shall wherever practicable be carried out by the use of immersion type vibrations. Concrete vibrators having vibrating heads of 100 millimeter or more in diameter shall be operated at speeds of at least 6000 revolutions per minute when immersed in the concrete. Vibrators having vibrating heads less than 100mm. in diameter shall be operated at speed of at least 7000 revolutions per minute in the concrete. Normally, form work shall be designed to provide for the insertion and operation of mechanical vibrators in the placed concrete. Form vibrators shall be used wherever internal vibration is not possible or would be inadequate in compacting each layer of concrete, the vibrator shall be operated in as near vertical position and the vibrating head shall be allowed to penetrate and revibrate the concrete in the upper portion of the under laying layer. In the area where newly placed concrete in each layer joins previously. Placed concrete more vibration than usual shall be performed, the vibrator penetrating deeply at close intervals along the contacts. Layers of concrete shall not be place until layers previously placed have been vibrated thoroughly as specified. Contact of the vibrating head with surface of the forms shall be avoided.

(vii) During placing and until curing is completed, the concrete shall be protected against the harmful effect of exposure to sunlight, wind and rain as directed.

2.9.0. FORM WORK:-

2.9.1. GENERAL :- (i) Forms shall be used wherever necessary to continue the concrete and shape it to the required lines, or to ensure against contamination of the concrete by excavations or other features of the work. All exposed concrete surfaces having slopes of 2 horizontal to 1 vertical or greater shall be formed.

(ii) Form work may be of timber, steel or precast concrete panels or such other suitable materials or combination of such materials. Form work shall be substantially and rigidly constructed to the shapes lines and dimensions required, efficiently propped and braced to prevent deformation due to placing, vibrating and compacting concrete, other incidental loads or to the effect of weather. If settlement or deflection of forms under the load of fresh concrete is to be expected, allowance should be made in the original construction of the forms of that the finished lines and dimensions of the structure are in accordance with those specified on the drawings

(iii) The surfaces of form work shall be made to produce surface finishes as specified and form work joints be tight enough to prevent loss of liquid form concrete. Joints between the form work and existing concrete structures shall also be "grout tight". Form work shall be arranged to facilitate easing and removing of the various parts in correct sequence without jarring or damaging the concrete. Temporary opening shall be provided at all points necessary in the forms of facilitate clearing and inspection immediately before the placing of the concrete.

(iv) Forms shall overlap the hardened concrete in the lift previously placed by not more than 75 mm and shall be tightened against the hardened concrete so that when concrete placement is resumed, the form will not spread and allow loss of mortar at construction joints. Additional blots or form ties shall be used as necessary to hold forms tight against hardened concrete. Particular attention shall be paid in setting and tightening the forms for construction joints so as to get a smooth joint free from sharp deviations or projections.

(iv) Moulding strips shall be placed in the corners of forms so as to produce chamfered edges as required on permanently exposed concrete surface.

2.9.2. MATERIALS TO BE USED :-

(i) Materials used for form sheathing and lining shall conform with the following requirements:-

Required finish.	Timber sheathing or lining	Steel sheathing or lining .
F1	Any type and grade meeting the dimensional requirements of surface finish except that metal forms shall be used on surfaces of internal traverse and longitudinal joints.	Steel sheathing permitted steel lining permitted except on surface of internal transverse and longitudinal joint where steel sheathing is required.
F2	Common grade timber or ply sheathing or lining.	Steel sheathing permitted steel lining permitted if strongly supported.

Steel sheathing denotes steel sheets not supported by a backing of timber boards. Steel lining denotes steel sheets supported by a backing of timber boards.

(ii) Timber sheathing or lining shall be of such kind of quality or shall be so treated or coated that there will be no chemical deterioration or discoloration of the formed concrete surfaces. The type and condition of forms sheathing and lining and the ability of forms to withstand distortion caused by placement and vibration of the concrete and the workmanship used in the form construction shall be such that the formed surfaces will conform with applicable requirement of this specification pertaining to finish of formed surfaces.

Forms for concrete surfaces required to receive F2 finish shall be constructed so as to produce uniform and consistent texture and pattern on the concrete faces. Metal patches on forms for these faces will not be permitted. The form sheathing or lining shall be so placed that all horizontal form marks are continuous across the entire surface. Where finish Fw is specified ht sheathing or lining shall be placed so that the joint marks on the concrete surfaces will be in general alignment both horizontally and vertically and the form sheathing materials used for such surfaces shall be restricted on one type in any one major feature of the work.

(iii) Embedded ties for holding forms shall remain embedded and except where F1 finish is permitted, shall terminate not less than two diameters or twice the minimum dimension of the tie or ten millimeter, whichever is greater, i.e. from the formed faces of the concrete. Where F1 finish is permitted, ties may be cut off flushed with formed surface.

The ties shall be constructed so that removal of the ends or end fasteners can be accomplished without causing appreciable spalling, at the faces of the concrete. Recesses resulting from removal of the ends of the form ties shall be filled in accordance with the provisions of section of repair of concrete.

2.9.3. CLEANING AND TREATMENT OF FORMS :-

At the time concrete is placed in the forms the surface of the forms shall be free from encrustations of mortar grout or other foreign materials. Before concrete is placed, the surfaces of the forms designated to produce F1, F2 finishes shall be oiled with a commercial form oil that will effectively prevent sticking and will not stain the concrete surfaces. For timber forms, form oil shall consist of refined mineral oil suitable compounded with one or more ingredients which are appropriate for the purpose.

Care shall be taken to keep form oil out of contact with reinforcement.

2.9.4. REMOVAL OF FORMS :-

(i) Except as otherwise provided in this Sub-clause, form shall be removed as soon as the concrete has hardened sufficiently to prevent damage by careful form removal thus facilitating satisfactory progress with specified curing and earliest practicable repair of surface imperfections.

(ii) Forms on upper slopping faces of concrete, such as forms on the water sides of wrapped transitions shall be removed as soon as the concrete has attained sufficient stiffness to prevent sagging. Any needed repairs or treatment required on such slopping surfaces shall be performed at once and be followed immediately by the specified curing.

(iii) In order to avoid excessive stresses in the concrete that might result from swelling of the forms, timber forms for wall opening shall be loosened as soon as this can be accomplished without damage to the concrete.

(iv) Subject to approval, forms on concrete surface close to excavated rock surface may be left in place provided that the distance between the concrete surface and the rock is less than 400 mm. And that the forms are not exposed to view after completion of the work

(v) Forms shall be removed with care so as to avoid injury to the concrete. Any concrete damage informs removal shall be repaired in accordance with the provisions of section of repair of concrete.

(iv) The minimum intervals of time as per IS:456-1978 will generally be allowed when using ordinary Portland cement between placing concrete and striking form work but the period shall be modified in case of wet weather and also at the option of the Engineer-In-Charge.

2.10.0. FINISHED AND FINISHING OF CONCRETE SURFACE:-

2.10.1.(i) Allowable deviations from plumb or level and from the alignment, profile, grades and dimensions shown on the drawings are defined as "tolerance" and are to be distinguished from the irregularities in finish as described herein. The tolerance in concrete construction are specified in the particular section.

The classes of finish and requirements for finishing of concrete surface shall be as shown in the drawing or as herein after specified. In the event of finishing not being definitely specified herein or on the drawings the finish to be used shall be as directed. Finishing of concrete surfaces shall be performed only by skilled workmen. Concrete surfaces will be tested where necessary to determine whether surface irregularities are within the limits hereinafter specified.

(iii) Surface irregularities are classified as "abrupt" or "gradual" offset caused by displaced or misplaced form sheathing or lining or from sections or by loose knots or otherwise- defective form timber will be considered as abrupt irregularities and will be tested by use of template, consisting of a straight edge or the equivalent thereof for curved surface. The length of the template will be one and half meters for testing of formed surface and three meters for testing unformed surfaces.

(iv) The classes of finishes for formed concrete surfaces are designated by one of the symbols F1, F2, F3 and F4 Bag rubbing or sand ballasting will not be required on formed surfaces. Grouting will not be required on formed surfaces other than that necessary for the repair of surface imperfections. Unless otherwise specified or indicated on the drawings, the classes of finish which will apply are as follows:

(a) FINISH F1 :-

This finish applies to surfaces where roughness is not objectionable, such as those upon or against which fill materials masonry or concrete will be placed, i.e. the upstream face of the structure that will otherwise be permanently concealed. The surface treatment shall be repair of defective concrete, correction of depressions, deeper than 25 mm and filling of tie rod holes. Form sheathing shall not leak mortar when the concrete is vibrated. Forms may be build with a minimum of refinement

(b) FINISH F2 :-

The finish is required on the permanently exposed surfaces for which other finishes are not specified, such as in outlet works and open spillways, bridges and retaining wall not prominently exposed to public view and in the galleries and audits in the structure except where F1 finishes are permitted. Forms shall be built in a workman like manner to the required dimensions and alignment, without conspicuous off-sets or bulge. Surface irregularities will be measured from a 1.5m template

2.10.2. Uniformed surfaces which are nominally level shall be sloped for drainage as shown on the drawings or as directed. Unless the use of other slopes or level surface is indicated on the drawings, narrow surface such as tops of parapets, tops of wall and kerbs shall be sloped approximately one per 30 cm of width, broader surface such as roadways, platform and decks, shall be sloped approximately half centimeter for 30 cm of width.

2.11.0. REPAIRS of CONCRETE :-

Repairs of concrete shall be performed by skilled workers & at the expense of the agency before final acceptance of the work.

3.0.0 PRECAST RAILINGS :-

Precast members for railing shall be of reinforced cement concrete and shall conform to the specifications given in Clause-5.0. the precast members shall be removed from the moulds as soon as practicable and shall be kept damp for a period of at least ten days. During this period they shall be protected from sun and wind. Any precast member that becomes chipped, marred or cracked before or during the process of placing shall be rejected.

3.1.0 MEASUREMENT AND PAYMENT :-

Railing shall be measured in running meters. The rate of railing in the schedule of quantities shall included the cost of all labour, materials, all taxes, tools and plants required for doing the work complete in all respects in accordance with above specifications and as shown in the drawing.

4.0.0. APPLICABLE PUBLICATION FOR REFERENCE

The concrete, it's constituents, methods and procedures of manufacture shall conform to Bureau of Indian Standards (BIS) codes and other publication listed below unless otherwise specified.

SI No	Short Title	B.I.S. Number
1.	Structural Steel (Standard quality) (fifth revision) (with amendment No 1 to 5)	226-1975
2.	Mild steel and medium tensile steel Bars(Third revision)	432-1982 (Part-II)
3.	Mild steel and medium tensile steel Bars and hard drawn steel	432-1966
4.	Hard drawn steel wire (Third revision)	432-1982(Part-II)
5.	Mild Steel wire for general engineering purposes (Third Revision)	280-1978
6.	High yield strength deformed steel bas and wires for concrete reinforcement (Third Revision)	1608-1983
7.	Code of practices for bending and fixing of bars for concrete reinforcement	2502-1963
8.	Code of practices for welding of mild steel bats used for R.C.C. (First Revision)	2751-1979
9.	Recommendations for welding cold worked steel bars fro R.C.C.	9284-1979
10.	Recommendation for detailing of reinforcement in R.C.C.	5525-1969
11.	Ordinary and low heat port land cement (Third Revision) (with amendment No 1 to 5	269-1976
12.	Portland slag cement (Third Revision) (with amendment No 1 to 5)	455-1976
	Short Title	B.I.S. Number
	Portland pozzolonas cement (Second Revision) (with amendment No 1 to 5)	1489-1976
	High Strength ordinary Portland cement (with amendment 1 to 4)	8112-1976
	Rapid hardening Portland cement (First Revision)(with amendment1 to 2)	8041-1978
	Coarse and fine aggregates from natural sources for concrete	383-1970
	Methods of tests for aggregates for concrete.	2386-1963
	Method for sampling of aggregates for concrete.	2430-1967
	Code of practice for plain and reinforced concrete (Third Revision, with amendment 1)	456-2000
	Code of practice for general construction of plain and reinforced concrete for dam and other massive structure	457-1957
	Method of test for strength of concrete (amendment 1)	516-1959
	Method of sampling and analysis of concrete	1199-1959
	General requirements for batch type concrete mixers (Second Revision)	1791-1985
	General requirement for concrete vibrators, immersion type. (Second Revision)	2505-1980
	Code of practice for concrete	3370-1965
	Method of test for permeability of cement mortar and concrete. (re-affirmed 1980)	3085-1965
	Short Title	B.I.S. Number
	Code of practice for use of immersion vibrators for consolidation of concrete. (First Revision)	3558-1983
	Concrete batching and mixing plant	4925-1968
	Glossary of terms related to cement concrete	6461 (Part-XIII)
	Method of test for determining setting time for concrete by penetration resistance	8142-1976
	Method of making, curing and determining compressive strength of accelerated cured concrete test specimens.	9013-1978
	Code of practice for corrosion protection of steel reinforcement in R.B. and R.C.C. construction.	9077-1979
	Admixtures of concrete.	9013-1979
	Recommendation for pressure grouting of rock foundations in river valley project. (First Revision)	6066-1984
	In addition to the above relevant B.I.S. publication, following other publications shall also be referred.	
1	Concrete manual	USBR
2	Design of Small Dams	USBR
3	Standard Specification and code of Practice for Road bridges	SP-I (S&T 1980
4	Design Aids for Reinforced Concrete To IS-456-1978	ASTM
5	C-15-80 Water retention test	ASTM
6	C-15-81 Type-2 Liquid membrane forming compound for curing concrete	ASTM
7	C-491-90 Water reducing agent	ASTM
8	C-494- Type Dewater reducing agent and set retarded	ASTM

The terms and conditions of the agreement have been read / explained to me and

Sri

Certified that I / We have clearly understand them.

CONTRACTOR

SUPERINTENDING ENGINEER