GOVERNMENT OF ODISHA
DEPARTMENT OF WATER RESOURCES

E - Procurement Notice No. ACEDC-CTC-15/2026-27

BID IDENTIFICATION NO. ACEDC-CTC/DD-CTC-05/2026-27

TENDER DOCUMENT
(TECHNICAL BID)
(COVER-I)

FOR THE WORK

Slope protection work in Gobari drainage channel near Jaleswarpur, Jerakhanda, Haribhaktapur, Brahmanmanijori, Lalitgiri in Mahanga block in Cuttack District.

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ADDITIONAL CHIEF ENGINEER
DRAINAGE CIRCLE KATAKA

NAME OF WORK: **Slope protection work in Gobari drainage channel near Jaleswarpur, Jerakhanda, Haribhaktapur, Brahmanmanijori, Lalitgiri in Mahanga block in Cuttack District**

BID IDENTIFICATION NO- **ACEDC-CTC/DD-CTC-05/2026-27**

ADDITIONAL CHIEF ENGINEER
DRAINAGE CIRCLE, KATAKA

Definitions

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 things of whatsoever nature required for the execution, or completion, maintenance of the works or temporary works but do 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 related to the above.

d) Contractor – means the particular person, firm or corporation with whom the contract has been made for executing the work.

e) Drawing – Means the drawings referred to in the specifications, any modifications of such drawings approved in writing by the **Executive Engineer, Drainage Division, kataka** 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 **Executive 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 Superintending Engineer, in-charge may have delegated certain duties, acting separately within the scope of particular duties entrusted to them.

g) Government – Means Government of Odisha, 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 terms “Specification” is used, apart from a specified standard specification, it shall mean the specification or plan prepared for a particular site as instructed to the contractor in executing that item of work.

k) Year - Means Financial Year.

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SECTION – 1

DETAILED TENDER CALL NOTICE

GOVT. OF ODISHA
DEPARTMENT OF WATER RESOURCES
OFFICE OF THE ADDITIONAL CHIEF ENGINEER, DRAINAGE CIRCLE,
KATAKA, GANDARPUR-753003
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E-PROCUREMENT NOTICE NO.ACEDC-CTC-15/2026-27
Email Id :-sedrainagecirclectc@gmail.com

1.	Name of Work	:	Slope protection work in Gobari drainage channel near Jaleswarpur, Jerakhanda, Haribhaktapur, Brahmanmanijori, Lalitgiri in Mahanga block in Cuttack District.
2.	Total number of Packages	:	01 no. of individual package.
3.	Estimated Cost	:	**Rs. 6,86,04,714/-**
4.	Bid Identification No.	:	ACEDC-CTC/DD-CTC-05/2026-27
5.	Period of completion	:	18 (Eighteen) Calendar months.
6.	Availability of Tender On - Line.	:	29.10.2026 at 12.30 hours to 12.11.2026 at 18.00 hours.
7.	Date of Opening of Technical Bid.	:	13.11.2026 at 11.00 hours in the O/o the Additional Chief Engineer, Drainage Circle, Kataka.
8.	Class of Contractor	:	"A" & Special Class
9.	Bid Security/EMD	:	**Rs.6,87,000/-** (To be remitted online)
10.	Cost of Tender paper	:	Rs.10,000/-
11.	Procurement Officer	:	Additional Chief Engineer, Drainage Circle ,Kataka, Gandarpur-753003

Further details can be seen from the Govt. web site www.tendersorissa.gov.in. Addendum / Corrigendum/ Cancellation if any required will be published only in Govt. web site www.tendersorissa.gov.in

Sd/-
ADDITIONAL CHIEF ENGINEER
DRAINAGE CIRCLE, KATAKA

GOVERNMENT OF ODISHA
DEPARTMENT OF WATER RESOURCES
OFFICE OF THE ADDITIONAL CHIEF ENGINEER, DRAINAGE CIRCLE, KATAKA, GANDARPUR-753003
INVITATION FOR BIDS (IFB)
BID IDENTIFICATION NO. **ACEDC-CTC/DD-CTC-05/2026-27**

The **Additional Chief Engineer, Drainage Circle, Cuttack** on behalf of Hon'ble Governor of Odisha invites on-line Percentage Rate tender through e-procurement for execution of the work mentioned below under DIP. The bid should be submitted on-line in the Government website www.tendersorissa.gov.in by eligible class of contractors as mentioned below registered with State Governments / Central Government / Government undertakings / MES / Railways / other statutory authorities for execution of works to be eventually drawn in P-1 form through on-line in the Government website www.tendersorissa.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 Govt. within a month of acceptance of bid.

1.	Name of work	:	**Slope protection work in Gobari drainage channel near Jaleswarpur, Jerakhanda, Haribhaktapur, Brahmanmanijori, Lalitgiri in Mahanga block in Cuttack District**
2.	Class of contractor	:	**'A' & "Special" Class (Odisha PWD or relevant class of other licensing Authority).**
3.	Approximate value of work	:	**Rs. 6,86,04,714.00**
4.	Time for completion	:	**18 (Eighteen) Calendar months.**
5.	EMD/ Bid Security Required	:	**Rs. 6,87,000/- (To be remitted online)**
6.	Cost of tender paper	:	Rs.10,000/- per set (Non refundable) only to be remitted/ transferred online as mentioned in Detailed Tender Call Notice with the Technical Bid (Cover-I).
7.	Mode of submission of Tender.	:	Tender should be submitted on-line in www.tendersorissa.gov.in
8.	Period of availability of tenders on-line/ date of time of bidding on-line/ last date of seeking clarification/ date of opening of tender papers.	:	Details as follows:-

Procurement officer.	Bid Identification No.	Availability of tender on-line for bidding		Last date & time of seeking tender clarification	Date & time of opening of Technical Bid
		From	To		
Additional Chief Engineer, DRAINAGE CIRCLE, KATAKA	**ACEDC-CTC/DD-CTC-05/2026-27**	**29.10.2026 12.30 hours**	**12.11.2026 18.00 hours**	**04.11.2026 18.00 hours**	**13.11.2026 at 11.00 hours**

Each set of bid document contains Technical Bid (Cover-I) and Price Bid (Cover-II) i.e. an intelligent bill of quantity in MS Excel format. The cover-I bid will be opened on **13.11.2026 at 11.00 hours** in the **O/o Additional Chief Engineer, DRAINAGE CIRCLE, KATAKA** in presence of the tenderer or their authorized agents. The bidders and guest users can view the summary of opening of Bids from any system. Contractors are not required to present during the bid opening at the opening location if they so desire. The bids can only be opened by the pre-designated officials only after the opening time mentioned in the bid. In the event of the specified date of bid opening being declared a holiday the bid will be opened at the appointed time and location in the next working day.

9. The bidders shall prepare the documents and upload the scanned typed document in PDF format and BOQ in excel format (or as specified in the portal) in appropriate place.
10. No tenderer will be permitted to furnish their tender in their own manuscript.
11. Bid Security / EMD @ 1%, of the amount put to tender i.e **Rs. 6,87,000/- for Bid Identification No. ACEDC-CTC/DD-CTC- 05/2026-27** as per OM No-18138 dated 5/12/18 must be accompanied with tender.
12. The lowest preferred bidder is required to produce documents in original i.e. Registration Certificate (R.C.), valid GST Registration Certificate, GSTIN, PAN Card, Affidavit regarding authenticity of the tender documents, certificate issued by the competent authorities required for fulfilling eligible criteria as specified in the bid document. NRC along with ownership and hiring of plants and machineries etc which were uploaded in the e-procurement portal during submission of tender to the inviting authority within the stipulated period i.e. within 5 days from date of opening of financial bid /lottery as applicable for verification. Bidder has to submit the original affidavit regarding authenticity of the documents to the inviting authority.
13. (a) Providing facilities to the Engineer contractor

i) As per works Department No.FR-11/2001/10003/00 Bhubaneswar dt. 24.5.01, 5% price preference allowed to the Engineer contractor in the tender rates has been withdrawn.

ii) The Engineer contractor shall have to execute the work if awarded to him under his direct supervision and he will not be allowed to execute such work through his Power of Attorney Holder.

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

(c) Engineering Contractor desirous to avail EMD exemption have to submit affidavit to the effect that they have not yet availed 03(three) nos. of EMD exemption during the financial year 2026-27 and to upload the same in the e-procurement portal. He has to show the original registration certificate to the tender inviting authority as and when required for confirmation. The Financial Year means the year of bid invitation. The bid will be liable to be disqualified for non submission of affidavit in support of EMD exemption in the manner mentioned above.

(d) The local Micro, Small and Medium Enterprises (MSME) will not be allowed for exemption of Bid Security / EMD at the time of participation in Tender with effect from 05.03.2025 vide O.M. No.4281 Dt.05.03.2025 of Govt. of Odisha, Works Department.

14. The work is to be completed in all respect within **18 (Eighteen)** calendar months from the date of issue of work order.

15. The plans specifications and scope for the work can be seen in the office of the **Executive Engineer, Drainage Division, kataka** during any working days.

16. The tenderers shall carefully study the tentative drawings and specifications applicable to the contract and all documents which form part of the agreement to be entered into by the accepted tenderer and detailed specifications for Odisha and other relevant specifications and drawings which are available with the tender document or with the **Executive Engineer, Drainage Division, Kataka.** Complaint at a future date that plans and specifications have not been seen by the tenderers cannot be entertained.

17. The bidder can resubmit his bid through online e-procurement mode out of which the system shall consider only the last bid submitted to the portal.

18. Every tenderer is expected before quoting his rates to inspect the site of the proposed work. He should also inspect the quarries and approach road to quarries and locality of the work and satisfy himself about the quality and availability of materials including the medical aids, labour and foodstuff etc. In every case the materials must comply with the relevant specifications. The contractors would, however, be responsible for procurement of materials from authorized sources and voluntarily disclose the source of procurement for the purpose of billing. Besides, the bidder would be required to submit the details of quarry for procurement while submitting the bids.

The tenderer 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 to and that he has taken into account all conditions, difficulties that may be encountered during its progress and to have quoted labour rates and materials, leads, 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. In the course of awarding a work, the Department may desire the analysis of the rate arrived for against any item(s) of work. The estimated cost is excluding GST. The rate of item basing on which estimate cost has been derived are excluding GST of different components to arrive such rates.As applicable.The rate of items are inclusive of EMF,DMF& additional charges of the queries as fixed by the District Collector & Magistrate, amount of which has to be deducted from each RA bill as similar as incase of royalty.

20. Each tenderer must quote a definite percentage upto two decimal points. Tenders containing indefinite terms such as estimated rates or schedule of rates or percentage basis will not be considered.

21. BOQ in MS Excel format shall be made available to the bidder through e-procurement portal. The bidder shall download that particular excel sheet and fill in the rates in figures at the appropriate locations. The total amounts shall be calculated automatically and shall be visible to the bidder. The bidder is not supposed to change or modify the format of the excel sheet in any form. Bidders are to submit only the original BOQ updated by publisher after entering the relevant fields without any alteration/deletion/modification. Multiple BOQ submission shall lead to cancellation of bid. In the percentage rate tender the bidder quoting zero value is valid and will be taken as schedule of rates.

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

23. If any further necessary information is required the bidder can seek clarification on the bids within 7 days from the start of sale of bid document i.e. **04.11.2026 up to 18.00 hours.** The employer is responsible for the queries raised by the bidder will be posted in the portal.

24. The bidder shall submit the documents in the designated locations of technical bid (Cover-I) and Financial bid (Cover-II). Submission of bid documents shall be effected by using DSC of appropriate class and thus shall be in encrypted form. 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 bid shall not be considered responsive and action as per

relevant clause shall be taken if he does not provide the required document or provides illegible documents. Clarity of the document may be ensured by taking out a sample printing.

25. All royalties payable, Income taxes & Surcharges as applicable will be borne by the contractor as admissible. It is implied that the quoted rates are inclusive of such elements.

26. Labour Welfare Cess @ 1% will be deducted from the work bill of the contractor as per resolution No. 12653 dt. 15.12.2008 of Labour& Employment Department, Government of ODISHA

27. Request for raising and lowering the rates or dealing with any point in connection with the tender will not be considered.

28. Conditional tenders will not be taken in to consideration.

29. The tender containing extraneous conditions not covered by the tender notice are liable for rejection and quotations should be strictly in accordance with the tender call notice. Any change in the wording will not be accepted.

30. It is allowed to modify the bid through the e-procurement portal. The bidder shall have to log in 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 latest bid only will be admitted. But the bidder should avoid modification of the bid at the last moment to avoid system failure or malfunction of the 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.

31. Withdrawal of bid is also allowed in the e-procurement portal. 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 officer inviting the bid and upload the scanned document from theportal in respective bid. The system shall not allow any withdrawal after expire of the closure of the bid.

32. The e-procurement portal 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.

33. All tenders received will remain valid for 90 days from the date of opening of the tender and validity of tenders can also be extended if required without any monetary compensation.

34. **No Relation Certificate**

The contractor shall have to furnish no relation certificate in attached form along with the tender to the effect that he is not related to any officer in the rank of an Assistant Engineer and above in the State P.W.D. or Under Secretary and above in the Water Resources 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 he/she shall be liable to make good the loss or damage resulting from such cancellation. **Failure to submit in prescribed format (Form-A) as enclosed in bid document is liable for rejection of tender.**

35. The tender may not (at the discretion of the competent authority) be considered unless accompanied by attested true copies of Registration of Firms/S.S.I. unit/ EPM rate contract holder certificate, PAN Card, valid GST Registration Certificate GSTIN as the case may be and the original certificates are to be produced if required in any subsequent date during processing of tender. Attested true copy of work done certificate is to be furnished along with the tender obtaining from the Superintending Engineer concerned.

36. The earnest money will be retained in the case of successful tenderer and will be dealt with as per the terms and condition of O.P.W.D. code.

37. The EMD will be forfeited in any of the following cases.

a) If the bidder withdraws the bid after bid opening during the period of bid validity.

b) If the bidder does not accept the correction of the bid price.

c) In the case of a successful bidder if the bidder fails within the specified time limit to

(i) Sign the agreement or

(ii) Furnish the required performance security.

d) If any of the statements, documents, certificate uploaded by the bidder through e-procurement portal, is found to be false / fabricated / bogus; the bidder will be black listed and his EMD / Bid Security will be forfeited.

38. Earlier, the provisions of threshold negative bid caps of 15% introduced in Appendix-IX, Clause 36 of OPWD Code Vol.-II had been abolished, and the system of incremental Additional Performance Security (APS) was adopted vide Works Department O.M. No.173/W., dated 03.01.2026 in the procurement of Works undertaken by Government of Odisha and its agencies to ensure that the procurement process results in a viable and successful manner. Subsequently, a clarification vide Works Department O.M. No. 632/W., dated 09.01.2026, and a corrigendum No. 14560/W.., dated 11.08.2026, were issued on the subject Considering the continuing trend of quoting of abnormally low bids in procurement o Works, Government, after careful consideration, have been pleased to further review the issue of abnormally low bid prices. Now, therefore, in supersession of Works Department O.M. No.173, dated 03.01.2026,O.M. No.632/W., dated 09.01.2026 and Corrigendum No.14560/W., dated 11.08.2026, it has been decided that the Additional Performance Security (APS) shall be obtained from the selected bidder, on an incremental basis, where the accepted bid price is lower than the Cost Put to Tender, in the following manner:

1. The Additional Performance Security (APS) shall be calculated as a percentage of the accepted Bid Price of the selected bidder.
2. For the purpose of determining the APS, the percentage by which the accepted Bid Price is lower than the Cost Put to Tender shall be calculated and rounded off.
3. The rounded-off percentage so determined shall be referred to as the Rounding Off of Percentage Less (ROPL) of accepted Bid Price and shall form the basis for calculation of

the APS in accordance with the applicable incremental rate prescribed under this Office Memorandum.

4. Rounding Off of Percentage Less (ROPL) of accepted Bid Price, i.e. the percentage by which the accepted Bid Price is less than the Cost Put to Tender, shall be as follows:

- Where the decimal fraction is less than 0.50, the percentage shall be rounded off to the next lower whole percentage.
- Where the decimal fraction is 0.50 or above, the percentage shall be rounded off to the next higher whole percentage.
- For avoidance of doubt, 13.25% less shall be reckoned as 13% less, whereas 13.50% less shall be reckoned as 14% less, for the purpose of determining. The applicable APS under this Office Memorandum.

5. Calculation of Additional Performance Security:

- **Where the accepted bid price is such that the ROPL is up to (-)10%**, no additional performance security is required. where the accepted bid price is such that the ROPL is below (-)10% but not below(-20%, the additional performance security percentage shall be incremented by0.2% for every percentage of ROPL below (-)10%; for avoidance of doubt, if ROPL is (-)13%, then APS shall be @0.2% x (13-10) = 0.6% of accepted bid price.
- **Where the accepted bid price is such that the ROPL is below (-)10% but not below(-)20%**, the additional performance security percentage shall be incremented by 0.3% for every percentage of ROPL below (-)20% in addition to 2% of the accepted bid price; for avoidance of doubt, if ROPL is (-)24%, then APS shall be @ 0.3% x(24-20) +2% = 1.2% + 2% = 3.2% of accepted bid price.
- **Where the accepted bid price is such that the ROPL is below (-)30% or more**, the additional performance security percentage shall be incremented by 0.5% for every percentage of ROPL below (-)30% in addition to 5% of the accepted bid price; for avoidance of doubt, if ROPL is (-)37%, then APS shall be @ 0.5% × (37-30) + 5% =3.5% + 5% = 8.5% of accepted bid price.

6. The additional performance security shall be treated as part of the performance security.
7. The provision of additional performance security shall be applicable to all forms of tender except Turnkey Tender.
8. Justification for abnormally low bids shall be scrutinized by the Technical Committee and recommended to the Competent Authority for Acceptance of Tender as per Para 6.3.15 of OPWD Code, Vol-I 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 toper form the contract at the offered price. Procuring Entity may, in such cases, seek written clarifications from the Bidder, including detailed price analysis 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 analysis, 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.

9. If more than one bid is quoted (decimal up to two numbers will be taken for all practical purposes, in percentage rate tenders) as lowest, 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 DAO will remain present.
10. If the rate quoted by the SC and ST Category Contractors comes to the rate quoted by the lowest bidder (decimal up to two numbers will be taken for all practical purposes, in percentage rate tenders) after availing 10% price preference as per Para 2 of Works Department Resolution No. 16262 dated 30.10.2018, the tender shall be finalized by the Tender Accepting Authority through a transparent lottery system along with other categories of contractors.
11. Accordingly, the relevant existing codal /contractual provision stands modified with effect from the date of issue of this O.M.
12. However, as regards the bidding process in which the tender has been floated before the issue of this Office Memorandum, the APS shall be calculated as per Works DepartmentO.M.No.173 dt 03.01.2026 r/w O.M. No.632/W., dated 09.01.2026 and Corrigendum No.14560/W., dated 11.08.2026.
13. In pursuance to, Works Deptt. OM No.2375/W, dt.03/03/2022, Additional Performance Security(APS) shall be refunded immediately on successful completion of the work within seven(07) days of issuance of Completion Certificate/ Provisional Completion Certificate.
14. This has been concurred in by the Finance Department vide OSWAS file No. **FIN-WFI-MISC-0102-2025**.

39. The tenderer whose tender is selected for acceptance shall within a period of seven days upon intimation being given to him of acceptance of his tender make an **Initial security deposit @2% of the accepted tender amount** in shape of NSC / Post Office Savings Bank Account / Post Office Time Deposit Account / Kisan Vikas Patra / Bank Guarantee in favour of **Executive Engineer, Drainage Division, kataka** from any Nationalized Schedule Bank in India counter guaranteed by its local Branch at Bhubaneswar / e-Bank Guarantee executed on the National e-Governance Services Limited (NeSL) Digital Document Execution Portal/Insurance surety bond issued by an Insurance company authorized by Insurance Regulatory and Development Authority of India(IRDAI) towards E.M.D. / Initial Security Deposit / any other Security Deposit from the Contractor or Supplier and sign agreement in the

P.W.D. form No.P1 (Schedule XLV No.61) for the fulfillment of the contract in the office of the **Executive Engineer, Drainage Division, Kataka.** Failure to enter into the required agreement and to make the security deposit as above shall entail forfeiture of the earnest money. 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.

40. The **security** will be refunded after one year on completion of the work in all respect provided the final bill is passed and will not carry any interest.

Any defect noticed during the period of one year after the actual date of completion shall be rectified by the contractor at his own cost. Failure to comply such rectification the cost involved to carry out the defective work shall be met from his dues available with Department. (Ref. works Deptt order No. 17823/WEdt.11.10.2006.

41. Before acceptance of tender, the successful bidder will be required to submit a work programme and milestone both physical and financial so as to complete the work within the stipulated time and in case of failure on the part of the agency to achieve the milestone liquidated damage will be imposed as per condition of contract (section-4)

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

43. The date of commencement of work shall be as notified in work order.

44. On signing the agreement the site will be handed over to the contractor for execution and completion of works in all respect.

45. On no account, the contract 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.

46. The authority reserves the right to make such increase or decrease in quantity of items of works mentioned in the scheduled 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/ vitiate the contract rates. The contractor shall not be entitled for any compensation on this account, except grant of extension of time where considered necessary.

47. That for the purpose of jurisdiction in the event of any dispute if any, the contract would be deemed to have been entered into within the State of Odisha 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 Odisha. Under section12 of contract labour (Regulation and Abolition Act 1970) the contractor who undertakes execution of work through labour, should produce valid license from licensing authority of labour department (labour license) to start the work.

48. The contractor shall be liable to fully indemnify the Department of any compensation under workmen compensation Act VII of 1993 on account of the workmen employed by the contractor and full amount of compensation paid will be recovered from the contractor. In the event of any claim sub-judice before any court of law, the claim amount shall be kept withheld till final disposal.
49. Contractor is required to abide by the fair wages clauses as introduced by Govt. of Odisha and will not pay less than the Fair wages fixed by Govt. to the labourers engaged by him for the work.
50. In case of any complaint by the labourer about the non-payment 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 at fault, Superintending Engineer may recover such amount due in any form from the contractor and pay such amount to the labourer directly under intimation to the local labour office of the Govt. The decision of the Superintending Engineer is final and binding on the contractor.
51. The contractor will have to submit the **Executive Engineer, Drainage Division, kataka** monthly return of labour both skilled and unskilled employed by him on the work.
52. The contractor should keep himself in touch with the Engineer-in-charge for smooth execution of the work and arrange adequate labour depending on the workload and working space available. No claim for detention for labour on any account will be entertained.
53. No compensation will be paid by the Department for any damage done by rain, flood, cyclone & earthquake tide or by any other natural calamities during the execution of the work.
54. It should be understood clearly that no claim whatsoever 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.
55. The tenderer 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 dated 25.1.1957.
56. The tenderer 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 & all other taxes including ferry tolls, conveyance charges and other cost on account of land and buildings including temporary building and temporary electric connection to work site as well as construction of coffer dam, construction of service road, diversion road and its maintenance till completion of work required by the tenderer for collection of materials, storage housing of staff other purpose of the work. No tenderer will however be liable to pay for temporary occupation of land owned by Govt. at the site

of the work. GST on works contract as applicable at the time of payment of R/A bill shall be paid extra over the gross amount of R/A bill.

(b) Labour camps or hutments including conservancy and sanitation arrangements upto the satisfaction of the local health authorities should be arranged by the contractor.

(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 from 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.

57. In case of delay in acquisition of land handing over possession of work site no compensation will be admissible but extension of time will be allowed if applied in prescribed format within due time to keep the contract in force.

58. If a contractor removes any Govt. material or stores supplied to him from the site of the work in contraception of the provision of this clause with a view to dispose of the same dishonestly, he shall be in addition to any other liability civil or criminal arising out of this contract be liable to pay penalty equivalent to (5) five times of the price of the materials cost. The penalty so imposed shall be recoverable at any time from the sum that may be due then or at any time thereafter become due to the contractor or from his security deposit or from his other available dues with the Department.

59. Over and above these conditions including the Technical specifications the terms, conditions, rules and regulations and specifications laid down in I.S.I. code are also binding on the part of the contractor.

60. Deduction of income tax at source and surcharge on income tax will be made from each running account bill for the work at the rate as per Income Tax Act and as amended from time to time(**present rate**….+ surcharge).

61. (a) The rates quoted by the contractor shall be deemed to be exclusive of GST 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 exclusive of GST that may be levied on turnover on works contract according to the Laws and Regulations as applicable from time to time.

(c) Deduction of GST at source will be made from each running account bill for the work prescribed by Odisha Goods & Service Tax Act-2017 or amended from time to time.

(d) 1 % (One percent) of the gross amount of the bill will be deducted from the contractor bill towards labour cess as per Odisha building and other construction workers (RE & CS) rules 2002 and Amendment during 2008 and as amended by Govt. from time to time.

62. The amount on royalties of different materials as utilized by the contractor in the work will be recovered from his bill, basing on the rate fixed by the Govt. or as amended from time to time during the period of execution.

63. Schedule of quantity accompanies the tender notice: It shall be definitely under stood that the Government do 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 omissions, deductions, additions or alternations shall in no way invalidate/ vitiate the contract and no extra monetary compensation will be entertained.

64. Sample of stone, metal, chips, sand, cement, moorum etc to be used are to be deposited noting the quarry under dated initial of the tenderer in the Office of the Concerned **SDO, Drainage Sub-Division No. - I, Kataka** before the procurement for testing and acceptance. The transportation & testing charges of construction materials will be borne by the contractor.

65. Items of works 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 of rate will be paid on actual analysis approved by the competent authorities prevailing during the period of execution of work.

66. 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 benchmarks, level pillars, profiles, benching and leveling the ground where required. The rates to be quoted should be for finished items of works inclusive of such incidental items of works.

67. After the work is finished all surplus materials and debris's should be removed from 100 Mtr. 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 shall be made neat and clean and this is inclusive of the rates quoted by him.

68. The contractor is to supply necessary labour and materials for the purpose of alignment lying recording of levels whenever required at his own cost.

69. The contractor should arrange necessary tools and plants such as Pumps, Excavator, Trucks, compressors, Tippers, batching plants, Concrete Mixer, steel shutter plates etc. required for the efficient execution work at his own cost. The running charges of such plant

and cost of consumables and conveyance are to be borne by the contractor. Any deviation from this may lead recession of contract.

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

71. Under no circumstances, interest is chargeable for the dues or any additional dues, if any payable for the work.

72. **An affidavit shall be furnished by the contractor** at the time of submission of tender paper about the authentication of tender documents. The scanned copy of the affidavit is to be uploaded through the e-procurement portal along with the technical bid. The affidavit in original is to be produced before the officer inviting tender after opening of the tender positively.

73. Prediction of flood/monsoon Damage:
The contractor shall make his own arrangement at his cost to shift the machineries, equipment's, materials, labourer and departmental machineries if hired by the contractor to a safe place prior to flood. The work shall have to be resumed after the flood come to normal. No extension of time for the completion of the work may be considered by the Department if the discontinuance of the work is beyond the reasonable attempts of the contractor to such eventualities.

74. The debris, sand and other materials, accumulated in the work area during flood shall be removed by the contractor as required for continuing the work at his own cost. By any chance, if any excavated portion that could not be filled up with concrete by the contractor, gets filled up during the monsoon period with earth such removal will not be paid again. The contractor will have to re-excavate the same at his own cost.

75. It shall be distinctly understood that it is entirely the responsibility of the contractor to make such arrangements may be required from time to time to protect the men, machinery, materials and the work under progress and work for which the measurements were recorded and payment made, against any damages either during working season or during the flood. The department accepts no liability, what so ever for any damage or loss of men, materials, machinery and type of hindrance caused to the progress of work.

76. The contractor should provide at his own cost adequate protection measures to the completed works at the end of working season or work in progress against such eventuality till completion and handing over the entire work to the Department.

77. Incase of discrepancy revealed between **P_1 form** and Detailed Tender Call Notice, condition in P_1 form shall prevail over the Detailed Tender Call Notice.

78. No claim for idle labour etc. on any account will be entertained by the Department.

79. The clause of printed form of **P_1 contract** with latest addition/ deletion/ corrections/ substitution etc. will also be binding.

80. If the 1st lowest bidder does not turn up for agreement after finalization of tender, then he shall be debarred from participation in bidding for three years & action will be taken to black list the contractor as per Codal provision in Annexure-II of Amendment to Para-3.4.14 Note-I of OPWD Code Vol-1.

81. Engineering contractor who is desirous to avail the facility of exemption of EMD is required to submit the affidavit (Duly signed by the Oath taking Commissioner/Notary) in online to the effect that he/she has not yet availed the facility for more than two works already awarded to him/her during the current financial year, failing which the tender will be liable for rejection.

82. **GENERAL INSTRUCTION TO CONTRACTORS (as per DOWR letter No.20415 dt.14.09.2015)**

(a) Any agency or contractor executing a work should be aware about the local festivals like MakarSankranti, Raja Sankranti, ChaitiParab, DandaNata or any such festivals which may effect the work schedule. Therefore, the contractor should engage more work forces during working period available at his disposal to complete the work as per schedule.

(b) In the peak summer season, working hour is curtailed by the Labour Department to avoid exposure to personnel to the scorching sun and heat. It is the duty of the agency to increase the number of work force and to employ the existing work force during morning and afternoon hours as per Government orders.

(C) Rainfall is a normal occurrence during monsoon in Odisha. So, unless there isunusually heavy rainfall resulting in a declared calamity, the contractor is not eligible for any extension of time. The contractor should plan the deployment of workforce and machinery, so as to complete the work as per schedule considering ordinary vagaries ofnature.

The same applies for borrow area ponding also. The contractor should foresee possible ponding of borrow area in monsoon and likewise lift more quantity of soil/ other materials during dry period, so as to complete the work as per schedule.

(d) The contractor should take up the work with due diligence in the acquired land without waiting for acquisition of entire land. This should be completed in proportionally less period depending on the quantum of available work front.

(e) The Agency should plan his work programme and mobilize men and machineries considering the canal closure programme of a particular system or area. Kharif / Rabi closure can't be imposed arbitrarily on the farmers as per the convenience of the agency. Closure of canal for the interest of work will be solely at the discretion of the Engineer-in-charge and can't be claimed as a matter of right.

(f) There will be always be standing crop before harvesting season as per crop schedule and this fact has to be clearly understood by the agency. Extension of time on this ground may not be considered by the Division officer.

(g) Only the day(s) of elections to the Local Bodies / Assembly / Parliament will be treated as non working day(s) (not attributable to the agency).

83. **REMOVAL OF CONTRACTOR'S MEN**

The Engineer in-Charge shall be at liberty to object to and require the contractor to remove forthwith from the works any person employed by the contractor in or about the execution or maintenance of the works, who in the opinion of the Engineer, misconducts himself, or is incompetent or negligent in the proper performance of his duties, or whose employment is otherwise considered by the Engineer to be undesirable and such person shall not be again employed upon the works without the written permission of the Engineer. Any person so removed from the works shall be replaced as soon as possible by a competent substitute approved by the Engineer in-Charge.

84. bribery and collusion

The Employer shall be entitled to terminate the contract and recover from the contractor the amount of any loss resulting from such termination if the contractor shall have offered or given to any person any gift or consideration of any kind as an inducement or regard for doing, or for agreeing to do, any action in relation to obtaining, or in the execution of the contract or any other contract with the Employer for showing favor to any person in relation to the contract or any other contract with the Employer, or if any of the like acts shall have been done by any person employed by the contractor or acting on his behalf (whether with or without the knowledge of the contractor) , or if the contractor or number of contractors whereby an agreed quotation or materials shall be offered as a bid to the employer by one or more Contractors.

85. THE CONTRACTOR HAS TO MENTION PERCENTAGE EXCESS OR LESS OVER THE AMOUNT PUT TO TENDER.

86. The contractor will write percentage excess or less up to two decimal point only if he writes the percentage excess or less up to more than two decimal point, the two decimal point shall only be considered without rounding up.

87. A bidder can submit only one tender paper for a particular work, submission of more than one tender paper by a bidder for a particular tender will liable for rejection of all such tender papers as per Works Department Letter No.4985/W dt.28.03.2007.

88. The single tender received in the first call shall be cancelled without opening of the bid. The acceptance of a single tender received, even after retendering should have prior approval of the next higher authority as per Works Department Memorandum No.16 dt.01.01.2015.

89. Joint ventures are not allowed in this tender.

90. Imposition of penalty in EOT / Deviation in case of complete / incomplete work will be as per the DOWR Letter No.699 dt.07.01.2021.

91. There will be no defect liability period for dredging works however, the agency has to follow basic principles of dredging to minimize siltation of dredged area.

92. Certificate / performance record issued by the Engineer-in-Charge (Divisional Officer) to State PSUs and Experience Certificate issued by State PSUs to their Sub-Contractor , shall

be taken into consideration, while examining qualifying criteria. The Experience Certificate issued by the state PSUs must carry the counter signature of the concerned Engineer-In-charge not below the rank of Executive Engineer/ Superintending Engineer. In that case, both the original State PSUs and the authorized Sub-Contractor will be treated as per prime contractor.

93. While determining the validity of tenders the following points shall be taken in to consideration by the authority empowered to accept tenders and his decision in the matter shall be final.
    (a) Any special condition which does not find place in the tender notice and which are not acceptable.
    (b) Indefinite conditions which will make it difficult for access to the financial implications.
    (c) Tenders being incomplete in some important respects.
    (d) Incomplete schedule of time for completion of the work.
    (e) Failure to furnish the specified bid security.
    (f) Tendered rates being unduly low and unworkable.
94. The bids of the technically qualified bidders will be opened for evaluation of the price bid.
95. The e-procurement portal system shall generate the award of the contract letter and intimate the bidder in his e-mail after acceptance of the tender.
96. The documents as per checklist and/or as requested to be submitted with the tender, failing which bid will not be considered for evaluation.
97. Defect Liability-The contractor shall be responsible to make good at his own expense, any defect which may develop or may be noticed before the expiry of twelve months from the certified date of completion and which is attributable to the contractor. All notices of such defect shall be given to the contractor promptly. In case the contractor fails to make good the defects, the Executive Engineer, Drainage Division, katakamay employ other persons to make good such defect, and all expenses consequent thereof and incidental thereto shall be borne by the contractor.

    In the event Government takes over portions of works, as they are completed, the liability of the contractor under this clause for those portions shall extend to a period of thirty six months from the actual date on which portions of the works are taken over.
98. Any balance of the security money outstanding after completion of the contract with the bidder may be made up by deduction of 5% of the amount of each payment to be made to him under clause of the condition of contract for work done under the contract
99. Authority reserves the right to reject any or all the tenders without assigning any reasons thereof.

Address of Communication :

Additional Chief Engineer,

Drainage Circle , Kataka
753003, Odisha ,
Ph.No- 8249875793 / 8895270605

Email-Id- sedrainagecirclectc@gmail.com

Sd/-

Additional Chief Engineer,
Drainage Circle, Kataka

GOVERNMENT OF ODISHA
DEPARTMENT OF WATER RESOURCES
OFFICE OF THE ADDITIONAL CHIEF ENGINEER, DRAINAGE CIRCLE,KATAKA,GANDARPUR-753003
INVITATION FOR BIDS (IFB)
BID IDENTIFICATION NO. ACEDC-CTC/DD-CTC- 05/2026-27

1. The work is to be completed in all respect within **18 (Eighteen)**
2. Schedule of quantities are accompanied in DTCN. It shall be definitely understood that the Government does not accept any responsibility for the correctness or completeness of this schedule and that this schedule is liable for alternation or omissions, deductions or alternations set forth in the conditions of the contract and such omissions, deductions, additions or alternations shall no way invalidate the contract and no extra monitory compensation, will be entertained.
3. Tenderer, whose tender is accepted must submit "programme of work" at the time of execution of agreement in prescribed format for approval of Engineer-in-charge.
4. As Goods and Service Tax has come into force with effect from 01.07.2017, GST as applicable will be paid extra after gross bill amount prepared vide Section-51 and Section-142 (11-C) of Odisha Goods and Service Tax Act 2017.
5. (a)The amount on royalties of different materials as utilized by the contractor in the work will be recovered from his bill, basing on the rate fixed by the Govt. or as amended from time to time during the period of execution with stipulation that the rates will not be less than the rates provided in the sanctioned estimate of the work.The rates for Royality, Environment Management Fund(EMF),District Mineral Foundation(DMF), and any other applicable statutory charges shall be adopted as per the provisions of the Odisha Minor Mineral Concession (OMMC) Rules,as amended from time to time.

   (b) Cost of empty cement bags as per consumption for the work will be recovered from each running bills/ final bill at prevailing Schedule of Rate, Govt. of Odisha.

   The rate of royalties adopted in the sanctioned estimate of the work is as follows: -

   1. Earth/ Sand/ Moorum – Rs. 35.00/ Cum.

   2. Stone & stone product – Rs. 130.00/Cum.

6. All the measurement of earthwork is to be done by level section measurement, which will be accepted by contractor from time to time. Prior written approval of the Executive Engineer will be taken in case of pit measurement with size of pits etc. where level section measurements cannot be made.

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7. For section measurement, levels will be taken in presence of the contractor at suitable interval and will be recorded in the level book before commencement of the work. The level should be accepted by the contractor and initial section be signed by him in token of acceptance. The final levels will be taken after completion of the work in presence of the contractor on the same position, as in the case of initial level. The measurement of earth work for filling sections will be recorded on finished compact section and payment will be made on level sections only as mentioned in the BOQ.

8. The measurement of fine dressing &turffing will be taken after satisfactory full growth of the turf and as well as survival of turf.

9. Borrowing earth is the entire responsibility of the contractor. No extra cost will be considered for whatsoever reason.

10. The language of all bidding documents and bidding process shall be in English for all purposes. The bid submitted in any other languages except English shall not be accepted.

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SECTION – 2

INFORMATION AND INSTRUCTION TO TENDERERS

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SECTION-2

Government orders

- Letter No-699 dated 07.01.2021 of DoWR, Govt. of Odisha.
- Office Memorandum No-4909/W dated 12.03. 2026 of Works Department, Govt of Odisha.
- Office Memorandum No-4718/W dated 11.03. 2026 of Works Department, Govt of Odisha.
- Proceedings of the meeting on Tender related matters of Department of Water Resources held on 20.10.2020 at 3.30 PM through virtual conference.
- Office Memorandum No-17941/W dated 08.10.2026 of Works Department, Govt of Odisha.
- Office Memorandum No-1739 dated 03.02.2023 of Works Department, Govt of Odisha.
- Office Memorandum No-4281 dated 05.03.2025 of Works Department, Govt of Odisha.
- Office Memorandum No-18138 dated 05.12.2018 of Works Department, Govt of Odisha.
- Letter No-01 dated 01.01.2019 of DoWR, Govt. of Odisha.
- Guidelines/ Procedures of e-Procurement Appendix-IX (A) of OPWD Code Vol-II
- Office Memorandum No-12366 dated 08.11.2013 of Works Department,Govt of Odisha.
- Office Memorandum No-16 dated 01.01.2015 of Works Department, Govt of Odisha.
- Electronic Receipt, Accounting and Reporting of cost of Tender Paper and Earnest Money Deposit on Submission of Bids (As per Office Memorandum No-17254 Dated 05.12.2017 of Works Department, Government of Odisha)

The provisions in above Office Memorandum / Letters of DoWR / Guidelines/Procedures of e-Procurement Appendix-IX (A) of OPWD Code Vol-II to be followed.

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1. Preparation of Tender Documents

The intending bidder shall log in to the e-procurement portal identified as http://tendersorissa.gov.in and download the Technical Bid (Cover-I) and Price Bid (Cover-II) in shape of a bill of quantity in MS Excel format. As per the requirement of the bid document the bidder will fill up the required informations and fill up the percentage in figures on the bill of quantity in MS Excel sheet. The bidder is to scan his registration certificate, valid GSTcertificate, GSTIN, PAN Card, Affidavit, No relation certificate and certificate issued by competent authorities required for full filling the eligibility criteria specified in the bid document for the work. The bidder is also required to scan the other documents as specified in the bid document.

2. Method of submission of Tender Documents

2.1 The bidder shall upload the scanned copy / copies of the documents and information as per requirement of the bid documents through the e-procurement portal. All documents and scanned copies are to be uploaded in the designated location technical bid (Cover-I) except the filled up intelligent excel sheet. The filled up intelligent bill of quantities in Excel format will be uploaded in the designated location of price bid (Cover-II).

The bidder is required to upload the required documents in appropriate location of Technical and Financial bid failing which the bid will be rejected. All the uploaded documents should be clear and legible. Before activating the submit button the clarity of the document may be ensured by taking out a sample copy. In the e-procurement tendering system the bidder is required only to submit the required information as per bid document instead of submitting the entire bid document. The “online” bidder shall digitally sign on all statements, documents, clarifications uploaded by him owning responsibility for their corrections / authenticity. If any of the information furnished by the bidder is found to be false / fabricated / bogus, the bidder will be black listed and his EMD / Bid Security will be forfeited.

2.2 The information required as per bid documents may be provided in the specified format annexed to the bid document.

2.3 If the intending bidder is an individual, the documents shall be digitally signed by the individual while uploading the tender through e-procurement portal.

2.4 If the intending tender is a proprietary firm, it shall be digitally signed by the proprietor while uploading the tender through e-procurement portal.

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2.5 If the intending bidder is a firm in partnership, it shall be digitally signed by a partner holding the power of attorney to bidder or to the firm in partnership in which case a certified copy of power of attorney shall accompany in the technical bid documents.

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

2.7 All witness and sureties shall be of person of status and probity and their full names, occupation and address shall be stated below in the appropriate place.

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

2.9 The period of execution is 18 (Eighteen) calendar months. Codal / contractual provisions regarding Price adjustment in Works contract is applicable as per O.M No-15847/W dated 19.11.2019 of Works Deptt., Govt. of Odisha.

2.10 If any further necessary information is required the bidder may seek clarification on the bids within 07 days from the date of sale of bid document.

3. Opening of Tender Documents.

The bids will be opened on **13.11.2026 at 11.00 hours** by the openers in the **Office of the Additional Chief Engineer, Drainage Circle ,Kataka** in the presence of bidders or their authorized representative, who wish to be present. The bidders and guest users can view the summery of opening of Bids from any system. Contractors are not required to present during the bid opening at the opening location if they so desire. The bids can only be opened by the pre-designated officials only after the opening time mentioned in the bid. In the event of the specified date of bid opening being declared a holiday the bid will be opened at the appointed time and location in the next working day.

4. Minimum Qualifying Criteria

Not required as per Govt. of Odisha, DOWR Letter No.25643/WR dated 03.11.2016.

a) The Contractor / Firm has/have to furnish affidavit along with the Bid in support of authenticity of the tender documents / blacklisting / validity of registration certificate etc. as per **Annexure-A.**

b) Affidavit should be furnished by Engineer Contractor / S.C. / S.T. Contractors / etc. for availing exemption / relaxation of E.M.D. facilities as per rules. Such bidders have to upload documentary evidence towards his eligibility for such exemption along-with Bid.

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.

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SECTION – 3
GENERAL RULES & DIRECTIONS

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ODISHA PUBLIC WORKS DEPARTMENT

(FORM P-1)

PERCENTAGE RATE TENDER AND CONTRACT FOR WORKS
GENERAL RULES & DIRECTIONS FOR THE GUIDANCE OF CONTRACTORS

1. The work proposed for execution by contract will be notified in a form of invitation to bid pasted on a board hung up in the office of the **Executive Engineer, Drainage Division, Kataka.**

   This notice will state the work to be carried out, the items and approximate quantities thereof as well as the date for submitting and opening bids also the amount of earnest money to be deposited and the amount of the security deposit by the successful bidder and the percentage if any to be deducted from bills. Copies of the specifications, designs and drawings and any other documents required in connection with the submission of bid signed for the purpose of identification by the Sub-divisional Officer/Divisional Officershall also be open for inspection by the contractor at the office of the Divisional Officer during office hours.
2. In the event of the bid 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 accounts of works, when executed by a firm must also be signed by the several partners, except where the contractors are described in their bid as a firm in which case the receipts must be signed in the name of the firm by one of the partners, or by some other person having authority to give effectual receipts for the firm.
4. The memorandum of work bided for and the memorandum of materials to be supplied by the Public Works Departments and their issue rates shall be filled in and completed in the office of the Sub-Divisional Officer/Divisional Officerbefore the tender from 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 bid.
5. The amount of earnest money to be deposited will be 1%.
6. Any person who submits a bid shall fill up the usual printed form stating at what rate he willing to undertake each item of the work. Incomplete bid and bid rate he / she willing to undertake each item of the work specified in the said form of invitation to bid or which the contain any other conditions of any sort, or omit to note the time within which the work can be finished or which are not accompanied by for the required earnest money will be liable to rejection. No single bid shall include more than one work, but contractors who wish to bid for two or more work shall submit a separate bid for each bid. Tender shall bear the name of the work to which they refer written outside the envelope, cash

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deposited for earnest money therein before mentioned shall be made in Government treasuries and the Challan thereof should be enclosed with the bid.

7. The Engineer or his duly authorized assistant will open the bid in the presence of any intending contractors who may be present at the time and will enter the amounts of the several bids in a comparative statement in a suitable form. In the event of bid being the earnest money forwarded therewith shall thereupon be returned to the bidder.
8. The Engineer shall have the right of rejecting all or any of the bids.
9. In the event of a bid being selected for acceptance the Engineer who opened the bids will, if he is competent to accept the bid, inform the bidder of the selected bid who shall there upon sign copies of the specification and other documentsmentioned in rules 1 and 4 for the purpose of identification and for his acceptance with the bid. The bidders of the selected bid shall also deposit the required amount of the security money within the prescribed time. If the bidder fails to deposit the required amount of the security money within the prescribed time the Engineer may reject the bid.

   If the Engineer is not competent to accept the bid himself, he will inform the bidder of the bid which he decides to recommend for acceptance, such bid shall thereupon sign forthwith copies of the specification and other documents mentioned in rules 1 and 4 and shall deposit the required amount of the security money within the prescribed time. The bid with the specification and other documents signed by the bidder will then be forwarded for acceptance to the Engineer who is competent to accept the same. If the said Engineer rejects the bid the security money deposited shall be refunded to the bidder.
10. When a bid is selected for acceptance, the bidder shall deposit the required amount of the security money in cash in any treasury and shall forward the Challan to the Divisional Officer. Government securities may be endorsed to the Divisional Officer 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. The amount of security money to be deposited by the bidder whose tender is selected for acceptance shall be 2 (two) percent of the tendered value of the work and towards this amount the earnest money already deposited by him shall be credited. At least half of this security inclusive of the earnest money shall be deposited the tenderer within such time as may be notified to him in writing by the officer opening the tender, failing which tender shall be liable to rejection.

    Any balance of the security money outstanding after completion of the contract with the bidder may be made up by deduction of 5% of the amount of each payment to be made to him under clause of the condition of contract for work done under the contract.

    Taxes as per provisions of Government shall be deducted from the bills of tenderer.

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12. When bid has been selected for acceptance and the required amount of the security money has been deposited the Engineer shall scrutinize pages of the form of item, rate bided 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 competent to accept the bid, sign the acceptance of the tenders or if he is not so competent, shall send the form for signature of the acceptance to the officer competent to accept it.

13.(i)A separate and specific bank account may be opened to keep the security deposits deducted from the running bills in any Nationalized Bank only in the name of the concerned Divisional Officer of the Division, but not in personal name.

(ii)The security amount so deposited should be withdrawn from the same account after completion of the defect liability period of the concerned work and after the work is found defect free in all respects.

14. If the tenderer backs out from the offer before acceptance of the tender by the competent authority, then he/she will be suspended for a period of three years.

15. T.D.S (Tax Deducted at Source) towards GST will be deducted at the rate prescribed in the Odisha Goods & Service Tax Act-2017 or as amended from time to time.

16. LabourCess @ 1% is to be deducted from the bill as per the notification No 12653 of Govt. of India.

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SECTION – 4

CONDITION OF CONTRACT

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CONDITION OF CONTRACT

Clause 1- All compensation or other sum of money payable by the contractor to Government under the terms of his 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 what so ever and in the event of his security deposit being reduced by reason of any such deduction or 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 been deducted from or raised by, sale of the security deposit or any part thereof.

Compensation for delay

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 on 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 the essence of the contract on the part of the contractor) and the contractor shall pay as compensation an amount equal to ½ % on the amount of the estimated cost if the whole work as shown by the tender for every day that the work remains un-commenced, or unfinished after the proper dates (The work should not be considered finished until such date as the Executive Engineer shall certify as the date on which the work is finished after necessary rectification of defects as pointed out by the Executive Engineer, or his authorised, agents are fully complied with by the contractor to the Executive Engineer's satisfaction). And further to ensure good progress during 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 work before one fourth of the whole time allowed under contract has elapsed one half of the work, before one half of such time has elapsed and three-forth of the work before three-forth 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

The work should not be considered finished until such date as the S.E. shall certify as the date on which the work is finished after necessary rectification of defects as pointed out by S.E. or his authorized agents are fully complied with by the contractor to the S.Es satisfaction.

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under the provision of this clause shall not exceed 10% on estimated cost of the work as shown in the tender.

(b) If there are possibilities 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 tendered himself liable to pay compensation amounting to the whole of his security deposit in the hands of Govt. (whether paid in one sum or deducted by installments) the Executive Engineer on behalf of the Governor of Odisha, shall have power to adopt any of the following courses as he may deem best suited to the interest of Government.

Action when whole security deposit is forfeited

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

In the event of any of the above courses being adopted by the Executive Engineer the contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials, 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 for any work thereto for actually performed under this contract, unless and until the Executive 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.

Amendment to clause 2(b) of item rate F2 Agreement vide Works Department order no.10639 dt.27.05.2005.

(ii) Security deposit of contractor for each work will be refunded only one year after the date of completion of work provided the final bill has been paid and defects if any rectified.

Clause-3 In any case in which any of the powers, conferred upon the Executive Engineer by clause 3 thereof, shall become exercisable and the same shall not be exercised the non-exercise thereof shall not constitute a waiver of the conditions here of and such powers shall not withstanding be exercisable in the event of any clause or clauses thereof he is declared liable to

Contractor remain liable to pay compensation if action not taken under clause-3

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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 Executive Engineer putting in force the powers vested in him under the preceding clause he may if he so desire, take possession of all or any tools, plants, materials & stores, in or upon the works or the site thereof 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 all wing 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 Executing Engineer whose certificate thereof shall be final; otherwise the Executive Engineer may give notice in writing to the contractor or his clerk of the works, foreman or other authorized agent required him to remove such tools, plants, materials or stores from the premises (within a time to be specified in such notice) and in the event of the contractor failing to comply with any requisition to the Executive Engineer may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and at his risk in all respects and the certificate of the Executive Engineer as to the expense of removal and the amount of proceeds and expense of any such sale shall be final and conclusive against the contractor.

Power to take possession of or require removal of or sell contractor plants

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

Extension of time

Clause – 5 On completion of thework,the contractor shall be furnished with a certificate by the Executive Engineer (here-in-after called the Engineer-in-charge) of such completion, but no such certificate be given, nor shall the work be considered to be complete until the contractor shall have removed from the area of premises (to be distinctly marked by the Executive Engineer in the site plan) on which the work

Final Certificate

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shall be executed, all scaffolding surplus materials and rubbish and cleaned off the dirt from all wood work doors, windows, walls, floors or other parts of any building in upon or about which the work is to be 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 PWD in accordance with the rules of the department whose measurements shall be binding and conclusive against the contractor the contractor shall fail to comply with the requirements of this clause as removal of scaffolding surplus materials and rubbish and cleaning of dirt on or before the date fixed for the completion of the work the Engineer-in-charge may at the expenses of the contractor, remove such scaffolding surplus materials and rubbish and dispose of the same as he thinks fit and clean off such darts as aforesaid and the contractor shall forth with pay the amount of all expenses incurred and shall have no claim in respect of any such scaffolding, or surplus materials as aforesaid except for any sum actually realized by the sale thereof.

Sub clause – 5 "If in the opinion of the Engineer-in-charge which shall be final and binding on the contractor occupation or utilization of a portion of the work completed in no way interferers with the progress for rest of the work, the same may be occupied or utilized by or on behalf of the Govt. under the written order of the Engineer-in-charge to get the defects of any rectified by the contractor at his (Contractor) own cost within six months from the date of completion of the whole work provided that the contractor will not be allowed any other concession either in the shape of extensions of stipulated period or any other monetary compensation on account of such occupation or use.

Clause – 6 A bill shall be submitted by the contractor each month on or before the date fixed by the Engineer-in-charge for all works executed in the previous month, and 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 day 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 a bill from such list which shall be binding on the contractor in all respects.Provided that, if any

Payment on intermediate certificate be regarded as advance & bill to be submitted monthly

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balance of the 7% 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 shall be regarded as payment 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 contract, or any part thereof in any respect, or the actual 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 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 offices of the P.W.D. in accordance with the rules of department in the presence of the contractor within one month of the date fixed for completion of the work.

Clause – 8 If the specification of estimate of the work provides for the use of any special description of materials to be supplied from the Engineer-in-charge's store, or it is required that the contractor shall use certain

Store supplied by Government

stores to be provided by the Engineer-in-Charge under the conditions of this contract [such materials and stores and the prices to be charged thereof as herein after mentioned being so far as practicable for the convenience of the contractor, but not so as in any way to control the meaning or effect of his contract are specified in the schedule or memorandum here to annexed] the contractor shall be supplied with such materials and store noted in the annexed schedule as are required from time to time to be used by him for the purposes of the contract only, and the value of the full quantity of materials and stores so supplied at the rates specified in the said schedule may be set off or deducted from any sums then due, or there after to become due to the contractor under the contract or otherwise or against or from the security deposit, or the proceed of sale thereof if the same is held in Government securities, the same or a sufficient portion thereof being in this case sold for the purpose. All materials supplied to the contractor shall remain the absoluteproperty of Government and shall not any account be removed from the site of the work, and shall at all timebe open to inspect by the Engineer-in-charge. Any such materials unused and in perfectly good condition at the time of completion or determination of the

NOT APPLICABLE

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contract shall be returned to the Engineer-in-charge's store, at the prevailing market rate or at the issue rate whichever is less if by a notice in writing under his hand he shall so require, but the contractor shall not be entitled to return any such aterials unless with such consent and shall have no claim for compensation no account of any such materials so supplied to him as aforesaid being unused by him, or for any wastage in or damage to any such materials.

Clause - 8(a) "If a contractor removes any materials or stock so supplied to him from the site of the work in contravention of the provision of this clause with a view to dispose of the same dishonestly, he shall in addition to any other liability, civil or criminal, arising out of his contract be liable to pay a penalty equivalent to five times the price of the said materials or stock according to the stipulated rate. The penalty so imposed shall be recoverable from any sum, that may be then, or at any time there after may become due to the contractor; or from his security deposit, or the proceeds of sale thereof".

Clause - 8 (b) Owing to difficulty in obtaining certain materials in the open market the Government have undertaken to supply materials specified in the schedule here to annexed. There may be delay in obtaining materials by the Department and the contractor is therefore required to keep himself in touch with day position regarding the supply of materials from the Engineer-in-charge and to so adjust the progress of the work that their labour may not remain idle nor may there be any other claim due to or arising from delay in obtaining the materials. It should be clearly understood that no monetary claim whatsoever shall be entertained by the Government on accountof delay in supplying materials. However extension of time for the completion of work can be granted on timely application by the contractor vide clause 4.

Works to be executed in accordance with specification drawing & orders etc.

NOT APPLICABLE

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 specification. The contractor shall also confirm exactly fully and faithful to the design, drawings & 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 inspection during office hours and the contractor shall, if he so require be entitle at his own expense to make or cause

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to make copies of the specifications and of all such designs, drawings and instructions as aforesaid.

Sub clause – 9 The work should be done strictly in accordance with the relevant specifications of the I.S.I. Codes. If the work is not covered by the specification of I.S.I. it should be done in accordance with the provision in the Odisha Detailed Standard Specifications (O.D.S.S). In case, the work is not covered by O.D.S.S. the work should be executed as per the instruction of the Engineer-in-charge.

Clause – 10 The Engineer-in-charge shall have power to make any alterations in or additions to the original specifications, drawing, designs and instruction that may appear to him to be necessary advisable during the progress of the work and the contractor shall be bound to carry out the work in accordance with any instruction which may be given to him in writing signed by the Engineer-in-charge and such alteration shall not invalidate the contract and at additional work which 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 respect on which he agreed to do the main work, and at the same time 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 includes bears to the original contract work and the certificate of the Engineer-in-charge shall be conclusive as to such proportions. And if the additional work includes any class of work for which no rate is specified in this contract then such class of work shall be carried out at the on rates specified on entered in the sanctioned schedule by rates of the locality during the period when the work being carried on and if such the district then the contractor shall within seven days of the date of his receipt of the order to carry out the work inform the Engineer-in-charge of the rate which is it his intention to charge for such class of work, and if the Engineer-in-charge does not agree to this rate he shall by notice in writing be at liberty to cancel his order to carry out such class or work and arrange to carry it out in such manner as he may consider advisable.

Alteration in specification and designs

Rates of works not in estimate of schedule or rate of the district.

Extension of time in consequence of alterations

Do not invalidate contract

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No deviations from the specification stipulated in the contract or additional items of work shall ordinarily be carried out by contractor nor shall any altered. Additional or substituted work to be carried out by him unless the rates on the substituted altered of 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 5th days of the following month accompanied by copy of the order in writing of the Engineer-in-charge for the additional work and that the contractor shall not be entitled to any payment in respect of such additional work if he fails to submit his claim within the aforesaid period.

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

Clause – 11 If at any time after the commencement of the work the Government of Odisha shall for anyreason 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 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 alternations having been made in the original specification, drawing, designs and instruction which shall involve any curtailment of the work as originally contemplated.

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

Clause – 12 If it shall appear to the Engineer-in-charge or his subordinate 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 or execution of the work are unsound or of a quality inferior to that contracted for or otherwise not in

Action and compensations payable in case of inferior / unsound work.

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accordance with the contract. The contractor shall on demand in writing from the Engineer-in-charge specifying the work materials or articles complained of not withstanding that the same may have been inadvertently passed, certified and paid forth with rectify or remove and reconstruct the work so specified in whole or part, as the case may require or as the case may be remove the materials or articles so specified and provided 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 10(Ten) days his failure to do shall continue and in the case of any such failure the Engineer-in-charge may rectify or remove and re-execute the work or remove and replace with other the materials or articles complained of as the case may be at the risk and the expense in all respects of the contractor.

Clause – 13 All work under or in course of execution or executed in pursuance of the contract shall at all times be open to the inspections and supervision of the Engineer-in-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 intention of Engineer-in-charge his subordinates to visit the works shall have been given to the contractor either himself be presented to receiveorders and instructions, or have a responsible agent duly accredited in writing present for that purpose, Orders given to the contractor's agent shall be considered to have the same force as if they had been given to the contractor himself.

Works to be open to inspection

Contractor or responsible agents to be present

Clause – 14 The contractor shall give not less than five day's notice in writing to the Engineer-in-charge or his subordinate in-charge of the work before covering up or otherwise placing beyond the reach of measurement of any work in order that 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 and shall not cover up or placed beyond the reach of measurement any work without the consent in

Notice to be given before work is covered up

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writing of the Engineer-in-charge or his subordinate in charge of work and if any work shall be cover up or placed beyond the reach of measurement without such notice having been given or consent obtained, the same shall be uncovered at thecontractor's expense, or in default thereof no payments or allowance shall be made for such work or the materials with which the same was executed.

Contractor liable for damage done and for imperfections for 12 months after certificate

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, enclosure or grass land, or cultivated ground continuous to the premises on the premises on which work or any part of it being executed, or if any damage shall happen to the work while in progress from any cause whatever or any imperfection become apparent in it within six Months from the date of final certificate of its completion 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 deduct the expense(of which the certificate of the Engineer-in-charge shall be final) from any sums that may be then or at 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.

Clause – 16 The contractor shall supply at his own cost all materials (except such special materials if any as may in accordance with the contract be supplied from the Engineer-in-charge's stores) plant, tools, appliances, implements, ladders, cordage, tackle scaffolding and temporary works requisite or proper 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 for the purpose of satisfying or complying with the requirement of the Engineer-in-charge as to any matter as to which under this 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 and materials necessary for the purpose of setting out

Contractor to supply plants, ladders, scaffolding etc.

And is liable for damages arising from non provision of lights, fencing etc.

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work and counting, weighing and assisting in the measurement of examination at any time and from time to time the work or materials, failing him so doing the same may be provided by the Engineer-in-chargeat the expenses 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 contractor shall also provide all necessary fencing and lights required to protect the public from accident and shall be bound to bear the expenses of defence to every suit, action or other proceeding at law that may be brought by any persons for injury sustained owing to 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.

Clause – 17 No female labour shall be employed within the limits of a cantonment. The contractor shall not employ for the purpose of this contract any labour below the age of twelve year, and shall pay to each labourer; for the work done by such labour, wages not less than the wage paid for similar work in the neighbourhood.

Explanation : Fair wages means wages whether for time or piece work prescribed by State P.W.D. provided that where higher rates have been prescribed under the minimum wages Act 1948 wages at such higher rates would constitute “Fair wages” [W/D No.22059 dated 16.8.77.

The Executive Engineer shall have the right to enquire into and decide any complaints alleging that the wages paid by the contractor to any labourer for the work done by such labourer 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 labourer employed by the contractor is below the age of twelve years and to refuse to allow any labourer whom he decides to be below the age of twelve years to be employed by the contractor.

Clause – 17 (a)

The contractor shall, if so required by the Engineer-in-Charge employ one more Engineering Graduate or Diploma holders as apprentices at his own cost ifthe cost of work as shown in the tender exceeds Rs.2,50,000/- The apprentices will be selected by the Engineering and the period of employment will commence

Not Applicable

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within one month after the date of work order and would last till the date when 90% of work is completed. The stipend to be paid to the apprentices, should not be less than Rs.213.50/- per day in case of graduate Engineers and not less than Rs.150/- per day in case of Diploma holders. The number of apprentices to be employed should be fixed by the Chief Engineer in a manner so that total expenditure does not exceed 1% of the tender cost of the work.

Clause – 17 (b) Special class Contractor shall employ under him one Graduate Engineer and Two Diploma Holders belonging to the State of Odisha. Likewise 'A' class contractor shall employ under him one Graduate Engineer or Two Diploma holders under the contractor. **Employment of Graduate Engineers & Diploma Holders** shall be full time & continuous and they should not be superannuated, retired, dismissed or removed personnel from any State Govt. or Central Govt. service/public undertakings, private companies and firms or be ineligible for employment in Government service. The contractor shall pay them monthly emoluments which shall not be less than the emoluments of the personnel of equivalent qualification employed under the State Government of Odisha. The Chief Engineer, Roads Odisha may however, assist the contractor with the names of such unemployed Graduate Engineer and Diploma holders if such services are sought for by the contractor. The names of such Engineering personnel appointed by the contractor should be intimated to the tendering authority along with the tender.

Each bill of the Special Class or '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 is employed by the contractor to the effect that the work executed as per the bill has been supervised by him.

Not Applicable

Clause – 18 The contract shall not be assigned or sublet without the written approval of the Executive Engineer and if thecontractor shall assign or sublet his contract or attempt so to do, or become insolvent or commence any insolvency proceedings or make any composition with his creditor or attempt so to do, or if any bride gratuity, gift loan, perquisite reward or advantage pecuniary otherwise shall either directly or indirectly be given, promised or offered by the contractor or any of his servants to agents to any public officer or

Work not to be sublet.

Contractor may be rescinded and security deposit forfeited subletting bribing or if contractor become in solvent

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person in the employee of Government in any way relating to his office of employment or if any such officer or person shall become in any way directly or indirectly in the contract, the Executive Engineer may thereupon by notice in writing rescind the contract and the security deposit of the contractor shall there upon stand forfeited and be absolutely at disposal of Government and the same consequences shall ensure as if the contract had been rescinded under clause 3 hereof and in addition the contractor, shall not be entitled to recover or be paid for any work therefore actually performed under the contract.

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.

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

Clause – 20 In the case of a tender by partners any changes 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-in-charge may be noticed in writing rescind the contract and the security deposit of the contractor shall there upon stand forfeited and be absolutely at the disposal of Government and the same consequences shall ensure as if the contract had been rescind under clause 3 hereof and in addition the contractor shall not be entitled to recover or be paid for any works therefore actually performed under the contract.

Changes in constitution of firm

Clause – 21 All works to be executed under the contract shall be executed under the direction and subject to the approval in all respects by Additional Chief Engineer of the circle 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

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Clause – 23 When the estimate on which a tender is made includes lump sums in respect of the items of work involved or the part of the workthe contractor shall be entitled to payment in respect to 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 sums payable to him under the provisions of this clause.

Lump sums in estimates

Clause – 24 In the case of any class of work for which there is no such specification as is mentioned in rule, 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.

Action where no specification

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

Definition of works

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 compensation Act. VIII of 1923, to any workmen employed in course of execution of any part of the work covered by this contract.

Clause – 27 That for 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 Odisha and it is agreed that neither party to the contract or agreement will be competent to bring a suit in regard to the matters covered by this contract at any place outside the State of Odisha.

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.

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Clause – 29 Sanitaryarrangements will be made by the contractor at his own cost for his labour camp.

Clause – 30 The contractor shall bear all taxes, income tax, royalty, fair weather charges and tollage, where ever necessary excluding GST.

Clause –31:- Price Adjustment (Office Memorandum No. 15847 dated 19.11.2019 of Works Department, Govt. of Odisha)

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 Paras.

(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.

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

(c) Following expression 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 the works executed for the 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 provision 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 formulas (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= $0.85 \times P_m / 100 \times R \times (M_i - M_o) / M_o$

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_o= 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.

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M_i= 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 of Cement Component

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

V_c= $0.85 \times P_c / 100 \times R \times (C_i - C_o) / C_o$

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

C_o= 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_i= 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

P_c= Percentage of Cement component of the work.

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

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

V_s= $0.85 \times P_s / 100 \times R \times (S_i - S_o) / S_o$

V_s= Increase or decrease in the cost of work during the month under consideration due to changes in rates for steel.

S_o= 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.

S_i= 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_s= Percentage of steel component of the work,

Note: For application of this clause, indexof(Mild steel long products) has been chosen to represent steel groups.

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31(a) (iv) Adjustment of Bitumen Component

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

V_b= 0.85 x P_b / 100 x R x (B_i – B_o) / B_o

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

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

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

P_b= Percentage of bitumen component of the work

Not Applicable

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

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

V_{pi}= 0.85 x P_{pi} / 100 x R x (Pi1 – P_{i0}) / P_{i0}

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

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

Pi1= All India whole sale 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 whole sale 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 the cost due to labour shall be paid in accordance with the following formula.

V_L = 0.85 x P_i /100 x R (L_i – L_o) / L_o

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

L_o = 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.

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

P_i = Percentage of labour component of the work.

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31(c) <u>Adjustment of POL(fuel and lubricant) Component</u>

Price adjustment for increase or decrease in the cost due to POL (fuel and lubricant) shall be paid in accordance with the following formula.

V_f= 0.85 x P_f/100 x R (F_i – F_o) / Fo

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_o= The official retail price of HighSpeed 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 Bids

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

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

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

31.(d) <u>Adjustment for Plant and Machinery Spares Component</u>

Price adjustment for increase or decrease in the cost of Plant and Machinery Spares procured by the contractor shall be paid in accordance with the following formula.

V_p= 0.85 x P_p/100 x R (P_i – P_o) / Po

V_p= Increase or decrease in the cost of work during the month under consideration due to changes in rates for Plant and Machinery Spares.

P_o = 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.

Pi_i= 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, the 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) 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” included in the list of WPI 1993-94 series are not mentioned as such in the WPI 2004-05 & 2011-12 series. Therefore, the following

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items in the WPI 2004-05 & 2011-12 series shall be considered corresponding to the items in WPI 1993-94 series.

Sl No	**Items in WPI 1993-94 series.**	**Items in WPI 2004-05 series.**	**Items in WPI 2011-12 series.**
1	Cement	Grey Cement	Ordinary Port Land Cement
2	Bars and rods	Rebars	Mild steel long products
3	Heavy Machinery and parts	Construction Machinery	Manufacture of machinery for mining, quarrying and 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 , furnish documents to be verified in such a manner as 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 alteration in the price of such material, wages of labour and / or price of POL 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.

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PERCENTAGE TABLE

Sl. No.	Category of works		% Component(Cost wise)		
			Labour (P_l)	POL (P_f)	Steel(Ps)+Cement(Pc)+ Bitumen(Pb)+ Pipes(Ppi)+ Plant & Machinery Spare & component(Pp) + 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 work	5	5	90
3	P.H.Work	Structural work	5	5	90
		Pipeline work	5	5	Pipe -70% *Machinery+ Other material-20%
		Sewer Line	5	5	Pipe -70% *Machinery+Other material-20%

***** Note-Further break up may be worked out considering the consumption of Cement, Steel, Bitumen Pipe and Plant and 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).

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Appendix to Bid

Schedule of Adjustment Data

[For 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]

Cl No 31 of F2 / P1 Contracts. Sl No	Index Description	Source of Index	Base Value*	Base Date*	Weightage of Item**
31(a)(i)	Other Materials	All India whole sale price index(all commodities) as published by the Economic Advisor, to the Govt. of India, Ministry of Commerce and Industry,			53.36%
31(a)(ii)	Cement	Whole sale 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,			16.20%
31(a)(iii)	Steel	Whole sale 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,			15.47%
31(a)(iv)	Bitumen (VG-30)	The official retail price in bulk bitumen at the nearest IOC / HPCL depot			_
31(a)(v)	Pipes	Whole sale 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,			_

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31(b)	Labour	Minimum wages notified by the Labour and Employee's State Insurance Department of Government of Odisha,India			5%
31(c)	POL	Official retail price of HSD at nearest IOC/ HPCL/ BPCL Consumer pump depot.			5%
31(d)	Plant and Machinery	Whole sale 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,			4.97%
			Total		100%

* Values 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 material 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.

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FAIR WAGE CLAUSE

Clause – 33(a) The contractor shall pay not less than fair wage to labourers engaged by him on the work.

Explanation: "Fair wages" means wages, whether for time or price 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 would constitute "Fair wages" (W.D. No.22059 dt.16.8.77)

(b) The contractor shall, notwithstanding 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 labours had been immediately employed by him.

(c) 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 or cause to be complied with all regulation made by Government in regard to payment of wages, wage period deductions from wages, recovery of wages not paid and deductions unauthorisedly made, maintenance of wages register, wage cards, publication of scale of wages and other terms of employment, inspection and submission of periodical returns and all other matters of a like nature.

(d) The Divisional Officer or Sub-Divisional Officer concerned shall have the right to deduct, from the money due to 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 the conditions of the contract for the benefit of 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 Odisha, the contractor shall be primarily liable for all payments to be made under and for the observance of the

(f) regulations aforesaid without prejudice to his right to claim indemnity from his sub-contractor.

(g) The regulations aforesaid shall be deemed to be part of this contract and any breach there of shall be breach of this contract.

(h) Under the provision of the Minimum Wages Act, 1948 & minimum wages (Central Rules, 1950) the contractor is bound to allow or cause, to allow to

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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. Divisional Officer or Sub-Divisional Officer concerned shall have the right to deduct the sum not paid on account of wages for weekly holiday to labourers and pay the same to the persons entitled there to from any money due to the contractor.

(i) The contractor shall at his own expense provide or arrange for the provision of foot wear for any labour doing cement mixing work and black topping 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.

(j) The contractor shall submit by the 4th&19th 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 to 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 contend of damage and injure 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 the Government a sum not exceeding Rs.478.00 for each default of materially incorrect statement. The amount levied as fine as per decision of the Divisional Officer shall be final in deducting from any bill due to contractor.

(k) In respect of all labour directly 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 arrangement for workers employed by the Odisha Public Works Department and its contractor. This will apply to work places having 50 or more workers.

(l) Maternity benefit rules for female worker 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 or 4 weeks following that day.

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

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2. Pay (i) **In case of Delivery: -** Leave pay during maternity leave will be at the rate of 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 date of which she gives notice that she expects to be confined or at the rate of **Rs.478.00** a day whichever is greater.

(ii) **In case of Miscarriage:** Leave pay at the rate of average daily earnings calculated on the total wages earned on the days when full time work was done during a period 3 months immediately preceding the date of such miscarriage,

Conditions of grant of Maternity Leave: No maternity leave benefit shall be admissible to a 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.

Clause - 34 The terms and conditions of the agreements have been read/ explained to me and certify that I/We clearly understand them.

1. ADDENDUM TO CONDITION OF CONTRACT:

1.1. The bidder / Tender whose bid has been accepted will be notified of the award by the Engineer-in-Charge prior to expiration of the validity period by cable, telex or facsimile confirmed by registered letter. This letter (hereinafter and in the conditions of contract called the ("Letter of Acceptance") will state the sum that the Engineer-in-Charge will pay the contractor in consideration of the execution, completion and maintenance of the works by the contractor as prescribed by the contract (hereinafter and in the contract called the "Contract Price").

1.2 The notification of award will constitute the formation of the contract, subject only to the furnishing of a performance security (ISD) and additional performance security in accordance with the provisions of the agreement.

1.3 The agreement will incorporate all agreements between the officer inviting the bid/Engineer-in-Charge and the successful bidder. Within 15 days following the notification of award alongwith the letter of acceptance, the successful bidder will sign the agreement and deliver it to the Engineer-in-Charge. Following documents shall form part of the agreement.

a)The notice inviting bid, all the documents including additional conditions specifications and drawing, if any, forming the bid as issued at the time of invitation of bid and acceptance thereof together with any correspondence leading thereto & required amount of performance security including **additional performance security**.

b)Standard P.W.D. Form P-1.

2. TIME CONTROL

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2.1 Progress of work and Re-scheduling programme

2.1.1. The Divisional Officer / Engineer-in-Charge shall issue the letter of acceptance to the successful contractor. The issue of the letter of acceptance shall be treated as closure of the bid process and commencement of the contract.

2.1.2. Within 15 days of issue of the letter of acceptance, the contractor shall submit to the Engineer-in-Charge for approval and programme commensurate to clause no 3 showing the general methods, arrangements, and timing for all the activities in the works along with monthly cash flow forecast.

2.1.3. To ensure good progress during the execution of the work the contractors shall be bound in all cases in which the time allowed for any work exceeds one month to complete, 1/4th of the whole of the work before 1/4th of the whole time allowed under the contract has elapsed, ½ of the whole of the work before ½ of the whole time allowed under the contract has elapsed, 3/4th of the whole of the work before 3/4th of the whole time allowed under the contract has elapsed.

2.1.4. If at any time it should appear to the Engineer-in-Charge that the actual progress of the works does not conform to the programme to which consent has been given, the contractor shall produce, at the request of to such programme necessary to ensure completion of the works within the time for completion. If the contractor does not submit an updated programme within this period, the Engineer-in-Charge may withhold the amount of 1% of the contract value from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdueprogramme has been submitted.

2.1.5. An update of the programme shall be a programme showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work including any changes to the sequence of the activities.

2.1.6. The Engineer-in-Charge's approval of the programme shall not after the contractor's obligations. The contractor may revise the programme and submit it to the Engineer-in-Charge again at any time. A revised programme is to show the effect of variations and compensation events.

2.2. Extension of the completion date.

2.2.1. The time allowed for execution of the work as specified in the contract data shall be the essence of the contract. The execution of the works shall commence from the 15th Day or such time period as mentioned in letter of award after the date on which the Engineer-in-Charge issues written orders to commence the work or from the date of handing over of the site whichever is later. If the contractor commits default in commencing the execution of the work as aforesaid,

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Government shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the earnest money and performance guarantee / security deposit absolutely.

2.2.2. As soon as possible after the contract is concluded the contractor shall submit a Time & Progress Chart for each milestone and get it approved by the Department. The Chart shall be prepared in direct relation to the time stated in the Contract documents for completion of items of the works, it shall indicate the forecast of the dates of commencement and completion of various trades of sections of the work and may be amended as necessary by agreement between the Engineer-in-Charge and the Contractor within the limitations of time imposed in the contract documents and further to ensure good progress during the execution of the work, the contractor shall in all cases in which the time allowed for any work, exceeds one month (save for special jobs for which a separate programme has been agreed upon) complete the work as per milestone given in contract data.

2.2.3. In case of delay occurred due to any of the reasons mentioned below, the contractor shall immediately give notice thereof in writing to the Engineer-in-Charge but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the works.

For

i. Abnormally bad weather, or
ii. Serious loss or damage by fire, or
iii. Civil commotion, local commotion of workmen, strike or lockout, bx officers any of the heads employed on the work, or
iv. Delay on the part of other contractors or trade men engaged by Engineer-in-Chief, in executing work not forming part of the contract.
v. In case of variation is issued which makes it impossible for completion to be achieved by the Intended Completion Data without the Contractor taking steps to accelerates the remaining work and which would cause the contractor to incur additional cost, or.
vi. Any other cause, which in the absolute discretion of the authority mentioned, in contract data is beyond the contractor's control.

2.2.4 Request for re-schedule and extension of time, to be eligible for consideration shall be made by the contractor in writing fourteen days of the happening of the

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event causing delay. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired.

2.2.5 In any such case a fair and reasonable extension of time for completion of work may be given. Such extension shall be communicated to the Contractor by the Engineer-in-Charge in writing. Within 3 months of the date of receipt of such request, non-application by the contractor for extension of time shall not be a bar for giving a fair and reasonable extension by the Engineer-in-Charge and this shall be binding on the contractor.

2.3 Compensation for delay.

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

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

The existing relevant provision in the original documents shall stand modified accordingly. Provided always that the total amount of compensation for delay to be paid under this condition shall not exceed 10% of the Tendered Value of work or to the Tendered Value of the item or group of items of work for which separate period of completion is originally given.

The amount of compensation may be adjusted or set-off against any sum payable to the Contractor under this or any other contract with the Government. In case the contractor does not achieve a particular milestone mentioned in contract data, or the rescheduled milestone (s) in items of Clause 2.5.the amount shown against that milestone shall be withheld, to be adjusted against the compensation levied at the final grant of extension of time. Withholding of this amount on failure to achieve a milestone, shall be automatic without any notice the contract. However, if the Contractor catches up with the progress of work on the subsequent milestone(s), the withheld amount shall be released. In case the contractor files to make up for the delay in subsequent milestone(s) amount

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mentioned against each milestone missed subsequently also shall be withheld. However, no interest whatsoever, shall be payable on such withheld amount.

2.4 **Management Meetings**

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

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

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SECTION – 5

SPECIAL CONDITION OF CONTRACT

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SPECIAL CONDITIONS

1) PERIOD OF COMPLETION

The period of completion shall be **18 (Eighteen) calendar months** as has been specified in Detail Tender Call Notice from the date of issue of notice to proceed with the work.

2) LANGUAGE OF THE CONTRACT

All written material and correspondence in connection with the contract shall be in English.

3) REFERENCE MARKS AND BENCH MARKS

The basic centerlines, reference points and benchmarks will be fixed by the Engineer-in-charge. The contractor shall establish at his cost, at suitable points, additional reference lines and bench marks as may be necessary. The contractor shall remain responsible for the sufficiency and accuracy of all his benchmark and reference lines. He shall take precaution to see that the lines, points bench marks by the Department are not disturbed by his work and shall make good such damage.

4) Defects Liability - The contractor shall be responsible to make good at his own expense, any defect which may develop or may be noticed before the expiry of twelve months from the certified date of completion and which is attributable to the contractor. All notices of such defect shall be given to the contractor promptly. In case the contractor fails to make good the defects, the **Executive Engineer, Drainage Division, kataka** may employ other persons to make good such defect, and all expenses consequent thereof and incidental thereto shall be borne by the contractor.

In the event Government takes over portions of works, as they are completed, the liability of the contractor under this clause for those portions shall extend to a period of thirty-six months from the actual date on which portions of the works are taken over. There will be no defect liability for dredging activity. However, the agency has to follow the basic principles of dredging to minimize siltation of dredged area,

5) Setting out works - The contractor shall be responsible for the correct setting out of all works at his cost. The contractor shall execute the work true to alignments grade and levels as shown in the drawings and directed by Engineer-in-charge of the work and shall check these at frequent intervals. The contractor shall provide all facilities like labour and instrument and shall co-operate with the Engineer-in-charge of work to check all alignments, grades, levels and dimension. Such checking shall not absolve the contractor of his own responsibility of maintaining the accuracy of the work.

6) ACCIDENTS.

It shall be the contractor's responsibility to protect against accidents on the works. He shall indemnify the Government against any claims for damage or for injury to person or property resulting from and in the course of work and also under the provision of the

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workmen's compensation Act. On the occurrence of an accident arising out of the works which results in death or which is so serious as to be likely to result in death, the contractor shall within twenty-four hours of such accident report in writing to the **Executive Engineer, Drainage Division, Kataka** ,he fact stating clearly and in sufficient details the circumstances of such accidents on the subsequent action. All other accidents on the works involving injuries to persons or damage to property other than that of the contractor shall be promptly reported to **Executive Engineer, Drainage Division, kataka** stating clearly and in sufficient details the facts and circumstances of the accidents and action taken. In all cases the contractor shall indemnify the Government against all loss or damage resulting in directly or indirectly from the contractor's failure to report in the manner aforesaid. This includes penalties or fines if any payable by the government as a consequence of failure to give notice under workman's compensation act or failure to confirm to the provisions of the said act in regard to such accident. In the event of an accident in respect of which compensation may become payable under the workman's compensation act - III of 1928 including all modifications thereof whether such compensation may become payable by the contractor or by the government as Principal Employer, the **Executive Engineer, Drainage Division, Kataka** may retain out of money due and payable to the contractor such sum or sums of money as may be in opinion of the **Executive Engineer, Drainage Division, Kataka** be sufficient to meet such liability. On receipt of award from the Labour Commissioner in regard to quantum of compensation, the difference in account will be reimbursed or recovered from the contractor.

7) ENGINEER-IN-CHARGE'S DECISION:

It shall be accepted as an inseparable part of the contract that in matters regarding materials, workmanship, removal of improper work, interpretation of the contract drawing and contract specification, mode of procedure and the carrying out of the work, the decision of the **Executive Engineer, Drainage Division, kataka** which shall be given in writing, shall be final and binding on the contractor. The Engineer-in-Charge's final authority applies to technical consideration and does not include decisions regarding sums due to or from the contractor for extension of time.

8) FORCE MAJEURE:

Neither party shall be liable to other for any loss or damages occurred by or arising out of acts of God. Such as unprecedented flood, volcanic eruption, earthquake or other convulsion of nature and other acts such as but restricted to general strikes, invasion, the act of foreign countries hostilities or war like operations before or after declaration of war, rebellion, military or usurped power which prevent performance of the contract and which could not have been foreseen or avoided by prudent person.

9) SETTLEMENT OF DISPUTE:

If the contractor considers any work demanded of him to be outside the requirements

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of the contract or considers any drawing record or ruling of the Engineer-in-charge, on any matter in connection with or arising out of the contract or carrying out of work to be unacceptable, he shall promptly ask the Engineer-in-charge in writing for written instruction or decision. There upon the Engineer-in-charge shall give his written instructions or decision within a period of thirty days of such request. Upon receipt of the written instructionor decision, the Contractor shall promptly proceed without delays to comply with such instruction or decision. If the Engineer-in-charge fails to give his instructions or decision in writing within a period of thirty days after being requested or if the contractor is dissatisfied with the instruction or decision of the Engineer-in-charge, the contractor may within thirty days after receiving instructions or decision of the Engineer-in-charge will approach to the higher authority who shall afford an opportunity to the contractor to be heard and to offer evidence in support of his appeal. The Authority shall give his decision within a period of thirty days after the contractor has given the said evidence in support of his appeal, which shall be binding upon the contractor.

10) CONSTRUCTION PROGRAME

i) The contractor shall have to submit the construction programme i.e. the plan and programme of execution for completion of the work in time, to the Engineer-in-Charge through the concerned sub-divisional officer to carry out the execution accordingly, subject to approval of the engineer-in-charge.

ii) If the revised construction programme is required on account of non-completion of work for which Extension of Time is required or for disruption of the execution in the stipulated period, the contractor shall have to submit the same to the Engineer-in-charge along with the Extension of Time application, if extension of time is prayed for or immediately after disruption of the execution mentioning the clear reasons, for revision of work programme. The decision of the Engineer-in-charge is final and binding on the contractor.

11) With reference to Clause-10 of the condition of contract authorized items of work not covered by the tender schedule will be paid at the current schedule of rates. In order to execute the nonscheduled of extra item of work, if the Engineer-in-charge thinks it proper that the additional work which is neither included in Schedule of Rate nor in contract is to be executed by the same Agency and the Rate offered by the contractor is not acceptable to Engineer-in-charge the rate of the said extra item of work shall be derived on the basis of actual field observation in consultation with the contractor with provision of contractor's profit @ 15 % as envisaged in Schedule of Rate of Water Resources Department, which shall be binding on both the parties. The programme of observation shall be mutually chalked out in a manner not to hamper the progress of work.

12. The contractor shall make at his own cost housing accommodation, drinking water and provide medical aid to the labourers engaged on the work.

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13. The right is reserved to increase or decrease in the quantities or items of works mentioned in the schedule attached to the tender notice as may be considered necessary for satisfactory completion of the contract work and such increase or decrease shall not be entitled for any compensation on this account except extension of time when considered necessary.

14. The work will be executed as per detailed standard specification of the Government of Orissa, Measurement of Moorum, gravel and stone product such as metals stones, boulders, rough stones and soiling stones, chips will be taken as per the above specification and payment will be made for the quantity arrived at after deduction of voids.

16. The contractor should keep himself in constant touch with the Engineer-in-charge for smooth execution of work and arrange for adequate labour and machineries depending on the workload and working place available. No claim for detention of labour or machineries on any account will be entertained.

17. The contractor will provide labour for giving alignments and profiles. All the materials necessary for such work will be supplied by the contractor and the profile is to be maintained at his own cost till the work is completed.

18. Suitable earth required for the work shall be arranged by the Contractor at his own cost and responsibility without any extra claim.

19. The rate for each work must include conveyance by all means, manual mechanical or both.

20. Approach road/diversion road to site of work if necessary is to be constructed and maintained and dismantled if required after completion of the work by the contractor at his own cost.

21. Under no circumstances, interest is chargeable for the dues or additional dues, if any, payable for the work.

22. **Measurement of each work shall be taken as follows:**

Before commencement of work initial levels and to determine the final measurement of the work, final levels of the embankment or drain or ground or structural work as the case may be, shall be taken in presence of the contractor. The contractor will satisfy himself about the correctness of the initial and final levels entered in the level book issued by the Engineer-in-charge and in token of the acceptance of the said levels the contractor shall have to sign in each page of level book in which the said levels are recorded. Basing on these levels, the gross quantity of work executed by the contractor shall be arrived at. After completion of the work the contractor shall be given a written notice to attend the final measurement. On receipt of the notice, the contractor must have to attend the final measurement failing which the measurement ex-parte shall be taken by the Engineer-in-charge, which shall be binding on the contractor. In case of the abandonment of work, if it is decided by the Engineer-in charge that

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final measurements of executed work shall be taken, the same procedure shall be followed as in case of final measurement on completion of work. It is the responsibility of the contractor to make the site free from all problems to take measurement by the **Divisional Officer**or his authorized officer. If in the opinion of the Engineer-in-Charge, the site is not free from problem for measurement and, and the contractor does not take any corrective measures to get rid of same, the Engineer-in-Charge shall make the site free from problem to take the measurement at the cost crediting to the contractor and certificate by the Engineer-in-Charge for the purpose shall be conclusive and binding.

23. The Engineer-in-charge shall decide the contractual matters in accordance with codes, rules and acts in vogue which shall be binding on both parties.

24. The work shall be executed in accordance with the technical specification which from a part of the contract.

25. All the measurements for earth work will be taken by section measurement.

26. The contractor should engage local labour on priority basis during execution of work.

27. For earth work in embankment there will be minimum distance of 15 m between toe of the embankment and borrow pit.

28. For earth work in cutting reaches, the spoils should be deposited as directed by the Engineer-in-charge. 20% of the work value will be with hold for run disposal of excavated earth in proper shape.

29. The tenderer should inspect the site of work before tendering of the work and incase of any clarification should consult with the Engineer-in-charge.

30. Any royalty or any other taxes if any for executing the work will be borne by the contractor.

31. There will not be any compensation or extension of time granted for reasons of inadequate cash flow. No compensation/claim for delay in sanction of deviation / extra items and payment thereof will be admissible to contractor.

32. The contractor shall sign as a token of final acceptance on the plans, sections for the work prior to taking up the work for execution.

33. Water required for work will be arranged by the contractor at his own cost and carriage cost of sinking of well or any other arrangement from any source whether artificial or natural shall not be paid. This is treated as inclusive in his item rates.

34. Under no circumstances, interest chargeable for the dues or any additional dues, (if any) payable for the work shall be entertained.

35. It shall be distinctly understood that it is entirely the responsibility of the contractor to make such arrangements as may be required from time to time to protect the men, machinery, materials, and the work under progress and work for which the measurements were recorded and payment made against damages either during working season or during the rainy season.

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The department accepts no liability, whatsoever for any damage or loss of men, materials, machinery and work or any hindrance caused to the progress of work.

36. After completion of the work the contractor shall arrange at his own cost all requisite equipments and labour for testing the work and bear the entire cost of such test.

37. All correspondence with the tenderer will be made through post in the address given in the tender. The tenderer must mention in the tender, his correct postal address where letters can be delivered to him. The department will not held responsible for non-receipt of any letter by the tenderer either for wrong address given by him or for his absence from the given address. The contractor must intimate any change in address for correspondence.

38. If there will be any delay in land acquisition no compensation or claim on that account will be entertained, full extension of time will be granted if considered reasonable.

39. Construction of coffer dams for islands or the works of open excavation or dressing required for construction of structure and approach channel should be included in the rates.

40. The contractor should take all precautions to protect the structures from flood damages at his own cost during the period of executions. Damages if any caused by the probable flood during monsoon till completion and handing over of entire work will be made by the contractor at his own cost.

41. During & after execution of the work the contractor shall arrange at his own cost all requisite equipments and labour for testing the work and bear the entire cost of test.

42. The authority reserves the right to revalue the contract with due notice.

43. In case the contractor fails to commence the work specified in the tender documents on the 15th day or such time period as mentioned in letter of award, after the date on which the Engineer-in-charge issues written orders to commence the work, or form the date of handing over of the site, whichever is later, the Government shall, without prejudice to any other right or remedy, be at liberty to forfeit whole of the earnest money absolutely.

44. Authority reserves right to revoke the contract with due notice.

45.The works may need to be executed during night without non-interruption, when required.

46.The excavated materials which are not useful in construction works to be disposed off in low laying area as indicated by Engineer-in-charge.

47 The stockyard of machineries and installation of batching plant, concrete mixer may vary place to place as per site condition which needs to be take care by the bidder at **his own cost.**

48.Keeping all these conditions, rates should be quoted by the Contractor.

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GOVERNMENT OF ODISHA

WORKS DEPARTMENT

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OFFICE MEMORANDUM

No. 07584000092025 4718 /W, Bhubaneswar, Dated, 11.3.26

Government has been pleased to include the provision of Defect Liability Period and Maintenance period in all the contract agreements of road and Bridge projects on State PWD roads to be taken up under the Works Department for providing a quality road network across the State.

Sub: Provision of Defect Liability Period and maintenance period in all the contract agreements of Road and Bridge Projects on State PWD Roads.

1 **Defect Liability Period (DLP)**

1. The Defect Liability Period (DLP) is a specified duration after the completion and handing over of a project during which the contractor remains responsible for the proper performance of the work executed. During this period, the contractor shall repair or rectify all defects and deficiencies, or failures that arise due to plant, materials or workmanship, design shortcomings (where applicable), timely maintenance during construction of the project by the contractor or construction-related issues observed by the competent authority must be rectified by the contractor at their own cost.

2.The DLP serves as an assurance to the competent Authority that the infrastructure, whether roads/ bridges, continues to perform satisfactorily for a defined time.

3.It also ensures accountability by binding the contractor to maintain quality standards even after physical completion. During the DLP, the contractor is obligated to carry out necessary repairs, replacements, or maintenance activities within the timelines specified in the contract, without any additional financial burden on the Employer/Authority.

4.The Contractor shall be responsible for all the Defects and deficiencies, except usual wear and tear in the state PWD roads or any Section thereof, till the expiry of a period commencing from the date of Completion Certificate (the "Defects Liability Period") as specified below:

(a) 5 (five) years from the date of completion in case of a road being constructed with flexible pavement, including minor bridge and other structures;

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(b) 10 (ten) years from the date of completion in case of road being constructed with rigid pavement, including Major bridge /ROB and other structures;

(c) 10 (ten) years from the date of completion in case of all stand-alone structures, e.g. Major Bridges/ROB/ and Tunnels;

(d) 10 (ten) years from the date of completion for the stretches where new technology/ material has been/ is proposed to be used.

(e) 10 (ten) years from the date of completion for the stretches for flexible pavement having major bridges/ROBs and other structures /Flexible pavement with rigid pavement having major bridges/ROBs and other structures has been/ is proposed to be used.

5. The Defect Liability Period shall commence from the date of issuance of the Completion Certificate. For the avoidance of any doubt, any repairs or restoration because of usual wear or tear in the Project Highway or any Section thereof shall form a part of the Maintenance obligations of the Contractor.

1.1 Remedying Defects

The Contractor shall repair or rectify all Defects and deficiencies observed by the Competent Authority during the Defects Liability Period within a period of 15 (fifteen) days from the date of notice issued by the Competent Authority in this behalf, or within such reasonable period as may be determined by the Competent Authority at the request of the Contractor, in accordance with Good Industry Practice.

1.2 Cost of remedying Defects

Any repair or rectification undertaken in accordance with the provisions of remedying defects, including any additional testing, shall be carried out by the Contractor at its own risk and cost, to the extent that such rectification or repair is attributable to:

1. The design of the Project
2. Plant, Materials or workmanship not being in accordance with this Agreement and the Specifications and Standards;
3. improper maintenance during the construction of the road by the Contractor;

1.3 Contractor's failure to rectify Defects

If the Contractor fails to repair or rectify such Defect or deficiency observed by the competent authority during the Defects Liability Period within a period of 15 (fifteen) days from the date of notice issued by the competent authority in this behalf, in accordance with Good Industry Practice, the competent authority shall be entitled to get the same repaired, rectified or remedied at the Contractor's cost to make the Project Road/Bridge conform to the Specifications and Standards and the provisions of the Agreement. All costs consequent thereon shall, after due consultation with the Engineer-In-Charge and the Contractor, be determined by the competent authority.

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The cost so determined and an amount equal to 20% (twenty per cent) of the cost as Damages shall be recoverable by the competent authority from the Contractor and may be deducted by the competent authority from any monies due to the Contractor.

1.4 Extension of Defects Liability Period

The Defects Liability Period shall be deemed to be extended till the identified Defects and deficiencies observed by the competent authority during the Defects Liability Period have been remedied or rectified.

2. Maintenance

1. The central objective of maintenance activities is to ensure the ongoing functionality and safety of the road network, specifically by permitting safe, smooth and uninterrupted flow of traffic on the road.

2. Efficient maintenance requires the constant operation and upkeep of necessary support systems. The Contractor is responsible for the operation and maintenance of all communication, patrolling, and administrative systems required for the efficient maintenance of the road/ bridges and other structures.

3. A critical component of maintenance involves safeguarding the integrity of the Project site. The Contractor is responsible for continuous monitoring and must inform the Authority of any unauthorized use of the State PWD road and any encroachments on the road/ bridges and other structures.

2.1 Maintenance Obligations of the contractor and its payment

The contractor shall maintain the project including road, Minor Bridge and any other structure/road including Major bridge or ROB projects /standalone bridge projects/Tunnel projects for a period of 5(five)/10(Ten) years, corresponding to the defects Liability Period, commencing from the date of the Completion Certificate (the Maintenance Period).

For the performance of maintenance obligations, the contractor shall be paid:

1. For flexible pavement with 5 years Maintenance Period including minor bridge and other structures: no maintenance charges shall be paid for the first year; 0.50%of the Contract Price each for the second, third and fourth year and 1% of the contract price for the fifth year.
2. For rigid pavement with 10 years Maintenance Period, including Minor/Major bridges and other structures: 0.25% of the Contract Price each for the first, second and third year, 0.5% of the Contract Price each for fourth, fifth, sixth and seventh year, and 0.75% of the Contract Price each for eighth, ninth and tenth year.
3. For stand-alone Bridge/ Tunnel works with 10 years Maintenance Period: the contractor shall be paid @ 0.25% of the Contract Price each for the first five

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years and @ 0.50% of the Contract Price each for the remaining period of five years.

4. For flexible pavement with rigid pavement having major bridges or ROBs / flexible pavement having major bridges or ROBs with 10 years Maintenance Period: the contractor shall be paid @ 0.25% of the Contract Price each for the first five years and @ 0.50% of the Contract Price each for the remaining period of five years.

The above amount for the performance of Contractors' Maintenance obligations shall be, inclusive of all taxes.

2.2 During the Maintenance Period, the competent authority shall provide to the Contractor access to the Site for Maintenance. The obligations of the Contractor hereunder shall include:

1. permitting safe, smooth and uninterrupted flow of traffic on the road/bridge;
2. undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, road signs and other traffic control devices;
3. undertaking repairs to structures;
4. informing the Authority of any unauthorized use of the road;
5. informing the Authority of any encroachments on the road; and
6. operation and maintenance of all communication, patrolling, and administrative systems necessary for the efficient maintenance of the road in accordance with the provisions of the Agreement.

2.3 In respect of any Defect or deficiency not specified in the **maintenance Schedule at Annexure-I**, the Contractor shall, at its own cost, undertake repair or rectification in accordance with Good Industry Practice, save and except to the extent that such Defect or deficiency shall have arisen on account of any willful default or neglect of the Competent Authority or a Force Majeure Event.

2.4 The Contractor shall remove promptly from the road any waste materials (including hazardous materials and waste water), rubbish and other debris (including, without limitation, accident debris) and keep the road in a clean, tidy and orderly condition, and in conformity with the Applicable Laws, Applicable Permits and Good Industry Practice for maintenance of the road during the subsistence of the Agreement.

2.5 The Contractor shall ensure and procure that at all times during the Maintenance Period, the Project Road conforms to the maintenance requirements set forth in the maintenance Schedule (the "Maintenance Requirements").

2.6 The Contractor shall prepare a monthly maintenance programme (the "Maintenance Programme") in consultation with the competent authority and submit

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the same to the competent authority not later than 10 (ten) days prior to the commencement of the month in which the Maintenance is to be carried out. For this purpose, a joint monthly inspection by the Contractor and the competent authority shall be undertaken. The Maintenance Programme shall contain the following:

1. The condition of the road in the format prescribed by the Competent Authority :
2. The proposed maintenance Works; and
3. Deployment of resources for maintenance Works.

2.7 Safety, vehicle breakdowns and accidents

1. The Contractor shall ensure safe conditions for the Users, and in the event of unsafe conditions, lane closures, diversions, vehicle breakdowns and accidents, it shall follow the relevant operating procedures for removal of obstruction and debris without delay. Such procedures shall conform to the provisions of the Agreement, Applicable Laws, Applicable Permits and Good Industry Practice for maintenance of the road during the subsistence of the Agreement.

2. The Contractor shall maintain and operate a round-the-clock vehicle rescue post with 1 (one) mobile crane having the capacity to lift a truck with a Gross Vehicle Weight of 30,000 (thirty thousand) kilograms; and such post shall be located at [Chainage to be mentioned during drawl of agreement]. The Contractor shall promptly remove any damaged vehicles and debris from the road to enable safe movement of traffic and shall report all accidents to the police forthwith.

2.8 Lane closure

1. The Contractor shall not close any lane of the road for undertaking maintenance works except with the prior written approval of the competent authority. Such approval shall be sought by the Contractor through a written request to be made at least 10 (ten) days before the proposed closure of the lane and shall be accompanied by particulars thereof. Within 5(five) business days of receiving such a request, the competent authority shall grant permission with such modifications as it may deem necessary, and a copy of such permission shall be sent to the competent Authority.

2. Upon receiving the permission pursuant to above clause, the Contractor shall be entitled to close the designated lane for the period specified therein, and for all lane closures extending a continuous period of 48 (forty-eight) hours, the Contractor shall, in the event of any delay in re-opening such lane, for every stretch of 250 (two hundred and fifty) metres, or part thereof, pay Damages to

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the competent authority calculated at the rate of 0.1% (zero point one per cent) of the monthly maintenance payment for each day of delay until the lane has been re-opened for traffic. In the event of any delay in re-opening such lanes or in the event of emergency decommissioning and closure to traffic of the whole or any part of the road due to failure of the Contractor, the Contractor shall pay damages to the competent Authority at double the above rate, without prejudice the rights of the Authority under this Agreement including declaration of the contractor as Non-Performer thereof.

2.9 Reduction of payment by Competent Authority for non-performance of Maintenance obligations

1. In the event that the Contractor fails to repair or rectify any Defect or deficiency set forth in maintenance schedule within the period specified therein, it shall be deemed as failure of performance of Maintenance obligations by the Contractor and the competent Authority shall be entitled to effect reduction in monthly lump sum payment for maintenance in accordance with **Annexure-II**, without prejudice to the rights of the Authority under the Agreement, **including declaration of the contractor as Non-Performer thereof.**

2. If the nature and extent of any Defect justify more time for its repair or rectification than the time specified in the maintenance schedule, the Contractor shall be entitled to additional time in conformity with Good Industry Practice. Such additional time shall be determined by the Competent Authority and conveyed to the Contractor and the Authority with reasons thereof.

2.10 Competent Authority's right to take remedial measures

In the event the Contractor does not maintain and/or repair the road or any part thereof in conformity with the Maintenance Requirements, the Maintenance Manual or the Maintenance Programme, as the case may be, and fails to commence remedial works within 15 (fifteen) days of receipt of the Maintenance Inspection Report or a notice in this behalf from Competent Authority, as the case may be, the competent Authority shall, without prejudice to its rights under the Agreement **including declaration of the contractor as Non-Performer** thereof, be entitled to undertake such remedial measures at the cost of the Contractor, and to recover its cost from the Contractor. **In addition to recovery of the aforesaid cost, a sum equal to 20% (twenty per cent) of such cost shall be paid by the Contractor to the Competent Authority as Damages.**

Save as otherwise provided in the Agreement, in the event that any of the defaults specified in the agreement shall have occurred, and the Contractor fails to cure the default within the Cure Period set forth in the agreement, or where no Cure

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Period is specified, then **within a Cure Period of 60 (sixty) days**, the Contractor shall be deemed to be in default of the Agreement (the "Contractor Default"), unless the default has occurred solely as a result of any breach of this Agreement by the Authority or due to Force Majeure. The defaults referred to herein shall include that the Contractor **fails or stops Work and/or the Maintenance for 30 (thirty) days** without reflecting the same in the current programme and such stoppage has not been authorised by the Competent Authority.

2.11 Restoration of loss or damage to Road

In the event that the road or any part thereof suffers any loss or damage during the Maintenance from any cause attributable to the Contractor, the Contractor shall, at its cost and expense, rectify and remedy such loss or damage forthwith so that the road conforms to the provisions of the Agreement.

2.12 Overriding powers of the Competent Authority

1. If in the reasonable opinion of the competent Authority, the Contractor is in material breach of its obligations under this Agreement and, in particular, the Maintenance Requirements, and such breach is causing or likely to cause material hardship or danger to the Users and pedestrians, the competent Authority may, without prejudice to any of its rights under the Agreement including declaration of the contractor as Non-Performer thereof, by notice require the Contractor to take reasonable measures immediately for rectifying or removing such hardship or danger, as the case may be.

2. In the event that the Contractor, upon notice from the competent authority, fails to rectify or remove any hardship or danger within a reasonable period, the competent Authority may exercise overriding powers and take over the performance of any or all the obligations of the Contractor to the extent deemed necessary by it for rectifying or removing such hardship or danger; provided that the exercise of such overriding powers by the competent Authority shall be of no greater scope and of no longer duration than is reasonably required hereunder; provided further that any costs and expenses incurred by the competent Authority in discharge of its obligations hereunder shall be recovered by the competent Authority from the Contractor, and the competent Authority shall be entitled to deduct any such costs and expenses incurred from the payments due to the Contractor for the performance of its Maintenance obligations.

2.13 In the event of a national emergency, civil commotion or any other circumstances the competent Authority may take over the performance of any or all the obligations of the Contractor to the extent deemed necessary by it, and exercise such control over the road or give such directions to the Contractor as may be

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deemed necessary; provided that the exercise of such overriding powers by the competent Authority shall be of no greater scope and of no longer duration than is reasonably required in the circumstances which caused the exercise of such overriding power by the competent Authority. For the avoidance of doubt, it is agreed that the consequences of such action shall be dealt in accordance with the provisions of Force majeure. It is also agreed that the Contractor shall comply with such instructions as the competent Authority may issue in pursuance of the provisions of this Clause and shall provide assistance and cooperation to the Authority, on a best effort basis, for performance of its obligations hereunder.

2.14 Taking over Certificate

The Maintenance Requirements set forth in the maintenance schedule having been duly carried out during the Maintenance Period, as set forth in the agreement which has expired and the competent authority determining the Tests on Completion of Maintenance to be successful.

2.15 Supervision and Monitoring during Maintenance

1. The competent authority shall undertake regular inspections to evaluate continuously the compliance with the Maintenance Requirements.
2. The Contractor shall carry out a detailed pre-monsoon inspection of all bridges, culverts and drainage systems in accordance with the guidelines contained in IRC: SP35. Report of this inspection, together with details of proposed maintenance works as required, shall be conveyed to the competent authority forthwith. The Contractor shall complete the proposed maintenance works before the onset of the monsoon and send a compliance report to the competent authority. Post monsoon inspection shall be undertaken by the Contractor and the inspection report together with details of any damages observed and proposed action to remedy the same shall be conveyed to the competent authority forthwith.
3. The competent authority may inspect the road at any time, but at least once every month, to ensure compliance with the Maintenance Requirements. It shall make a report of such inspection ("Maintenance Inspection Report") stating in reasonable detail the Defects or deficiencies, if any, with particular reference to the Maintenance Requirements, the Maintenance Manual, and the Maintenance Programme, and send a copy thereof to the Authority and the Contractor within 10 (ten) days of such inspection.
4. After the Contractor submits to the competent authority the Monthly Maintenance Statement for the road, the competent authority shall carry out an inspection within 10 (ten) days to certify the amount payable to the Contractor. The competent authority shall inform the Contractor of its intention to carry out the inspection at least 3 (three) business days in advance of such

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inspection. The Contractor shall assist the competent authority in verifying compliance with the Maintenance Requirements.

5. For each case of non-compliance of Maintenance Requirements as specified in the inspection report, the competent authority shall calculate the amount of reduction in payment in accordance with the formula specified in **Annexure-II**.
6. Any deduction made on account of non-compliance will not be paid subsequently, even after establishing the compliance thereof. Such deductions will continue to be made every month until the compliance is procured.

2.16 Tests

1. For determining that the road conforms to the Maintenance Requirements, the competent authority shall require the Contractor to carry out, or cause to be carried out, Tests specified by it in accordance with Good Industry Practice. The Contractor shall, with due diligence, carry out or cause to be carried out all such Tests in accordance with the instructions of the competent authority and furnish the results of such Tests forthwith to the Authority/Engineer-in-Charge.

2.At any time during the Maintenance Period, the competent Authority may appoint an external technical auditor to conduct an audit of the quality of the Works. The Auditor, in the presence of the representatives of the Contractor and the competent authority, shall carry out the Tests and/ or collect samples for testing in the laboratory. The timing, the testing equipment and the sample size of this audit shall be as decided by the Authority. The findings of the audit, to the extent accepted by the Authority, shall be notified to the Contractor and the competent authority for taking remedial measures. After completion of the remedial measures by the Contractor, the auditor shall undertake a closure audit, and this process will continue till the remedial measures have brought the maintenance works into compliance with the Specifications and Standards. The Contractor shall provide all assistance as may be required by the auditor in the conduct of its audit hereunder. Notwithstanding anything contained in this Clause, the external technical audit shall not affect any obligations of the Contractor or the competent authority under the Agreement.

3. Safety Audit: The Engineer-in-Charge shall carry out, or cause to be carried out, a safety audit to determine conformity of the road and Bridge Projects on State PWD Roads with the safety requirements and Good Industry Practice as per the relevant IRC Code.

2.17 Reports of unusual occurrences

The Contractor shall, during the Maintenance Period, prior to the close of each day, send to the competent authority, by facsimile or e-mail, a report stating accidents and unusual occurrences on the road relating to the safety and security of the Users

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and the road. A monthly summary of such reports shall also be sent within 3 (three) business days of the closing of the month. For the purposes of this Clause, accidents and unusual occurrences on the road shall include:

1. accident, death or severe injury to any person;

2. damaged or dislodged fixed equipment;

3. flooding of the road; and

4. any other unusual occurrence.

2.18 Monthly Maintenance Statement of the road

The Contractor shall submit to the competent authority a monthly maintenance statement ("Monthly Maintenance Statement") in 3 (three) copies by the 7th(seventh) day of each month for the Maintenance of the road during the previous month.

2.19 Payment for Maintenance of the Road

Within 15 (fifteen) days of receipt of the Monthly Maintenance Statement from the Contractor, the competent authority shall verify the Contractor's monthly maintenance statement and certify the amount to be paid to the Contractor, taking into account:

1. Compliance with the Maintenance Requirements; and
2. Reduction for non-compliance with the Maintenance Requirement as per **Annexure-II**.

Maintenance shall be measured in units of one kilometre each; provided, however, that payment thereof shall be made in fixed monthly amounts in accordance with the Agreement. If the Maintenance Requirements set forth in the maintenance schedule are not met, a reduction in payments shall be made in accordance with the provisions of Annexure. The reductions for non-compliance with the Maintenance Requirements shall be applied on the basis of monthly inspections by the competent authority.

The deduction made on account of non-compliance with the Maintenance Requirements shall not be subsequently considered for payment after the compliance is achieved by repair or rectification.

The competent authority shall pay to the Contractor every quarter any amount due under any bill. The payment shall be made no later than 30 (thirty) days from the date of submission of the last bill for the relevant quarter.

2.20 Price Adjustment for Maintenance of Road

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Price Adjustment for the maintenance of the road will be dealt as per the latest provision on Price Adjustment made by the State Government vide Works Department Office memorandum 15847/W dated 19.11.20219 and other related amendments made by the State Government from time to time.

2.21 Maintenance during Construction Period

During the Construction Period, the Contractor shall maintain, at its cost, the existing lanes of the road so that the traffic worthiness and safety thereof are at no time materially inferior as compared to their condition on Appointed Date, and shall undertake the necessary repair and maintenance works for this purpose; provided that the Contractor may, at its cost, interrupt and divert the flow of traffic if such interruption and diversion is necessary for the efficient progress of Works and conforms to Good Industry Practice; provided further that such interruption and diversion shall be undertaken by the Contractor only with the prior written approval of the competent authority which approval shall not be unreasonably withheld. For the avoidance of doubt, it is agreed that the Contractor shall at all times be responsible for ensuring the safe operation of the road. It is further agreed that in the event the Project includes construction of a bypass or tunnel and realignment of the existing carriageway, the Contractor shall maintain the existing road in such sections until the new works are open to traffic.

Notwithstanding anything to the contrary contained in the Agreement, in the event of default by the Contractor for Maintenance during Construction Period, the competent Authority shall get these maintenance works completed in the manner recommended by Engineer-In-Charge to avoid public inconvenience at the risk and cost of the Contractor in order to keep the road in traffic-worthy condition.

2.22 Final payment statement for Maintenance

Within 30 (thirty) days after completion of the Maintenance Period, the Contractor shall submit to the competent authority, 3 (three) copies of the final payment statement for Maintenance of the road, with supporting documents showing the details set forth below in the form prescribed by the competent authority:

1. the total amount claimed and
2. any sums which the Contractor considers to be due to it, with supporting documents.

The competent authority shall certify final payment within 30 (thirty) days of the receipt of the final payment statement of Maintenance, segregating the items of amount payable from the items of amount disallowed. The competent authority shall make payment on the basis of the final payment authorized by the competent authority within a period of 30 (thirty) days of the receipt of the Final Payment Statement from the competent authority. If the competent authority does not

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prescribe the form within 15 (fifteen) days of the date of issue of the Completion Certificate, the Contractor shall submit the statement in such form as it deems fit.

2.23 Insurance for Contractor's Defects Liability

The Contractor shall effect and maintain insurance cover of not less than 15% of the Contract Price for the Works from the date of issue of the Completion Certificate until the end of the Defects Liability Period for any loss or damage for which the Contractor is liable and which arises from a cause occurring prior to the issue of the Completion Certificate.

3. This shall take effect from the date of issue of the O.M.

4. The aforesaid provisions of DLP and maintenance shall be incorporated in all tenders to be floated from the date of issue of this O.M.

5. This has been concurred in by the Finance Department in OSWAS File FIN-WF1-MISC-0008-2026

By order of the Governor

Principal Secretary to Government

Memo No. 4719 /W, dated 11.3.26

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 OM in the extraordinary issue of the Gazette and supply 20 (twenty) copies to this Department.

11.03.26

EIC-cum-Special Secretary to Government

Memo No. 4720 /W, dated 11.3.26

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

11.03.26

EIC-cum-Special Secretary to Government

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Memo No. 4721 /W, dated 11.3.26

Copy forwarded to the P.S. to the Hon'ble Minister, Law, Works & Excise, Odisha, for the kind information of the Hon'ble Minister.

11.03.26

EIC-cum-Special Secretary to Government

Memo No. 4722 /W, dated 11.3.26

Copy forwarded to the O.S.D. to the Chief Secretary, Odisha for kind information of the Chief Secretary.

11.03.26

EIC-cum-Special Secretary to Government

Memo No. 4723 /W, dated 11.3.26

Copy forwarded to the Sr. P.S. to the Development Commissioner-cum-Additional Chief Secretary, Odisha, for the kind information of DC-cum-ACS, Odisha.

11.03.26

EIC-cum-Special Secretary to Government

Memo No. 4724 /W, dated 11.3.26

Copy forwarded to the P.S. to the Principal Secretary to Govt., Finance/ C&T(T)/ Works / RD/ H & UD / PR & DW/ Department for kind information of the Principal Secretary, Finance / C&T(T)/ Works / RD/ H & UD / PR & DW Department respectively.

11.03.26

EIC-cum-Special Secretary to Government

Memo No. 4725 /W, dated 11.3.26

Copy forwarded to all Departments of the Government of Odisha for information and necessary action.

11.03.26

EIC-cum-Special Secretary to Government

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Memo No. 4726 /W, dated 11.3.26

Copy forwarded to all Collectors & DMs for information and necessary action.

11.03.26

EIC-cum-Special Secretary to Government

Memo No. 4727 /W, dated 11.3.26

Copy forwarded to all Engineer-in-Chiefs / Chief Engineers/ CCEs/ SEs/EEs of Works Department for information and necessary action.

11.03.26

EIC-cum-Special Secretary to Government

Memo No. 4728 /W, dated 11.3.26

Copy forwarded to the Regional Officer, NHAI, Odisha, Bhubaneswar/RO, MoRT&H, Odisha, Bhubaneswar for information and necessary action.

11.03.26

EIC-cum-Special Secretary to Government

Memo No. 4729 /W, dated 11.3.26

Copy forwarded to the Vice Chairman, Bhubaneswar Development Authority/ Commissioner, Bhubaneswar Municipal Corporation/ Commissioner, Cuttack Municipal Corporation for information and necessary action.

11.03.26

EIC-cum-Special Secretary to Government

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SECTION – 6

TECHNICAL SPECIFICATION

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GENERAL INFORMATION

1.1 Description of work to be executed

In order to overcome the drainage problem, the following work is proposed

" Slope protection work in Gobari drainage channel near Jaleswarpur, Jerakhanda, Haribhaktapur, Brahmanmanijori, Lalitgiri in Mahanga block in Cuttack District "

1.2 Location of Work site: The site is situated under **Mahanga Block**.

1.3 Transport Communication Facilities

The contractor has to make arrangement to transport all his construction equipments, construction Materials and labour to work site at his own cost.

1.4 Climate

It has typical tropical climate with pleasant winters, hot and humid summers and heavy rainfall. The maximum annual rainfall in the area is 1200 mm. Mean monthly rainfall during the rainy season varies from 170 to 230 mm. The average number of rainy days in year is 71. May is hottest month and December is the coldest month with the maximum temperature observed is 40 0C and the minimum temperature is 20.6 0C. Relative humidity generally varies from 60 to 79%.

1.5 Availability of Labour:

Both Semi- Skilled & unskilled labour required for the work are available in project area and it is preferable to engage local labourer, However the Contractor must make his own arrangements for labour/machineries/ equipments.

1.6 Availability of petrol, Diesel and other lubricants:

The petrol pumps for procurement of petrol, diesel and other lubricants are available. The contractor shall make his own arrangement for procurement of same at his own cost required for the machineries and equipments engaged for the work.

1.7 Electricity Supply:

The Contractor shall make his own arrangement for extension of electric connection at his own cost if so required by him.

1.8 Housing Facilities:

Private house is available in the vicinity of the work site. The Contractor shall make his own arrangement for housing the labourers, workers and staff at the work site.

1.9 Medical Aid :

The Contractor shall make first aid arrangement at his own cost in accordance with rule and regulations of prevailing Labour Act.

2.0 Source of fund- DIP head

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SUB-SECTION-1

6.1 GENERAL SPECIFICATION

The terms the India Standard Specification herein after referred to as BIS as used therein means the relevant Bureau of Indian Standard codes with all amendments published up to the date of Submission of bids.

In addition to the relevant BIS code, the specifications prescribed and guidelines issued by Central water Commission Standard Specifications and MORTH Section shall also be followed where BIS specifications are not available.

Notwithstanding anything mentioned here & above so far as quality of materials& its use provision in relevant BIS / ISI Specification / code/ guideline will be used.

LIST OF INDIAN STANDARDS

Sl. No.	Short Title	B.I.S Number
1.(I)	**CEMENT**	
1.	Specification to ordinary and Low heat Portland cement.	269-1976
2.	Specification for Portland Pozzolana Cement.	1489-1976 (Third revision)
3.	Portland Slag Cement.	455-1976
(II)	**AGGREGATES**	
1.	Specification for coarse and fine Aggregates from natural source for concrete	383-2016
2.	Specification for sand for masonry mortars	2116-1980
3.	Method of Tests for aggregates for concrete.	2386-1963 (Part I to Part VIII)
4.	Methods for sampling of aggregates for concrete.	2430 -1969
5.	Method of test for determining aggregates impact value of soft coarse aggregates.	5640-1970
(III)	**STEEL**	

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1.	Code of practice for bending and fixing of bars.	2502-1963
2.	Deformed bars for concrete reinforcement hot rolled mild steel and medium tensile steel (Revised).	1139-1966
3.	Recommendations for detailing of reinforcement in Reinforced concreted works.	5525-1969
(IV)	**CONCRETE**	
1.	Code of practice for plain and reinforced concrete.	456-2000
(V)	**EARTH WORK**	
1.	Safety code for piling and other deep foundations.	5121-1969
2.	Safety code for excavation works.	3764-1966
3.	Code of practice for earth work on drains.	4701-1982
4.	Safety code for working with construction machinery.	7293-1974
(VI)	**OTHER SUBJECTS**	
1.	Safety code for scaffolds and ladders part I scaffolds.	3696-1987
2.	Safety code for scaffolds and ladders Part 2 ladders.	3696-1991 (Part-II)
3.	Recommendations on stacking and storage of construction materials at site.	4082-2017
4.	Concrete pipes (with and without reinforcement) (2nd revision).	IS: 458-1971
5.	Code of practice for laying of concrete pipes.	IS: 783 1959

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SUB-SECTION-2

2.1 The enclosed drawing in the bid document gives broad dimensions and outline of the works to be executed through this contract. These drawings may however be revised/modified from time to time and supplementary additional drawing may also be issued as per necessity. During the course of execution there may be changes in dimension, specifications and shape of components. These changes in the drawing can be done without in any way deviating the terms of the contract and the contractor is to execute the work as per revised drawings and specifications at the same rate as agreed upon for the work awarded under the original contract. The contractor shall do no work without proper drawings. He shall check all drawings and specifications carefully and advise the Engineer-in-charge if any error and omission are discovered where upon the Divisional Officer prepare revised additional drawings and specifications and may be required to suit the stage of the work.

2.2 Where the drawings are not consistent with the text of the specifications, the text shall govern.

2.3 The rates shall be for finished items of works as per description in the schedule of quantities and according to drawings, specification and conditions of the contract. The rates quoted shall be for execution of finished items of work & the specifications of which confirm to the details furnished in the Agreement and provisions in Bureau of Indian Standards and shall include all general and incidental charges which will not be paid separately. Such general and incidental charges are listed in succeeding Para for the convenience of the tenderers but are not exhaustive. Omission of any such items here in but required for delivering finished items of work, shall not be plea, that such items are not covered by the rates quoted.

2.3.1 Formation and maintenance of haul roads including river and drainage crossings within the work site and the existing approaches and haul roads, if any, under the control of the Department may be made use of but improvement, if required, shall be done by the contractor at his own cost.

2.3.2 Labour and material required for the construction of reference points, bench marks, pillars, diversions, signboards, road signals etc. for setting out works shall be at contractor's cost.

2.3.3 Scaffolding and gangways as and when required for the work will be done by the

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contractor at his own cost. No additional payment in this regard, will be entertained.

2.3.4 The rate includes all leads, lifts &delifts.

2.3.5 Form work complete includes cost of materials, labour, maintenance, erection dismantling and removal.

2.3.6 Protection of the components of work during the rainy season & irrigation supply shall be the responsibility of the contractor. The responsibility for the safety of the structure rests, entirely onthe contractor and any damages that may occur, has to be made good by the contractor at his own cost.

2.4 The sequence of construction adopted by the contractor shall have to be approved by the Engineer-in-Charge.

2.5 The contractor has to make his own design for coffer dam or any type of cross bund required during course of execution. All materials for the coffer dam of cross bound shall be arranged by the contractor at his cost. The contractor shall maintain the coffer dam/cross bund till completion of the work.

2.6 Quality Control:

2.6.1 Before collecting materials required for execution of the respective items of work as laid down in the schedule of quantities and in the detailed specifications described hereafter in the subsequent sections, the contractor shall ensure that samples of materials proposed to be used are first approved by the Engineer-in-Charge. When directed the samples of materials proposed to be used should be furnished to the Departmental laboratory i.e **Quality Control Division, Kataka**.

2.6.2 All such testing charges shall be borne by the contractor. The contractor will provide necessary assistance if required for collection of samples.

The contractor is liable to pay for any test which is not included in the agreement but required in the opinion of the Engineer-in-Charge during execution of the work for which no additional payment will be made to the contractor.

2.6.3 On the basis of satisfactory test results confirming to technical specification, collection of materials shall be started in the field. The testing of materials shall be checked in the field Laboratory by the Junior Engineer/ Assistant Engineer/ Asst. Executive Engineer of the Department as well as staff of A.R.O./Superintending Engineer of Quality Control Division, Cuttack. If the field test result is found unsatisfactory, the materials shall be rejected and action taken to remove the same from work site by the contractor at his own cost. In no

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case the defective materials shall be used in the work.

2.6.4 On receipt of notice from the Engineer-in-charge and on observation of Divisional Officer,Quality Control Division, Cuttack, the contractor will rectify the defect in stipulated period at his own cost. If the defects are not rectified in the stipulated period, the Engineer-in-charge shall assess the cost, get the defect rectified and recover the same from the dues of the contractor.

2.7 A quarry chart indicating possible source of materials may be seen in the office of the **Executive Engineer, Drainage Division, Kataka.** The contractor must however satisfy himself that materials as per required specifications and quantity are available in those quarries. No extra payment will be made due to non-availability of materials as per required specification and quantity in the quarries shown in the departmental quarry chart. The quarry chart is only an indication of source of material and the department does not accept the responsibility if the materials are not available in full quantity and quality.

2.8 No claim for cost and carriages of water whatsoever will be entertained.

2.9 Decision regarding usefulness of excavated materials rests fully on the Engineer-in-Charge. However, he may take advice of Quality Control Organisation or higher authorities if required.

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SUB-SECTION-3

3.1 SETTING OUT OF WORK

3.1.1 Temporary bench marks shall be fixed at suitable location connecting permanent bench marks fixed by Survey of India. Temporary bench marks shall be fixed at every 0.5 Km interval connecting permanent bench marks available near major structure site. The Contractor shall establish additional reference Bench Marks as may be needed at his own cost for facilitation the setting out and taking levels for measurement of work, with the approval of the Engineer-in-charge. The bench marks shall preferably marked over existing permanent structures. Wherever permanent structure not available at site the bench marks shall be marked over concrete pillar 30cm L X 30 cm B X 75 cm D which shall be embedded 55 cm in to firm ground and projecting 20 cm above the ground. The bench mark pillar shall be constructed in plain cement concrete of M-10. The pillar shall be well protected from being disturbed. The RL of the bench mark shall be continuously carried and painted in pillar.

3.1.2 Before starting any work and during execution (if required), the contractor shall erect reference Bench Marks, reference lines and check profiles at convenient locations as per the direction of the Engineer-in-Charge. The center line of the canal and the reference line for all alignments for demarcation purpose shall be laid by dug-belling on the ground. The reference line shall comprise the base line properly bud belled on the ground with the numbered concrete/masonry RD pillar suitably spaced.

3.1.3 Center line of the drain shall be marked by fixing bamboo pillars/wooden peg/ stone at suitable intervals. Profiles of the drain in filling and in moderate cutting shall be marked at suitable intervals in curves as directed by Engineer-in-charge. A reference line shall also be marked on ground away from the outer edges of cutting and filling with pillars at suitable intervals for future reference.

To ensure correctness of execution, the edges of cutting, the outer toe lines of canal in filling should be marked by fixing pillars or pegs at suitable intervals or by dug belling.

3.1.4 The check profiles shall be located 15meter apart or longer as directed by the Engineer-in Charge to serve as a guide for execution on all slopes and steps to the elevations. All-important levels and all reference points with respect to bench marks and reference lines shall be fixed and co-related by the contractor as per

directions of the Engineer-in-Charges.

3.1.5 The zones of full cutting section, full filling section, partial cutting and filling sections shall be separated by conspicuous demarcation in the field. The curves in canal alignment shall be marked on the ground by fixing pegs at very closer intervals and joining the peg-point by dug-belling to a suitable depth. The locations of different structures indicated in construction drawing shall also be clearly marked on the ground along with the alignment of the Drain. The control structure locations of off-taking drains shall also be clearly demarcated, so that unnecessary excavation or filling at these locations can be avoided. The spoil dumping zones shall clearly be demarcated in the field; these zones should be at last 2m. beyond the location of catch water drains.

3.1.6 To ensure accuracy in execution of cutting, the drain embankment, spoil banks and the structures, their layout shall be given in an appropriate manner with pegs and pillars suitably placed in relation to outer dimensions of these elements.

3.1.7 All materials and labour for setting out works including construction of reference bench marks, reference lines, check profiles and surveys as may be required at the various states of the construction, shall be supplied by the contractor at his own cost.

3.2 CLEARING AND GRUBBING

3.2.1 **CLEARING AND LEVELING SITE**

The portion of the right-of –way where required for construction the work under these specifications shall be cleared of all tree, bushes, rubbish and other objectionable matter. Trees designated by the Engineer-in-charge shall not be cut and shall be protected form injury. Such cleared material shall be disposed off as described in sub-paragraph “C”. The clearing operation shall be in accordance with clauses 4.1, 4.1.1., 4.2 and 4.3. of I.S 4701-1982 Indian Code of Practice for earth work in canals/drains.

3.2.2 **GRUBBING**.

The area described or shown on the relevant site plan shall be cleared of all obstructions, loose stones and of all kinds of rubbish. All brushwood shall be cleared and the roots grubbed up. No trees shall be cut down and removed without the instructions of the Engineer-in-Charge.

The products of the clearing shall be stacked in such place and manner as may be ordered by the Engineer-in-charge and the ground shall be left in aperfectly

clean condition. All products of the clearing shall be the property of Government and shall be disposed off as per the direction of Engineer-in-charge. All holes or hollows, whether originally existing or produced by digging up roots shall be carefully filled up with earth and leveled off, as directed.

3.2.3 **DISPOSAL OF CLEARED AND GRUBBED MATERIAL**

The disposal of cleared and grubbed material shall be in accordance with clause 4.1.1 of I.S. 4701-1982 code of practice for earthwork on canals. All waste materials to be burnt shall be piled neatly in suitable condition shall be burnt completely to ashes. Piling of waste materials for burning shall be done at such a location and in such a manner as would not cause any fire risk. Necessary precaution shall be taken to prevent spreading of fires to areas beyond the limits of cleared areas.

3.2.4 **PAYMENT**

For the clearance of light jungles, heavy jungle with or without uprooting etc., payment will be made as provided for in the bill of quantities. Separate payment will not be made for clearing of site and grubbing including disposal of the cleared and grubbed materials required under the above paras unless and otherwise specified in the contract document. The contractor shall include the cost thereof in the price bid in the bill of quantities of the contract for the relevant finished item of work for which clearing and grubbing as mentioned in the above para are required. No payment towards removal of small stones and boulders of size less than 0.014 cubic meters will be made, and the rate quoted for excavation will be considered including this item. However, payment will made for the removal of surface boulders of sizes greater than 0.5 cubic meter. Either loose or partly embedded in the ground, at the rate quoted in bill of quantities for the actual quantity so removed based on stack measurement applicable for the relevant strata classification after deducting 40% towards voids.Benching will be paid as separate item, per 1(one) running mtr. of bench at the rate provided for in the bid documents.

3.3 USE OF WATER

The Contractor shall procure and supply water for all the items of works at his own cost as the same has been included in the price bid in the bill of quantities of the items of work for which the water is used.

3.4 DAMAGES BY MONSOON OR FLOOD / CYCLONE

Damages due to rain or flood have to be made good by the Contractor till the work is

handed over to the department. The responsibility for making good to the damages rests with the Contractor. No extra cost is payable for such operations and the Contractor shall, therefore, have to take all necessary precautions to protect the work done during the construction period.

3.5 REMOVAL OF SILT AND WATER:

Payment for removal of silt will be made as provided in bill of quantities. Accumulated silt and water in the drain and structures for the works partly done by the contractor in current or previous seasons should be removed and no extra payment will be made, for such removal of silt and water. This unit rate of excavation is deemed to include cost of removal of such silt and water.

3.6 PROCEDURES FOR MEASUREMENT:

Before commencement of work, initial levels to indicate existing ground levels shall be taken at 30M intervals longitudinally along the alignment of the drain. The level points transversely along the cross sections shall be maximum at 5 M. intervals in flat ground and 1.5 to 2.0M in undulating terrain. The cross sections shall be extended beyond the limit of work to a suitable distance and minimum 5 mtr beyond the toe lines of slopes on both the sides. The interval stipulated shall be made closer depending on the topography or any stipulation made by the Engineer-in-charge. All initial levels shall be recorded in ink in authenticated level books issued by the Engineer-in-charge and shall be signed by the Junior Engineer / Assistant Engineer when he records the levels. The Assistant Engineers and Executive Engineers shall exercise checks strictly in accordance with the codal provisions.Actual construction works shall not be allowed to start unless the above formalities are fulfilled.If the work is awarded to any agency the level shall be recorded in the presence of the contractor or his authorized agent. The contractor or his authorized agent shall sign each page of the level book/field book in token of acceptance. These cross sections shall form the basis of all future measurements and payments. Each dimension shall be measured to the nearest 0.01m, areas shall be computed to nearest 0.01sqm. Volume shall be computed to nearest 0.01 cubic mtr.

3.7 All lead in manual means will mean lead up to 225 m. All lift will mean lift up to 7.50M.

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SUB-SECTION-4

4.1 EARTH WORK – GENERAL

All works of the contract shall be executed as per the specific and relevant clause/clauses of relevant I.S. code unless otherwise specified. Materials used should confirm to the desired standards prescribed in the relevant codes. Wherever Para of I.S. code is cited in specification, it goes without saying that the latest revision of the specification subsequently, shall apply. For purpose of relevancy or otherwise of any provision of the I.S. code referred to, the decision of Engineer-in-Charge shall be final and binding.

4.2 EXCAVATION OF DRAIN AND FOR STRUCTURES

4.2.1 The excavation shall be carried out to the lines and grades as shown on the drawings or as provided in these specifications, and all materials required to be excavated will be paid for at the applicable rates in the schedule for excavation. No additional allowance above the rates in the schedule will be paid. The classification of excavation as decided by the Engineer-in-charge is binding on the contractor. In case of dispute, the decision of superintended Engineer shall be final. Merely the use of explosive in excavation will not be considered in areas on the higher classification unless blasting is clearly necessary in the opinion of the Engineer in-charge.

4.2.2 The excavation may be carried out manually or mechanically and as per specification, drawing and direction of Engineer-in- Charge

4.2.3 The excavation in all kinds of soil and D.I. Rock shall be done according to the dimensions and grades shown on the drawing.

4.2.4 Blasting shall be done in such a manner as not to cause over break which in the opinion of the Engineer-in-Charge is excessive. Special care shall be taken to prevent over break or loosening of material on bottom and side slopes against which concrete lining is to be placed. Final cutting in hard rock for 45cm shall be carried out by controlled blasting or chiseling or with the help of pneumatic pavement breakers. If excavation is required to be done within 30m from the existing structure, the same shall be carried out by chiseling. The method of drilling and blasting to be resorted to for hard rock excavation shall be approved from the Engineer-in-Charge.

4.2.5. The excavation shall be allowed to progress from the valley ends of the reach towards the ridge in conformity with the layout given. All useful earth from excavation shall be used in for filling the banking section, with varying leads and lifts either manually of mechanically. Excavated materials which is not useful for banking or which is in excess after meting the banking requirement of the reach shall be disposed either by head load

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or by mechanical means or by both in spoil bank or at any specified place with all lifts and with varying leads.

4.2.6 The contractor shall not be entitled to any additional rate above the rates quoted in the schedule on account of the requirement for allowing additional time for drying, stock piling and re handling the excavated material which have deposited temporarily and stockpiled.

4.2.7 Earthwork beyond the required design will not be paid for. The measurement of earth should be taken after one complete rainy season or 12.5% voids will be taken foe measurement.

4.2.8 Suitable earth available from cutting will economically be utilized in filling zone. No separate payment shall be allowed.

4.2.9 Earth filling by mechanical means will start only after completion of earth work by head load duly permitted by Engineer-in-charge.

4.2.10 Unless mechanical transportation is specified, surplus earth will be deposited in the spoil bank manually with initial lead & lift after meeting the requirement of canal/drain.

4.3 EXCAVATION OF SOIL AND DISINTEGRATED (D.I) ROCK

Excavation of soil shall comprise of all kinds of soil such as vegetable or organic soil, turf, sand, silt, loam, clay, mud, peat, black cotton soil, loose or compact moorum, soft/stiff/heavy /hard shale, stony earth mixed with gravel having 300mm.maximum diameter in one direction. Excavation of D.I. shall comprise of soling of roads/paths, hard core, macadam surface lean concrete stone masonry brick work soft conglomerate lime stone, sand stone hand conglomerated and all types of D.I. rock, which-does not require blasting and can be quarried or split with pick axe and crow bars. If however, the contractor resorts to blasting in such strata and D.I. rocks for his convenience, no extra payment shall be made and the material shall not be classified in higher grade. Excavation for canal &. side slopes are to be made as per the approved drawings, specification and provision of I.S.Code.

4.4 EXCAVATION OF HARD ROCK

This shall include all solid rock in place of such hardness and textures that it can not be removed by pickaxe and crowbar or any other method until loosened by drilling. blasting and wedging. All boulders or detached pieces of solid rocks having volume grater than 3cum.can be classified as hard rock when removed by blasting etc. Blasting shall be restored only after it has been certified by the Engineer-in-charge that blasting is necessary. Rock excavation shall be done as per relevant I.S. codes & following relevant safety provisions.

The excavated rock and debris so obtained shall be carried and dumped/stacked separately with varying lead at places indicated by the Engineer-in-charge. The volume

shall be calculated after deduction of suitable void percentages and compared and co-related with the premeasured volume.

The excavated materials shall be the property of the Department. The same shall be issued to the Contractor for the work such as pitching, filter, rock toe, masonry works etc. under this contract, if required. at the issue rate. The issue rate fixed by the department for time to time shall be applicable and binding on the contractor.

Payment for sheet hard rock shall be made as per level section (pre & finished) taken at 3m. apart with transverse levels at every 1m. apart. A closer interval for leveling may be adopted if considered necessary in the opinion of the Engineer-in-charge. Boulders having volume more that $3M^3$ shall be premeasured. However, the excavated hard rock as measured by above method and as calculated by stack measurement (deduction voids) shall be co-related and variation worked out. The stack measurement of hard rock shall not ordinarily be less than 70% which shall be ascertained by the Engineer-in-charge and a certificate there of shall be recorded in the measurement book. If a higher variation is found after being got verified by the Engineer-in-charge, a report shall be forwarded to the Additional Chief Engineer for approval.

4.5 OVER EXCAVATION:

The canal/drain shall be excavated to designed section in all kinds of soil and D.I. rock. No over excavation will be allowed. However, in canal/drain sections taken in Hard rock formation over excavation to the extent of 10cms depth on an average will be allowed and paid for in respective item. In case of over excavation due to poor geological formation certified by the Additional Chief Engineer& approved by the Chief Engineer payments would be made for removal of such quantity only. In the canal/drain section where expansive type of soil such as Ch type of soil is encountered and over which concrete lining can not be directly laid, the canal prism shall be over excavated to the extent as directed by the Engineer-in-charge and such over excavated section shall be filled with suitable cohesive non-swelling (CNS) type of soil to be placed in uniformly compacted layers as directed by the Engineer-in-charge. The over excavation made in such strata, filling by suitable soil, watering and compacting, will be paid under respective items at the quoted rate.

4.6 DEWATERING TRENCHES

Subsoil water met within canal/drain excavation shall be diverted to nearby drain/nalla by cutting an open channel within the canal/drain section to be excavated. When the drain/nalla bed is higher than the subsoil water level met with pumping shall be resorted to for dewatering below the drain /nalla bed level. No extra payment will be made for such diversion. In case where topography of the area is such that surface water is not possible to be drained off by excavating the channel, pumping shall be

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resorted to till completion of work.

4.7 MEASUREMENT AND PAYMENT

The payment shall be made on volumetric basic for the quantities excavated to the required extent. The cross sections shall be taken initially before commencement of work as stipulated in earlier Para. On completion of execution, final cross section shall be taken at the same points longitudinally and transversely. These cross sections shall be marked on the initial cross sections and the quantities between initial and final cross sections shall be worked out and paid. In case of canal/drain excavation in hard rock, cross sections shall be taken at 3M interval longitudinally with transverse levels at I M or closer intervals, as decided by the Engineer-in charge for initial and final sections. Isolated boulders having volume more than 3 cum. and not covered in section measurement shall be premeasured.

4.8 EXCAVATION FOR STRUCTURES

4.8.1 Excavation for the foundation of structures shall be to the elevation shown on the drawings or as directed by the Engineer –in charge. In so far as practicable the useful materials removed in excavation for structures shall be used for back fill and embankment.

4.8.2 FOUNDATIONS FOR STRUCTURES

All trenches in soil other than rock or hard compact soil more than 1.5 m depth in which men enter shall be securely shored shuttered and timbered for safety and no separate will be allowed. All loose stones, projecting clumps of earth, pockets of materials which might come down on the workers in the trenches or any condition which is hazard, shall be either removed or the excavated sides adequately braced and the trench suitably guarded. On stiff slopes, workmen shall not be permitted to work one above the other.

The contractor shall prepare the foundations of structure site by method, which will provide firm foundation for the structures. The bottom and the side slopes of common excavation upon or against which the structure is to be placed shall be finished to the prescribed dimensions and the surfaces so prepared shall be moisten and tamped with suitable tools to form firm foundation upon or against which the structures is to be placed. The contractor shall prepare the foundation of the structures as shown on the respective drawings. The horizontal foundation materials beneath the required excavation shall be moistened if required and compacted in place.

If the Engineer-in-charge considers it's necessary to consolidate the foundation strata by grouting cement slurry, then drilling and grouting or any other foundation treatment shall be done by the contractor as directed by the Engineer-in-charge and the payment will be as per the general contract document in respect of extra items. Densities of the

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compacted foundation materials and the testing there of shall be in accordance with relevant IS specification. When unsuitable materials are encountered in the foundation for structure the Engineer-in-charge will direct additional excavation to remove the unsuitable materials. The additional excavation shall be refilled as follows. The excavation of soil, the over excavation shall be filled in by selected bedding materials and compacted. In excavation of rock it shall be filled by cement concrete M-7.5. Payment will be made as per unit rate as provided in the bill of quantities. Should remains of old building be met with, the materials shall be removed with wedges and levers. Blasting shall not be allowed, with the permission in writing of the Engineer-in-charge. If bad ground of loose soil is met with the contractor shall responsible for reporting the fact to the Engineer-in-charge who shall issue such orders as may be necessary. For extra excavation, concrete and masonry arising from bad ground, the contractors shall be paid treating this as additional quantity as per the contract rate of contract documents. All excavated earth, which is unfit, or surplus to the requirements for filling in drain embankments etc. shall be spared, as instructed by the Engineer-in-charge at the contractor's expenses.

4.8.3 OVER EXCAVATION:

If at any point in common excavation the foundation material is excavated beyond the lines required to receive the structure, or if at any point in common excavation the natural foundation material is disturbed or loosened during the excavation process, it shall be compacted in place or where directed, it shall be filled by cement concrete M-7.5. Any and all excess excavation or over excavation performed by the contractor for any purpose or reason except as directed by the Engineer-in-charge shall be at the expense of the contractor. Filling for such excess excavation of over excavation shall be at the expense of the contractor.

4.8.4 DISPOSAL OF MATERIALS:

All suitable material removed in excavation or as much thereof as may be needed as directed by the Engineer-in-charge shall be used in the construction of drain embankments, roadway embankments and for selected bedding materials or for backfill and around structures. If there is an excess of material in the excavation, it shall be used to strengthen the embankment on either side of the drain, deposited in low areas uphill of the drain to eliminate trapped drainage or otherwise wasted as directed by the Engineer-in-charge. The disposal of the excavated material shall be in accordance with clauses 8.1 and 8.2 of BIS 4701-1982.

4.8.5 MEASUREMRENT FOR PAYMENT

Foundation for structures will be measured for payment, as per drawing with due consideration for shuttering. The payment shall be made on volumetric basis for the

quantities excavated to the required extent.

4.8.6 PAYM ENT:

Payment for excavation for structures shall be made at the unit price per cubic metre. The rate of excavation for structures shall include the cost of all labour and materials and other temporary constructions, cost of all other work necessary to maintain the excavation in good order during construction, cost of removing such temporary construction where required and shall include the cost of disposal of the excavated material.

4.9 BACK FILL:

4.9.1 BACK FILL AROUND STRUCTURES

The item of the schedule for back fill around structures including pipe portions of structures includes all back fill required to place under these specifications.

4.9.2 MATERIALS:

The type of material used for backfill, the amount thereof and the manner of depositing the material shall be subject to approval of Engineer-in-charge. In so far as practicable backfill material shall be obtained from material removed from excavation for structures. But when sufficient suitable material is not available from this source or from adjacent drain excavation, additional material shall be obtained from approved borrow areas. The borrow pit excavation shall be in accordance with clauses 9.1 to 9.3 of B.I.S. 4701 - 1982.Where sand filling is specified, the sand shall be clean, free from admixture of foreign material and approved by the Engineer-in-charge before filling is commenced. Should there be a necessity to fill in a basement with sea sand, prior written approval of the Engineer-in-charge shall be obtained. Sand filling should be saturated with water before the construction is allowed to proceed.Filling around structures shall have well consolidated in layers of 15 cm. by ramming with iron rammers and cut ends of crowbars. When filling reaches the finished level the surface shall be saturated with water for at least 24 hours, allowed to dry and then rammed and consolidated.

Except as otherwise provided below, backfill material to be compacted shall contain no stones larger than 80 millimeters in diameter and if not be compacted shall contain no stones larger than 130 millimeters in diameter. If the excavation for the foundations of the structure is in swelling soils, a layer of cohesive non-swelling soil conforming to B.I.S. 9451-1985 should be interposed between the swelling soil and the structure.

4.9.3 PLACING BACKFILL:

Backfill shall be placed to the lines and grades shown on the drawings as prescribed in this paragraph or as directed by the Engineer-in-charge.

The surface to receive the filling shall be first prepared free from all roots, vegetation or spoil and wetted.

All backfill shall be placed carefully and spread in uniform layers so that all spaces around rocks and clods will be filled. Backfill shall be brought up as uniformly as practicable on both sides of walls and all sides of structure to prevent unequal loading. Backfill shall be placed to about the same elevation on both sides of the pipe positions of the structures to prevent unequal loading and displacement of the pipe. The contractor shall provide at least 60 (Sixty) centimeter thick earth cover over the top of pipe to prevent damage from construction equipment loads. If a haul road is built over a pipe all backfill about and over the pipe shall be placed to a uniform surface and no humps or depressions will be permitted at the pipe crossing.

4.9.4 STRUCTURES ON FILL:

Where the original ground surface is below the base of a structure or below the of pipe all fill required for the structure foundation and all fill up to the bottom of the pipe shall be placed as compacted embankment. The embankment over the natural ground up to pipe bottom and over the pipe shall be laid in accordance with clauses9.2.4, 9.2.5 and 9.2.6 of B.I.S. 783 code of practice for laying of concrete pipe.

4.9.5 MEASUREMRENT AND PAYMENT

Payment for backfill about structure will be made as provided in the unit price bid therefore in the bill of quantities.

4.10 CONSTRUCTION / RAISING / STRENGTHENING OF EMBANKMENT

4.10.1 Raising/ strengthening of embankment shall be constructed to top widths and side slopes as shown on the drawings. The embankment shall be built to heights as directed above those shown on the drawings. The top of all the embankments shall be graded to be suitable for a road way and the top of other embankments shall be graded to scarified as directed. The extra height for settlement allowance shall be included. Before commencing over haul of material from the borrow area, levels of the banks to be formed in the sections where the over hauled materials is proposed for construction of embankments, shall be taken. After completing the construction of embankment, final cross section levels shall be taken and the volume shall be arrived at and payment shall be made to that quantity only. **Earth work beyond the theoretical design section will not be paid for.**

All materials shall be deposited in embankment so that cobbles, gravel and boulders are well distributed through other material and not nested in any position within or under the embankment .

4.10.2 In conjunction with construction of embankments, the contractor shall construct operation and maintenance roads and earth ramps adjacent to the canal and structures at his own expense. Suitable material from required excavation shall be placed as embankment for the roads and ramps. If sufficient suitable material is not available from

required excavation the Engineer-in-charge may direct excavation from borrow areas. Decision of Executive Engineer on suitability/ usefulness of excavated material for use in embankment section is final.

4.10.3 Embankment not be compacted shall be formed conforming to clause 6.6.1 to I.S. 4701-1982. The embankments shall be built in layers not exceeding 30 {thirty) cm. in thickness. Embankment shall be built in approximately horizontal layers carried across the entire width of the embankments to the required slopes. Embankments shall not be widened with loose material dumped from the top. Embankment built by excavating and hauling equipment shall be made in horizontal layers and shall be kept as close to level as practicable. The travel over the embankments during construction shall be routed so as distributed the compacting effect of the equipment to the best practicable advantage.

4.10.4 All materials required for the construction raising /widening of embankment and backfilling around the structures which are not available from canal excavation, excavation for structure or from excavation of other ancillary works shall be obtained from the approved borrow areas arranged by contractor at his own cost. Shallow cut will be permitted in the borrow areas if unstratified materials with uniform moisture contents are encountered. Each designated borrow area shall be fully exploited before switching over to the next designated borrow area. Haphazard exploitation of borrow pits shall not be permitted. The type of equipment used and the operations in the excavation of materials in borrow areas shall be such as to produce the required uniformity of the mixture of materials for the embankment. The contractor has to arrange borrow earth at his own cost and responsibility. No compensation whatsoever for change in limits and locations of the borrow areas and depth of cut for getting suitable earth shall be paid to the contractor. No excavation is allowed within a distance of five times the height of embankment from the outer toe. Borrow pits shall be operated so as not to impart the usefulness or mar the appearance of any part of the work or any other property. After excavation the borrow area will be dressed suitably.

4.10.5 All areas required for borrowing earth for embankment shall be cleared of all tree stumps, roots, bushes, rubbish and other objectionable materials. Construction and maintenance of approach roads and haulage road will be the responsibility of the contractor. The Department will have full right of way to those roads for inspection purposes. No extra payment is admissible as this is deemed to have been included in the unit bid price for earthwork in the bill of quantities being contingent to the main work.

4.10.6 The planning for execution should be such that all the useful excavated materials are utilized in embankment prior to utilization of borrow earth from outside. Only suitable

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materials as per specification shall be excavated, loaded and conveyed to the point of placement in the embankment. Unsuitably material if conveyed shall be removed and disposed clear of the work site as directed by the Engineer-in-charge at the cost of the contractor. The maximum dimensions of stones pebbles and rock fragments etc. placed in the outside zone of the embankment shall not be more than 15 cm. and the quantity of such stone shall not exceed 5% of total quantity.

4.10.7 Construction of embankment shall begin at the toe of the fill and in no case shall embankment be widened by material damped form the top. The material shall be placed in the earth fill in the continuous horizontal layers not more than 30Cm. in thickness. The inside proud section shall not be removed if the lining work is not included under the same contract. Such proud section made out of borrow earth form outside only shall be paid as per bid price of the item in the bill of quantities. No payment shall be made for compaction for such proud section left.

During construction a small transverse slope form center towards edges should be given to avoid pools of water forming due to rains.

4.10.8 Embankment materials shall be placed only when the weather conditions are satisfactory to permit accurate control of the moisture content in the embankment materials. The contractor, shall provide suitable protection works to protect the slope from erosion due to rain water. No payment what-so-ever shall be made for providing such protection work and rectifying the monsoon damages.

4.10.9 In the mechanically compacted earth fill, settlement allowance shall be varied according to actual percentage of compaction, i.e. (100% - %actual compaction). For uncompacted earth fill, settlement allowance of 12.5% should be provided. The base width of the embankment shall not be increased to maintain the design slopes for additional height as settlement allowance, but the following procedure shall be adopted;

Settlement allowance shall be calculated at various levels and the elevation including settlement allowance shall be derived keeping the embankment width, at the designated levels unchanged. The edges of the embankment at the increased elevations (including settlement) when joined with the point where the slope has changed earlier below, shall give the slope to be adopted for construction.

4.10.10. The slopes of particular reach of the earth fill which has been completed in the manner described earlier shall be dressed neatly to the designated line and grade. Extra earth work done at sides are to be dressed and reused in the embankment.

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4.11 DEWATERING :

Dewatering from the Excavation of foundations of structures when and where necessary during execution will have to be done by the contractor by using suitable pumps preferably 5HP including all T & P and incidentals required during pumping, Manpower required for pumping will be provided by the agency. A logbook will be maintained for the purpose which is to be issued by the Engineer-in-Charge. The logbook will be countersigned daily and on daily basis by the officers/officials in charge on behalf of Engineer-in-Charge. Payment for de-watering will be made in case of under water activities and activities in areas of excessive seepage which may require pumping.

Not Applicable

1.11.1 PAYMENT

Payment for dewatering will be made as per actual execution on 5hphr basis.

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SUB-SECTION-5

5.0 SPECIFICATION FOR MATERIALS:

5.1 STONE FOR RANDOM RUBBLE STONE MASONARY:

The stone used for masonry shall conform to the relevant specification of clause 4.1 of I.S. 1597(Part II) 1967 and I.S. 1123-1957 code of practice for construction of stone masonry Part-I Rubble stone masonry.

The stone of the required quality shall be obtained from the approved sources. The common types of natural stones generally used are granite and other igneous rocks and shall be free from defects like decay, cavities, cracks, flaws, sand, holes, soil seams, veins, patches of soft or loose materials or any other deleterious materials like iron oxide, organic impurities etc. They should be free from rounded, weathered surface or skin coating which prevents the adherence of mortar.

All stones used shall be of uniform colour, texture, clean, hard, strong durable and shall have abrasion value of 45%, specific gravity of about 2.5, minimum crushing strength of 100 Kg/ Sqm and percentage of water absorption shall not exceed 5% by weight.The size of the stones shall be 15 cm and above measured in any direction. The length of the stones shall not exceed 3 times the height nor shall it be less than twice the height plus one joint. The breadth shall not be less than the height and the breadth on the base shall not be greater than ¾ th thickness of the wall nor less than 20 cm.

Stones not confirming to the standards mentioned above in Para 5.1 shall be removed away from the site by the contractor at his own cost.

The cost of collecting the stones for masonry will not be paid separately and their cost including the cost of quarrying, transporting, stacking, royalty shall be included in the unit price per cubic metreof relevant item in the bill of quantities.

i) The rates of materials in schedule of rates are basic rates excluding cost of conveyance, royalty and GST.

ii) Normally blasted stone should not be used for soling stone when hand broken stones are available.

iii) Hard stone is to be used in lieu of granite for slope protection work.

5.2 COARSE AGGREGATES FOR CONCRETE:

5.2.1 GENERAL

For the purpose of these specifications, the terms coarse aggregates designate clean well graded aggregate most of which is retained on 4.75 mm I.S. sieve and containing only so much lines materials as permitted for various types described under clause 2.2 of I.S. 383-1970

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Coarse aggregate for concrete shall be furnished by the Contractor from the approved quarries. The contractor shall, unless otherwise specified in the tender notice and subsequently on this basis in the contract, be responsible for payment of quarry fees etc. on all materials.

THE GRADATION OF COARSE AGGREGATES SHALL BE AS PER THE FOLLOWING TABLE:-

I..S. Sieve Designation	Percentage by weight passing the sieve			
	40 mm & down graded	20 mm & down graded	16 mm & down graded	12.5 mm & down graded
80 mm	100	--	--	--
40mm	95-100	100	--	--
20 mm	30-70	95-100	100	100
16mm	--	--	90-100	--
12.5 mm	--	--	--	90-100
10 mm	10-35	25-55	30-70	40-85
4.75 mm	0-5	0-10	0-10	0-10

5.2.2 QUALITY

The coarse aggregate shall consist of naturally occurring (crushed or uncrushed) stones, and shall be hard, strong, durable, clear and reasonably free from veins and adherent coating and free from injurious amounts of disintegrated pieces, alkali, vegetable matter and other deleterious materials. Coarse aggregate will be rejected if it fails of meet any of the following requirements and the materials shall be taken away from the work site by the contractor at his own cost.

5.2.3. DELETERIOUS MATERIALS.

The maximum quantity of deleterious materials in coarse aggregates shall not exceed the limits specified in Table of I.S. 383-1970 when tested in accordance with IS 2386-1963

5.3 SAND FOR R.R. STONE MASONRY, CONCRETE, PLASTERING & POINTING WORKS:

The sand shall be collected from approved quarry / any other quarry duly approved by the Engineer-in-charge.

The sand shall consist of clean, dense, hard, durable uncoated rock fragments free from adherent coatings, organic matters and shall not contain more than permissible limit of clay balls or pellets as specified further below.

The sand shall not contain any harmful impurities such as iron pyrites, alkalis, salts, coal mica shale or similar laminates or other materials in such form or in such quantities

as to affect adversely the hardening, strength, durability or the appearance of the mortar used for masonry work.

Sand as used at the time of preparation of mortar, shall have a uniform and stable moisture content. Determination of moisture content shall be made as frequently as possible, the frequency for a given job being determined by the Engineer according to weather conditions.

Sand shall be well graded as per the table described further below and sand falling outside the specified limit due to excess or deficiency of coarse or fine particles, may be processed to comply with the standard by screening through suitably sized sieves and/or blending with required quantities of suitable sized sand particles. If the sand brought to site is not clean , it must be washed clean in water . Fine dirt sand, sea sand or sand containing saline impurities shall on no account be used. The cost of washing and screening shall be borne by the contractor.

5.4 CEMENT

Ordinary Portland Cement (OPC) of 43 grade conforming to I.S. 269-1976 and Portland Slag Cement (PSC) conforming to I.S. 455-1976 shall be procured by the contractor.

Only Ordinary Portland Cement (OPC) of 43 grade shall be used for R.C.C. constructions. Cement shall be procured from reputed manufacturers duly approved by the Engineer-in-charge.

Immediately upon receipt at the site of the work, cement shall be stored separately in dry, water tight and properly ventilated structures at the cost of the contractor. All storage facilities shall be subject to approval and shall be such as to permit easy access for inspection and identification.

Cement older than 90 days shall not be used without specific test/approval. For physical and chemical requirement, Ordinary Portland Cement (OPC) and Portland Slag Cement (PSC) shall conform to I.S. 269-1976 and I.S. 455-1976 respectively.

i. The cement of the companies having their own manufacturing units in the State of Odisha is to be used in all works.
ii. Weight of cement shall be considered as 14.30 quintals per one cum.
iii. Rate shall be considered as average factory price ofthree manufactures of cement inside the State.

5.5 WATER:

Water used for mixing of concrete and mortar shall be free from objectionable quantities of silt, organic matter, injurious amounts of soils, acids salts and other impurities.

5.6 SAND FOR FILLING

5.6.1 GENERAL

As per I.S. 365-1970, the sand is classified in different grading zones depending on the

percentage passing on specified I.S. Sieves.

Therefore the zone may be classified against coarse sand. (Zone I & II may be considered as coarse sand to Zone III & IV)

GRADATION OF FILLING SAND SHALL BE AS PER THE FOLLOWING TABLE:-		
IS sieve designation	**Percentage by weight passing the sieve**	
	Zone- I	Zone- II
10 mm	100	100
4.75 mm	90 to 100	90 to 100
2.36 mm	60 to 95	75 to 100
1.18 mm	30 to 70	55 to 90
600 micron	15 to 34	35 to 59
300 micron	5 to 20	8 to 30
150 micron	0 to 10	0 to 10

5.7 REINFORCEMENT BAR

5.7.1 GENERAL

Unless shown otherwise in the drawings, the reinforcement to be used shall be high yield strength deformed bars of grade Fe 415 conforming to I.S. 1786-1985 specification for high yield strength deformed steel bars and wire for concrete reinforcement.

i) All Reinforcement Steel and structural steel shall be procured and used as per specification mentioned in BIS' documents-IS: 1786 and IS:2062 respectively. Independent tests shall be conducted, whether required, to ensure that the materials procured conform to the specifications.

i) This steel shall be procured only from those firms, which are established, reliable, indigenous & primary producers of steel having Integrated Steel Plants (ISP) , using iron ore as the basic raw material as per Ministry of Steel's guidelines.

ii) No re-rolled steel shall be permitted in works. All other specifications and guidelines of Ministry of Road Transport and Highway shall be complied.

iii) Steels shall be procured from manufacturers as notified by Works Department, Govt. of Odisha from time to time. Also the steel manufactured by companies approved by EIC, WR, may be used following due procedure.

iv) In case of exigency other brands (Primary producers) of steel may be used with proper justification and prior approval of competent authority satisfying the tests as required by BIS Code.

v) Rates of steel shall be considered as fixed by SAIL. In case of non- availability of rates of SAIL, rates from other manufactures as notified by Works Department, Govt. of Odisha from time to time may be taken.

SUB-SECTION-6

6.0 R.R. STONE MASONRY, PLASTERING & RULE POINTING WORKS:

6.1 DESCRIPTION OF ITEMS:

6.1.1 Randum rubble hard granite stone masonry in C.M. as specified in BOQ for sub-structure/ super structure at all heights with approved quality of hard granite stone of 15cm and above size free from weathered skin including cost, carriage, royalty, taxes etc. of all materials with all leads, lifts and delifts including cost of scaffolding, tools & plants, curing, construction of coffer dam, if required, removal of scaffolding and all other incidental charges etc. complete as per specification, drawing and direction of the Engineer-in-charge.

6.1.2 12mm thick cement plaster in C.M. as specified in BOQ over brick work finished smooth for structures after racking out joints & cleaning including scaffolding with all leads, lifts, delifts, costs, carriage, taxes and royalty of all materials, curing and removal of scaffolding after completion of work including construction and removal of coffer dam if required with all other incidental charges etc. complete as per specification & direction of Engineer-in-charge.

6.1.3 20mm thick cement plaster in C.M. as specified in BOQ over stone masonry of structures finished smooth after racking out joints and cleaning including scaffolding with all leads, lifts, delifts, cost, carriage, taxes and royalty of all materials, curing and removal of scaffolding after completion of work including construction & removal of coffer dam if required with all other incidental charges etc. complete as per specification and direction of the Engineer-in-charge.

6.1.4 Cement flush pointing to stone masonry of structures in C.M. as specified in BOQ finished smooth after racking out joints and cleaning including scaffolding with all leads, lifts, delifts, cost, carriage, taxes and royalty of all materials, curing and removal of scaffolding after completion of work including construction & removal of coffer dam if required with all other incidental charges etc. complete as per specification & direction of the Engineer-in-charge.

6.2 CEMENT MORTAR:

6.2.1 GENERAL

The cement mortar shall consist of cement, sand, water and other approved admixture, as required each complying with its own specifications.

6.2.2 MIXING:

(i) The mortar ingredients shall be mixed thoroughly to ensure uniform distribution of all the component materials throughout the mass at the end of mixing period.

(ii) If machine mixed the mixing of each batch shall continue for not less than the

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period stated in the following table after all materials are in mixer unless tests of mixer performance show that variations in these prescribed time is necessary and is acceptable.

Sl. No.	Capacity of mixer (m^3)	Time of mixing natural aggregates
1.	1.5 or less	1½ minutes
2.	2.5	2 minutes
3.	3	2 ½ minutes
4.	4	2 ¾ minutes
5.	4.5	3 minutes

The minimum mixing period specified are conditional on the materials being fed into the mixer in a manner which will facilitate efficient mixing and on operation of the mixer at its designed speed.

6.2.3 TRANSPORTATION OF MORTAR:

Mortar shall be transported from the mixer to the placing position as rapidly as practicable by methods that will prevent loss of ingredients or consistency

6.2.4 TESTS OF MORTAR :

When directed by Engineer-in- charge mortar test cubes shall be cast for the mortar used on the work and shall be tested in accordance with Appendix A of I.S. – 2250 – 1965 code of practice for preparation and use of Masonry mortar. Such cubes shall develop a compressive strength of at least 50Kgs/Sqcm for CM mix(1:5) and 75 Kg/sqcm for mortar mix (1:4). Work not conforming to the specifications will be rejected and the cost of removal and reconstruction shall be borne by the contractor.

6.3 R.R. STONE MASONRY

6.3.1 DRESSING OF STONES FOR R.R. MASONRY:

The face stone shall be hammer dressed in the face, sides and the beds to enable it to come into close proximity with the neighboring stone. The bushing in the face shall not project more than 40 mm. on an exposed face and 12 mm. on a face to be plastered. Stones with round surface shall not be used in the construction.

6.3.2 LAYING OF STONES FOR R.R. STONE MASONRY:

The masonry shall be laid to lines, levels, curves, shape shown in the drawing. Stones in the hearting shall be laid on their broadest face. Stratified stones must be laid on their natural beds. All bed joints shall be normal to the line of pressure upon them. Shaping and dressing shall be done before the stone is laid in the work. No dressing and hammering which will loosen the masonry will be permitted after it is once placed.

The courses of the masonry shall ordinarily be predetermined. Where there is to be variation in the depth of courses, larger stones shall be placed in the lower courses,

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the thickness of course decreasing gradually towards the top of the wall. The variation in depth of course shall be adopted after the approval of the Engineer.

The stones shall thoroughly be wetted before placing on the bed of the mortar and before covering with mortar. The bed to receive the stones shall be cleaned, wetted and covered with a layer of fresh mortar to a smaller length so that stones can be laid before the mortar has set. All stones shall be bedded full in mortar and the vertical joints filled with mortar. The stones so set in the mortar shall be settled carefully in place with a wooden mallet immediately on placement and solidly bedded in mortar before it has set. Clean chips and spalls shall be wedged into the mortar joints wherever necessary. Such wedging should not disturb face stones. No dry or hollow space shall be felt any where in the masonry and each stone shall have all the embedded face completely covered with mortar. Pouring of water to the mortar laid on the joints and stones is prohibited.

In case any stone already set in mortar is disturbed or the joints broken, the stone shall be taken out without disturbing the adjoining stones and joints, the mortar thoroughly cleaned from the joints and the stone reset in fresh mortar. Attempts shall never be made to shade one stone over another already laid.

The bed of the face stones shall be horizontal unless otherwise ordered by the Engineer they shall be set in regular courses of uniform thickness from bottom to top throughout. No face stone shall be less than 15 cm. in thickness.

Unless otherwise ordered by the Engineer the height of each course shall be the height of the stone used in the course. Stones of different depths shall not be used, height of each course shall not exceed breadth at face nor thickness inwards.

The face stone shall be laid alternately in headers and stretchers, so as to break joints by at least 75 mm. Header shall project at least 100 mm. beyond the stretchers. The joints should not exceed 12 mm. in thickness.

All connected masonry in a structure shall be carried up to nearly at one uniform level throughout but when breaks are unavoidable, the masonry shall be raked in sufficiently long steps for facilitating joining of old and new work. The steeping of the raking shall not be more than 45 degrees with the horizontal.

6.3.3 JOINTS FOR STONE MASONRY:

For each 10 m of running length a vertical joint of 25 mm thickness or as directed by the Engineer shall be provided .

6.4 PROTECTION AGAINST DAMAGE

Care shall be taken by the bidder during construction that edges of jambs, sills, heads etc. are not damaged. In inclement weather, newly built works shall be covered with gunny bags or tarpaulin, so as to prevent the mortar from being washed away.

6.5 CURING

All masonry work shall be kept constantly wet for a period not less than two weeks from the date of construction in order to avoid the mortar being dried up before it has attained final set and also to prevent crumbling. If the contractor fails to do curing to the satisfaction of the Engineer of the work, the latter will either make arrangement to cure the masonry at the risk and cost of the contractor or order the masonry to be dismantled. The masonry so dismantled shall be rebuilt by the contractor at his own cost.

6.6 INSPECTION

The brick (or stone) masonry should ensure its satisfactory performance and all recommended practice of workmanship shall be adopted at every stage. The Engineer-in-charge may inspect and reject the defective work which should be rebuilt at the cost of contractor, for which no claim for compensation what-so-ever will be entertained.

6.7 SCAFFOLDING FOR MASONRY, PLASTERING AND POINTING:

The scaffolding shall be sound and strong enough to withstand all loads likely to come upon it. The holes which provides space for horizontal members for supporting the scaffolding shall be filled up and made good .

6.8 QUALITY CONTROL FOR MASONRY WORK

Following rules shall be observed to ensure effective quality control of works.

(a) Do not place mortar which bleeds excessively .

(b) Clean the old masonry surface prior to starting masonry on it be wet sand blasting, chiseling and washing .

(c) Keep the surface continuously moist.

(d) Thoroughly and effectively broom into the old surface a layer of mortar and build the masonry work on it immediately.

(e) Masonry work shall invariably be done during day light hours .

(f) Ensure placing of stone in their natural bed .

(g) Avoid under-pinning after a stone is laid .

(h) Avoid inserting spalls in space between stones before it is filled up with mortar.

(i) Avoid inserting flat side of spalls at joints . Have all spalls driven end-wise.

(j) Before inserting spalls , shake the mortar well and vibrate the stone by hammer to facilitate excess mortar to come out .

(k) Distribute work so that fresh layer of masonry are started every alternate day .Incase of long stoppage of work suitable depression should be left to a depth of one or two course for proper laying and effective bondage.

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6.9 MEASUREMENT AND PAYMENT FOR MASONRY WORK

Measurement for payment of random rubble stone masonry and brick masonry in cement mortar as specified in BOQ shall be made to the lines & dimensions shown or as directed by the Engineer-in-charge in the specified drawing. The quantity so executed shall be paid per cubic meter of constructions. No allowance shall be made for the masonry constructed beyond design section. The rate shall include cost, conveyance, royalty, taxes etc. of all materials, all labour cost, dressing charges, cost of mixing mortar, laying the masonry, curing, cost of required tools and plants, scaffolding, cost of construction and removal of coffer dam if required and all other incidental charges for satisfactory completion of the item of work.

6.10 CEMENT PLASTERING AND POINTING:

6.10.1 GENERAL :

I. For surface which is to be subsequently plastered or pointed, the joints of masonry shall be raked squarely for a minimum depth of 20 mm while the mortar is still green. The raked joints shall be well brushed to remove dust and loose particles and surface shall be thoroughly washed and cleaned.

II. The surface so prepared shall be kept wet for a period of minimum 24 hours proceeding to plastering or pointing.

III. Moistening, cleaning , surface drying and complete curing are utmost importance for thorough bond and water tightness .

6.10.2 PREPARATION OF SURFACE FOR PLASTERING

The roughening of the background improves the bond of plaster. All joints shall be thoroughly raked. After roughening the surface, care shall be taken to moisten the surface sufficiently before plastering as otherwise freshly exposed surface may tend to absorb considerable amount of water from the plaster. The surface shall be wetted evenly before applying the plaster. Care shall be taken to see that the surface is not too dry as this may cause lack of adhesion or excessive suction of water from the plaster. A fog spray may be used for this work. As far possible, the plastering work shall not be done under hot sun.

6.10.3 LAYING OF PLASTERING

Plaster when applied shall have a thickness of average 20 mm/16mm over stone masonry and 16 mm/12mm over brick masonry as specified in BOQ. The mortar shall be applied by steel trowels into the joints and filling the joints ensured by pushing the edge of steel trowel into joints. Mortar shall then be applied and roughly finished by steel trowel. The plaster surface will be finished by wooden trowel giving neat lines in plumb and plan.

6.10.4 PREPARATION OF SURFACE FOR POINTING

The joints in the masonry shall be raked out to a depth not less than the width of the joint or as directed when the mortar is green. Joints shall be brushed clean of dust and loose particles with a stiff brush. The area shall then be washed and the joint thoroughly wetted before pointing is commenced.

6.10.5 LAYING OF POINTING

The pointing to be done shall be flush pointing with cement mortar. The mortar shall not be spread over the corners, edges or surface of the masonry. The pointing shall then be finished as detailed below. The mortar shall be finished off flush and level with the edges of the stones, so as to give a smooth appearance. The edges shall be neatly trimmed with a trowel and a straight edge. Pointing should have minimum thickness of 20mm. When finished, the mortar pointing shall be restricted to the width of the joints and all superfluous mortar shall be removed with a trowel. The work shall be executed as rapidly as possible and not again touched after it has begun to set and kept wet for a minimum period of 14 days thereafter.

6.10.6 CURING

Specification is the same as for masonry as laid down in previous Paras.

6.10.7 MEASUREMENT AND PAYMENT:

(a) Measurement for payment of cement plastering and pointing shall be made on the basis of surface area of plastering or pointing actually contained within the profile as shown in the drawing or as directed by the Engineer-in-charge .

(b) The rate shall include cost of conveyance, taxes, royalty etc of all materials, cost of labour, required tools and plants, providing extra slurry and mortar as required for the work ,curing, construction and removal of coffer dam if required and all other incidental charges etc. for satisfactory completion of the respective item of work and excluding GST.

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SUB-SECTION-7

7.0 CONCRETE

7.1 DESCRIPTION OF ITEMS

7.1.1 Cement concrete M-10/M-15 grade with 40mm/20mm &downgraded hard granite crusher broken aggregates as specified in BOQ free from weathered skin surface, dust and any other deleterious materials including cost , carriage, royalty, taxes etc. of all materials including machine mixing, watering, compacting with vibrators, hoisting and laying in position for a finished smooth surface and curing with all leads, lifts and delifts including hire and running charges of machineries, construction & removal of coffer dam if required with all other incidental charges etc. complete as per specification, drawing and direction of Engineer-in-charge.

7.1.2 Cement concrete M-20 grade with 40mm/20mm &downgraded hard granite crusher broken aggregates as specified in BOQ free from weathered skin surface, dust and any other deleterious materials including rigid smooth centering and shuttering, cost, carriage, royalty, taxes etc. of all materials including machine mixing, watering, compacting with vibrators, hoisting and laying in position for a finished smooth surface and curing with all leads, lifts and delifts including hire and running charges of machineries construction & removal of coffer dam if required with all other incidental charges etc. complete as per specification, drawing and direction of Engineer-in-charge

7.1.3 Reinforced Cement concrete M-20 grade with 20mm &downgraded hard granite crusher broken aggregates as specified in BOQ free from weathered skin surface, dust and any other deleterious materials including rigid smooth centering and shuttering, cost, carriage, royalty, taxes etc. of all materials including machine mixing, watering, compacting with vibrators, hoisting and laying in position for a finished smooth surface and curing with all leads, lifts and delifts including hire and running charges of machineries construction & removal of coffer dam if required with all other incidental charges etc. complete as per specification, drawing and direction of Engineer-in-charge

7.1.4 Reinforced Cement concrete M-25 grade with 20mm & downgraded hard granite crusher broken chips as specified in BOQ free from weathered skin surface, dust & any other deleterious materials including rigid smooth centering and shuttering, cost, carriage, royalty, taxes etc. of all materials including machine mixing, watering, compacting with vibrators, hoisting and laying in position for a finished smooth surface and curing with all leads, lifts and delifts including hire and running charges of machineries, construction & removal of coffer dam if required with all other incidental charges etc. complete as per specification, drawing and direction of Engineer-in-charge

7.1.5 Reinforced cement concrete M-30 grade with 20mm &downgraded hard granite crusher

broken chips as specified in BOQ free from weathered skin surface, dust and any other deleterious materials including rigid smooth centering and shuttering, cost, carriage, royalty & taxes of all materials except steel with machine mixing, watering, compacting with vibrator, hoisting & laying in position for a finished smooth surface and curing with all leads, lifts &delifts including hire & running charges of machineries, construction & removal of coffer dam if required with all other incidental charges etc. complete as per specification, drawing and direction of Engineer-in-charge.

7.2 GENERAL

Concrete shall be composed of cement, sand, aggregate, water and any other admixture as specified in recommended proportion 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, work ability, density and impermeability together with the maximum practicable economy. As per approval of Engineer in charge on recommendation of quality control organization, the water cement ratio for the concrete will be regulated by the requirements of strength durability and workability. The concrete shall be uniform consistency and quality throughout any pour and for similar parts of the same structure. However, the consistency composition shall be such that the concrete can be worked into all corners.The allowable slump or consistency shall be as directed. The consistency of the concrete shall be varied only by increasing or by decreasing the amount of cement paste in each batch and not by any change of water cement ratio.

The consumption of cement, coarse aggregates & sand for one cubic meter of various grade of concrete shall be calculated as per provision against scheduled of rate.

Grade of concrete	With 40mm &down graded aggregates			With 20mm &down graded aggregates		
	Cement (kg)	Coarse aggregates (cum)	Sand (cum)	Cement (kg)	Coarse aggregates (cum)	Sand (cum)
M 15	270.00	0.90	0.45	280.00	0.90	0.45
M 20	344.00	0.90	0.45	347.33	0.90	0.45
M 25	--	--	--	403.33	0.90	0.45
M 30	-	-	-	406.66	0.90	0.45

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In case of actual consumption of cement, as per direction of Engineer-in-charge on recommendation of design mix by Quality Control Organisation for the grade of concrete if different from the above, the cost for excess or less consumption will paid extra or deducted respectively.

7.3 STRENGTH OF CONCRETE

Grades of concrete	Compressive strength in N/mm^2 on 150mm cube	
	Minimum at 7 days	Minimum at 28 days
M-15	7	10
M-20	10	15
M-25	13	20
M-30	15	30

7.4 STORAGE OF AGGREGATE

(a) Aggregate shall be stacked in such a way as to prevent the intrusion of foreign materials such as soil, vegetable matter etc. Heaps of fine and coarse aggregates shall be kept separate. Where different sizes of fine or coarse aggregate are procured separately, they shall be stored in separate stock piles, sufficiently away from each other to prevent the materials at the edge of the piles from getting intermixed with each other.

(b) The aggregates shall be stock-piled adjacent to the mixer site so as to require minimum re-handling and labour when conveyed to the mix.

(c) The aggregates shall be placed on a dry patch of ground. The aggregates shall be kept free of dirt, rubbish, papers, vegetable matters etc. on the stock piles.

(d) To minimize moisture variation the stock piles shall be spread over as large in area as possible but left low and fairly uniform in height preferably 1.25 to 1.50 meter and the lowest layer of about 30 cm height shall be allowed to act as drainage layer and not used till end.

7.5 FORM WORKS

a. Form shall be used wherever necessary to confine the concrete and shaping it to the required lines. If a type of form does into consistently perform in an acceptable manner as determined by the Engineer-in-charge the type of form shall be changed and method of erection shall be modified by the contractor subject to approval of the Engineer-in-charge.

Plumb and string lines shall be installed before and maintained during concrete placement. Such lines shall be used by the contractor's personnel and by the Engineer-

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in-charge and shall be in sufficient number and properly installed as determined by the Engineer-in-charge. During concrete placement the contractor shall continuously monitor plumb and string line form positions and immediately correct deficiencies.

Forms shall have sufficient strength to withstand the pressure resulting from placement and vibration of the concrete and shall be maintained rigidly in position. Where form vibrators are to be used forms shall be sufficiently rigid to effectively transmit energy from the form vibrators to the concrete while not damaging or altering the positions of forms. Forms shall be sufficiently tight to prevent of loss of mortar from the concrete. Chamfer strips shall be placed to produce beveled edges on permanently exposed concrete surfaces. Interior angle of inter setting concrete surfaces and edges of construction joints shall not be beveled except where indicated on the drawings.

Suitable struts or stiffeners or ties shall be used for the form work wherever necessary. All supports shall be braced and cross braced into two directions. All splices and braces shall be secured by bolting unless specially intended otherwise. All struts shall be firmly supported against settlement and slipping, by suitable means as directed. All supports shall be cut square at both ends and firmly supported against settlement and slipping. When the form work is supported on soil, sleepers etc. shall be used to properly disperse the loads. In case the supports rest on already completed beam or slab suitable props shall be provided under the latter.

b. The form work shall be of well seasoned timber or steel. When timber forms are used they shall be lined with MS sheet or other suitable smooth faced non absorbent materials as specified. Supports may be of timber of steel. Suitable wedges in pairs to facilitate adjustment and subsequent releasing of forms shall be provided preferably at the upper end of the supports. The details of the proposed form work and supports shall be submitted to the Engineer-in-charge and got approved before erection.

c. In case of columns, retaining walls or deep vertical component the height of the column shall facilitate shall placement and compaction of concrete and suitable arrangement may be made for securing the forms to the already poured concrete for placing the subsequent lifts. No steel tie or wires used for securing this form work shall be left exposed of the face of the finished work.

d. Suitable inserts for block outs for electrical and other service fixtures where necessary shall be provided in the required locations as specified.

e. Cleaning and oiling of forms:-. At the time the concrete is placed in forms, the surfaces of the forms shall be free from encrustations of mortar grout or other foreign material. Before concrete is placed the surface of the forms shall be oiled with commercial forms of oil.

f. Removal of forms

The steeping of formwork shall conform to clause 10.3 of IS 456-2000. The contractor shall be liable for damage and injury caused by removing forms before the concrete has gained sufficient strength. Forms on upper sloping 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 prevent sagging. Any needed repairs or treatment required on such slopping surfaces shall be performed at once and be followed immediately by permitted curing.

To avoid incessant appearance in concrete that might result from swelling of forms, wood forms for wall openings shall be loosened as soon as the loosening can be accomplished without damages to the concrete. Forms for the opening shall be constructed as to facilitate such loosening. Forms shall be removed with care so as to avoid injury to concrete and any concrete so damaged shall be repaired in accordance with paragraph 6.2.21.

g. Cost.

The cost of furnishing all materials and performing all works for constructing forms including any necessary treatment or coating of forms is included in the item of form work provided in the bill of quantities.

7.6 MIXING

The concrete ingredients shall be thoroughly mixed in mechanical mixers designed to positively insure uniform distribution of all the component materials through out the concrete at the end of the mixing period. Mixing shall be done as per clause 9 of IS 456-2000. The mixer should comply with IS 1971-1985 (IS Specifications for batch type concrete mixers)

The concrete as discharged from the mixer shall be uniform in composition and consistency from batch to batch. Workability shall be checked at frequent intervals as IS 1199-1959. Mixer shall be examined regularly by the Engineer-in-charge or his authorized Engineer for changes in conditions due to accumulation of hardened concrete or mortar or to wear of blades.

After mixer that at any time produces unsatisfactory mix, shall not be used until repaired. If repair attempts are unsuccessful a defective mixer shall be replaced. Batch capacity shall be at least 10% of but not in excess of the rate capacity of the mixer unless otherwise authorized by the Engineer-in-charge.

(a) For all work concrete ingredients shall be thoroughly mixed in mechanical mixer to ensure uniform distribution of all component materials throughout the concrete at the end of the mixing period and shall be as dense as possible,

plastic enough to consolidate well, Mixing shall be done as per I.S.456-1978.

(b) Mixing shall be continued until there is an uniform distribution of the materials and the concrete is uniform in colour and consistency. and to the satisfaction of the Engineer. The time of mixing shall be as shown in Table-1 of IS: 457-1978 reproduced herein.

Capacity of mixer	Minimum time of mixing	
	Natural aggregates	Manufactured aggregates
3 m^3 or larger	2 minutes	2½ minutes
2 m^3	1½ minutes	2 minutes
1 m^3 or smaller	1¼ minutes	1½ minutes

(c) The concrete as discharged from the mixer, shall be uniform in composition and consistency, Workability shall be checked at frequent intervals as per IS : 199 – 1959. Mixers will be examined regularly by the Engineer-in-charge for changes in conditions due to accumulations of hardened concrete or mortar or to wear and tear of blades. Any mixer that at any time produces unsatisfactory mix, shall not be used until repaired. If repair attempts arte unsuccessful, a defective mixer shall be replaced. Batch size shall be at least 10% but not in excess of the rated capacity of the mixer.

(d) The first concrete batch at the start of continuous mixing operation or after lapses of 30 minutes in continuous mixing operation shall be made richer by the addition of extra cement as directed.

(e) The full contents of the drum shall be discharged quickly to avoid segregation.

(f) The minimum mixing period specified are conditioned on the material being fed into the mixer in a manner which will facilitate efficient mixing and an operation of the mixer at its designed speed. The following sequence of charging the mixer may be adopted.

Five to ten percent of the total quantity of water required for mixing adequate to wash the drum thoroughly shall be introduced before the other ingredients in order to prevent any caulking of the cement on the blades or side of the mixer.

i. All dry ingredients (Cement, fine and coarse aggregates) shall be simultaneously fed into the mixer in such a manner that the period of flow for each ingredient is about the same. Eighty to Ninety percent of the total quantity of water required for mixing shall be added uniformly along with the dry ingredients.

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ii. The remaining quantity of water shall be added after all the other ingredients are in the mixer.

iii. Portion of the coarse aggregate, however may be added last. This facilitates clearance of the chutes and removes the fine aggregate or cement adhering to the sides.

(g) Concrete which has been kept unused for more than 30 minutes after the addition of water shall be rejected unless the concrete is in such a condition that it can be subsequently vibrated in place and its use is specifically permitted.

(h) When the mixer is stopped, before placing again any ingredients in the mixer all hardened concrete or mortar shall be removed from inner surface of the mixer.

(i) The re tempering of partially hardened concrete or mortar requiring renewed mixing with or without the addition of cement, aggregate or water shall not be permitted.

(j) A representative of Engineer-in-charge shall supervise all stages of production of concrete, preparation of test specifications and site test shall be supervised.

7.7 TRANSPORTATION OF CONCRETE

Concrete shall be transported from mixer to the place of final placement as rapidly as possible by method which will prevent segregation of the ingredients or slump loss in excess of 25mm and/ or a loss in air content of more than one percent before the concrete is placed in the works. It shall be transported, laid and compacted in its final position within 30 minutes of its discharge from the mixer unless carried in properly designed agitators. Whenever the length of haul from the mixing plant to the place of deposit is such that the concrete unduly compacts or segregates suitable agitators or transit mixers shall be used for conveying concrete.

7.8 PREPARATION BEFORE PLACING CONCRETE

7.8.1 GENERAL REQUIREMENT

Concrete shall not be placed in any part until all form work required is completed as per drawing & specification and no concrete shall be deposited until the foundation has been inspected and approved by the Engineer-in-charge.

7.8.2 FOUNDATION SURFACES

(a) Immediately before placing concrete all surfaces of foundations upon or against which the concrete is to be placed, shall be free from standing water, mud and debris. All surfaces of rocks upon or against which concrete is to be placed shall in addition to the foregoing requirement be cleaned and free from all lubricants. Objectionable coating and loose semidetached or unsound fragments are to be removed. The surface of absorptive foundations upon or against which concrete is to be placed shall

be moistened thoroughly and kept sufficient wet for at least 24 hours prior to placing concrete so that moisture will not be drawn from the freshly placed concrete.

(b) In the case of earth or shale foundations, all soft or loose soft and surface debris shall be scraped and removed.

7.8.3 R.C.C. WORK

No concrete shall be placed unless the reinforcement and centering & shuttering provided is checked, premeasured and approved by the Engineer-in-charge.

7.9 PLACING AND COMPACTING CONCRETE

7.9.1 GENERAL

(a) All surfaces upon or against which concrete is to be laid shall be prepared in accordance with the drawings.

(b) If concreting is not started within 24 hours of the approval being given, it shall have to be obtained again.

(c) All absorptive surfaces against which concrete is to be laid shall be moistened thoroughly so that moisture will not be withdrawn from the freshly placed concrete. The surfaces however shall be free from standing water. The concrete shall be deposited as nearly as possible in its final position and compacted before setting commences and should not be subsequently disturbed. Methods of placing should not be such as to avoid segregation. Care should be taken to avoid displacement of reinforcement or movement of form work. All concrete which has set before placement shall be rejected and immediately removed from site of work.

(d) The construction joints at the end of each days work should be left vertical only at location as approved by authorised representative of the Engineer-in-charge.

7.9.2 COMPACTION

Concrete shall be thoroughly compacted during the operation of placing and thoroughly worked.

(a) All concrete shall be compacted to produce a dense homogeneous mass with the assistance of vibrators or thappies in such a manner that it is free from pockets of coarse aggregate and is in intimate contact with surface of forms.

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

7.10 CURING AND PROTECTING

7.10.1 GENERAL.

The contractor shall furnish all materials and perform all work required for curing

concrete. All concrete including bed and sides of drain lining shall be cured by water curing.

The precast slab for drain lining shall be cured by keeping them immersed in water for seven days and by sprinkling water for another 21 days with straw canvass, hessian or similar materials cover over slab.

The uniformed top surfaces of bridges decks shall be cured for 28 days with a damp sand cover or curing mat cover. The sand or curing mats shall not be kept so wet as to allow water to drain from them which may stain other concrete. The sand or curing mats shall be removed after expire of the curing period.

All concrete surfaces shall be treated as specified to prevent loss of moisture from the concrete until the required curing period elapsed or until immediately prior to placement of other concrete or back fill against those surfaces. Only sufficient time to prepare construction joint surfaces and to bring them to a surface dry condition shall be allowed between discontinuance of curing and placement of adjacent concrete.

Forms shall be removed within 24 hours after the concrete has hardened sufficiently conforming to IS 456-2000 to prevent structural collapse or other damage by careful form removal. Where required repair of all minor surface imperfection shall be made immediately after form removal and prior to curing, minor surface repair shall be completed within 2 hours after form removal and shall be immediately followed by the initiation of curing by the applicable method specified herein. Concrete surfaces shall be kept continuously moist after form removal until initiation of curing.

In case the curing operations are inadequate or unsatisfactory, the Engineer-in-charge shall be entitled to take such steps as he may deem necessary to make good the deficiencies and defects at the Contractor's risk and cost. Curing and protection should confirm of IS: 457-1957 with the latest amendments.

7.10.2 MATERIALS:

Concrete cured with water shall be kept wet at least for 28 days from the time the concrete has attained sufficient set to prevent detrimental efforts to the concrete surfaces. The concrete surfaces to be cured shall be kept wet covering them with water saturated materials by using a system of perforated pipes, mechanical sprinklers or porous hose or by other methods which will keep all surface continuously wet. All curing methods are subject to approval of Engineer-in-charge.

7.10.3 COST:

The cost of furnishing all materials and performing all work for curing concrete shall be included in the price bid in the bill of quantities for the concrete on the particular curing methods are required.

7.11 TESTS AND STANDARDS OF ACCEPTANCE

7.11.1 GENERAL

Testing of concrete shall be carried out by the Quality Control Organisation of the Department. The representative samples shall be taken from the site of work during laying of the concrete as desired by Engineer-in-charge for testing purpose.

7.11.2 SAMPLING PROCEDURE AND FREQUENCY

7.11.2.1 A random sampling procedure shall be adopted to ensure that each concrete batch has a reasonable chance of being tested i.e. the sampling should be spread over the entire period of concreting and should cover all mixing units.

7.11.2.2 FREQUENCY: The minimum frequency of sampling of concrete of each grade shall be in accordance with the following-

Quantity of concrete in cum	Number of samples.
1 to 5	1
6 to 15	2
16 to 30	3
31 to 50	4
51 to above. every 50 cum. or part thereof.	4 plus one additional sample for

Note At least one sample shall be taken during each shift.

7.11.2.3 TEST FACILITIES:

The contractor shall furnish free of cost samples of all ingredients of concrete for testing. He should also supply free of cost the samples of all the ingredients of concrete used in the work for the test to be conducted by the Engineer-in-charge or any officer nominated by him.

7.11.2.3 CONSISTENCIES:

The slump of concrete at the placement shall be as follows :

Sl. No.	Place condition	Degree of workability	Value of workability.
1.	Concreting of light reinforced sections without vibration or heavily reinforced section with brat ions.	Medium	25mm to 75mm slump for 20 aggregate.

II. For plain concrete work, slump requirements mentioned in item 1 above are applicable.

III. Lining with slip form machine 60 to 70 mm slump for concrete paver finish.

If the specified slump is exceeded at the placement, the concrete is unacceptable. The Engineer-in-charge reserves the right to require lesser slump whenever concrete of such

lesser slump can be consolidated readily into place by means of vibration specified by the Engineer-in-charge. The use of equipment which will not readily handle and place concrete of the specified slump will not be permitted.

To maintain concrete at proper consistency, the amount t of water and sand batched for concrete shall be adjusted compensate for any variation in the moisture content or grading of the aggregates as they enter the mixer. Addition of water to compensate for stiffening of the concrete after mixing but before placing will not be permitted. Uniformity in concrete consistency from batch to batch will be required.

7.11.3 TEST SPECIMEN

Three test specimens shall be made from each sample for testing at 28 days. Additional cubes may be required for various purposes, such as to determine the strength of concrete at 7 days or at the time of striking from work, or to determine the duration of curing or to check the testing cubes by accelerated methods as described in IS: 9013-1978. The specimen shall be tested as described in IS: 516-1959.

7.11.4 TEST STRENGTH OF SAMPLES AND ACCEPTANCE CRITERIA

(a) The test strength of the samples shall be the average of three specimens. Individual variation shall not be more than 15% of the average.

(b) Contractor shall provide necessary unskilled labour and facilities for collection of samples, curing in tanks, transportation of cores etc. and his authorized representative shall remain present at the time when the samples cores etc. are collected. Testing shall be carried out at the testing laboratories set up close to the site or at any other laboratory that the Engineer-in-charge may decide upon and the results given thereby shall be considered as correct and authentic and acceptable to the contractor. The contractor shall be given access to all operations and tests that may be carried out as aforesaid.

7.12 MEASUREMENT AND PAYMENT OF CONCRETE

Measurement and payment for cement concrete items shall be made on the basis of the actual volume of the concrete laid for finished items. The rate includes the cost of labour and materials, plant etc. involved in providing cement, slurry and mortar on concrete and construction joints shall be deemed to be included in the unit rates for the respective items. The rates shall include construction of FootBridge and traffic island, coffer dam and removal of the same if required and all other incidental charges as produced finished item of work. For R.C.C. work, the cost of round tor steel rod including bending and binding etc. shall be paid as a separate item explained elsewhere. No claim for extra payment, in case of higher strength of concrete than designated, de waterwillbe entertained.

SUB-SECTION-8

8.0 MISCELLANEOUS ITEMS OF WORK

8.1 SUPPLYING, LAYING & FIXING OF R.C.C. HUME PIPES

8.1.1 DESCRIPTION OF ITEMS

Supplying, laying and fixing R.C.C. hume pipe in position and collar jointing with necessary twisted and coal tarred hemp yarn including crawling and filling with C.M. (1:1) and finishing the same smooth and curing including cost, conveyance, taxes etc. of R.C.C. hume pipes and all other materials and all other incidental charges etc. complete as per specification and direction of Engineer-in-charge.

8.1.2 GENERAL

R.C.C. hume pipe shall have diameter as specified in the schedule of quantities and shall be of non pressure NP_2/NP_3 class conforming to IS 458-1971. Length of the pipe shall not be less than 2.00 M or otherwise directed by the Engineer. The contractor shall order the pipes required for the work on the basis of the construction drawings supplied to him by the Engineer. Pipes not conforming to the required specification shall be rejected and the pipes shall be removed away from the work site by the contractor at his own cost.

Work shall be done as per IS 783-1956 or its latest edition. Reasonable care shall be exercised in loading, transporting and unloading the concrete pipes. Handling shall be such as to avoid impact. All pipes shall be inspected thoroughly before being laid. Broken or defective pipe shall not be used. Trench shall be of sufficient width side slope to provide for free working space in minimum 30 cm on either side of the pipe. Pipes shall be lowered into the trenches by use of standards appliance. Pipe shall be laid true to line and as specified on the construction drawings. Laying of pipes shall be along proposed grade of the slope. The socket ends of pipe shall face upstream. The connections of the pipes shall be joined together in such a manner that these shall produce perfect even surface along the inside of the pipe. The joining of hume pipes shall be done with necessary twisted and coal tarred hamp yarn including crawling and filling with cement mortar (1:1) and finishing the same smooth and curing for a minimum period of 14 days shall be made. In no case pipes shall be laid directly on rock or other hard materials. Proper care shall be taken to avoid any type of accidents during process of handling of R.C.C. hume pipes.

Trenches shall be kept free from water until the material in the joints has hardened. Walking or working on the completed pipe shall not be permitted until the trench has been back filled to a height of at least 45 cm. Over the pipe except as may necessary for back filling and compaction.

Trenches shall be backfilled after pipe has been laid subject to the condition that joining has hardened. Only selected materials shall be used for backfilling. Filling of the trench shall be carried out simultaneously on both sides of pipe in such manner that unequal pressure does not occur.

8.1.3 MEASUREMENT AND PAYMENT

Measurement for payment shall be made on running metre basis of the hume pipe line. The rate shall include cost of hume pipes including cost of loading, conveying, unloading, hauling, handling, storing & laying in position with cost of jointing and curing and all other incidental charges to complete the work as per the specification and direction of Engineer-in-charge.

8.2 ROUGH STONE DRY PACKING

8.2.1 DESCRIPTION OF ITEMS

Rough stone dry packing in aprons and revetments with approved quality of hard granite stones of 30 cm size and above or 15 cm to 30 cm size as specified in BOQ to required shape with all leads, lifts and delifts including cost, carriage, taxes, royalty etc. of stone, labour for preparation of surface for packing if required and all other incidental charges etc. complete as per drawing, specifications and direction of the Engineer-in- Charge.

8.2.2 GENERAL:

The pitching materials shall consist of the most durable rock fragments of approved quality selected for the purpose. Stone shall be used from the surplus usable excavated rubble or from the approved quarries, if required and shall be subjected to thorough inspection and approval by the Engineer. The quality of individual stones shall be dense, sound and resistant to abrasion and shall be free from cracks, seams, shale partings, conglomerate, bands and other defects that would tend to increase unduly their susceptibility to destruction by water and weathering action. The shape of individual stones shall be angular. Stone having thickness less than 50% of their maximum dimensions shall not be used for pitching.

The compacted embankment, the slope of which is to be protected with stone pitching, shall be trimmed to the lines and slopes as prescribed on the drawings or as directed by the Engineer from time to time. The earth obtained from this trimming shall be laid on top of the embankment if required or as directed by the Engineer.

Pitching shall be hand placed on upstream slope of the canal embankment. The thickness of pitching shall be as indicated on the drawings. The thickness shall be measured normal to the slope of the embankment. Launching apron shall be hand placed in horizontal layers and upstream and down stream of the structures and its thickness shall be as indicated on the drawings.

Before laying the pitching/ launching apron on level ground or on sides of the banks, the receiving surface shall be trimmed to the required slopes and profiles put by means of lines and plates at regular intervals. Depressions shall be filled up and thoroughly compacted. Pitching on inverted filter, if any, shall be started from the end and built in courses upwards. Stones shall be placed by derrick or by hand and so placed that the largest dimensions are perpendicular to the face of the slope. The larger stones shall be placed in the bottom course and for use as headers for subsequent courses.

All interstices between adjacent stones shall be filled with spalls of proper sizes and wedged in with hammer to ensure tight packing.

8.2.3 MEASUREMENT AND PAYMENT

Measurement for payment will be made on the basis of volumetric measurement of finished stone packing. The unit rate is inclusive of trimming the earth to required profile, slopes and grade and/ or preparing level at suitable intervals as directed, to have uniform base.

8.3 WEEP HOLES:

Providing weep holes and placing in position 10 cm dia Asbestos Cement pipes with non-corroding jalli as per design and drawings.

8.3.1 GENERAL

a) Weep holes of the size as shown on the drawings shall be provided and they shall extend through the full width of the masonry with a slope of about 1 vertical to 20 horizontal towards the draining face to drain moisture from the backfilling, the spacing of holes shall be as per the drawings in either direction staggered. The sides and bottom of weep holes in the interior shall be made up in the stones/ concrete having fairly plain surface as channel so formed slab bed over with stones/ concrete lintels not less than 150mm and each side including centering and shuttering. In stone masonry, generally the height of weep holes shall be the same as the height of the course in which they are formed. Filters behind weep holes with jally shall be provided to the dimensions and grades as shown on the drawings with inverted backing of approved quality filter materials in back filling side.

b) In case the length of the pipe falls short of the standard length of the pipe, it shall be joined with necessary collars in cement mortar 1:3 of as per the instruction of the Engineer to form continuous hole in the body of wall. Defective pipes or defective work shall not be measured and paid. These shall be removed and replaced by the contractor. The interior of all pipes shall be free from sand, mortar or dirt and other foreign matter. Care shall be taken to prevent entrance of any foreign matter into the pipes during progress of work.

8.4 TURFING:

8.4.1 DESCRIPTION OF ITEMS

Fine dressing and turfing the slopes of canal/drain banks with compacted dub grasses including cutting & conveying the turf by mechanical means and placing the turf with all leads, lifts and delifts including watering up to full size growth of the grass and all other incidental charges etc. completed as per direction of the Engineer-in-charge. (Full payment will be made only after survival of the turf).

8.4.2 GENERAL:

The turf shall be of good approved quality 'dub grass' not less than 15cm size. The contractor shall have to arrange the 'dub grass' at his own cost. The contractor shall have to make good the damages to the slopes of the embankment due to rain cuts etc. and bringing it to proper profile before the turf is laid. The turf shall be laid to finished designed slope and profile, rammed for compaction and be watered up to green growth of the grass. There will be deduction of 20% quantity of earth work if the agency fails to complete the turfing work.

8.4.3 MEASUREMENT AND PAYMENT:

Measurement for payment of turfing shall be made after full and satisfactory growth of the turf. Measurement shall be made on square meter basis and the until rate shall be for 1 sqm of the area. The rate shall include cost of all labour, cost, conveyance including cost of watering and all other incidental charges to complete the work as per specification and direction of Engineer-in-charge.

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SUB-SECTION-9

9. SPECIFICATION FOR EARTH WORK IN THE CONSTRUCTION OF EARTH EMBANKMENT FOR ROAD WORK:

9.1.1 SCOPE

The specification shall apply to the construction of embankment & of miscellaneous backfills with materials obtained either from excavation for road construction, borrow-pits or either selected borrow areas. All embankments shall be constructed in accordance with the specifications & in conformity with the alignment level, cross sections & dimensions shown in the plans or as started by the Engineer-in-Charge.

9.1.1. MATERIAL: The scope of these specifications are restricted to soil alone, being the construction material. The soil used for embankments shall be free form stumps, tree roots, rubbish or other material likely to deteriorate or effect the stability of the embankment. Only materials considered suitable by the Engineer-in-Charge shall be utilized for the construction & that considered unsuitable shall be disposed of as directed by him.

9.1.2. For the purpose of these specification soil will be taken to include gravel or moorum.

9.1.3. The selection of the materials to be used in the construction of embankment shall be made as per the directions of the Engineer-in-Charge according to soil survey & laboratory investigation conducted by him.

9.1.4. Quality control test such as gradation, P.I. Standard proctor test, deleterious constituents, natural M.C etc. shall be performed as directed by the Engineer-in-Charge & no extra payment will made in this regard.

9.2 EXCAVATION OF BORROW PITS:

9.2.1. As far as possible no borrow pits should be dug on road land. Before deciding to dig borrow pits on road land, earth for the embankment should be obtained.

(i) from cutting of nearby sections of the road.

(ii) from excavation improving sight distances at nearby curves.

(iii) by sectioning an adjacent bullah or waterway where necessary

(i) by excavating cuts to lead drainage water away form the road

(ii) by excavating side drains & catch water drains

(iii) from waste land outside the road land

(iv) from bumps above the general ground level with the road land

(v) by excavating tanks

(ix) from land acquired temporarily outside road land

(x) from soil mounds resulting form the digging of well & borrowings from fields in the vicinity of the road

9.2.2. Borrow pits should be rectangular in shape with on side parallel to the central line or

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the road. If no road land, they could be dug as near the road boundary as possible.

9.2.3. No borrow pits should be dug within 6 mtr. (16 ft.) of the final section of the road embankment, after making due allowance for future development.

9.2.4. Borrow pits should not be dug continuously. Ridges of not less than 8 mtr. (25 ft.) width should be left at intervals not exceeding 30 mtr. (100 ft.) Small drains should be cut through the ridges, in necessary to facilitate drainage.

9.2.5. When it becomes necessary to borrow earth from temporarily acquired cultivatable lands, the depth of borrow pits should not exceed 45cm. (1.5 ft.). The top soil to a depth of 15cm (6") should be stripped & stacked a side. Thereafter soil may be dug/cut to a further depth not exceeding 30 cm. (12") & used in forming the embankment. The top soil should then be spread back on the land. It is most important to adopt this practice when soil borrowed is from rich cultivatable land.

9.3 CONSTRUCTION PRELIMINARY OBSERVATIONS:

9.3.1 **Clearing & Grubbing:** Prior to the commencement to earth work the site shall be cleared of construction, including building, fences, abandon drainage structures & vegetation such as tree, roots undergrowth, grass, rubbish etc. except where it may be desirable to retain the vegetation for appearance shade or other reasons. Complete clearance shall be carried out within the actual construction limits.All trees & shrubs which are not expected to interfere with the construction & use of the highway should be preserved. Cost of removal or ordinary vegetation & minor jungle growth & disposal thereof as directed by the Engineer-in-Charge shall be included in the tender rate & shall not be paid for as extra.

9.3.2 Three stumps should be not extend more than 1ft. above the original ground nor should they be closer than 2 ft. to any sub-grade shoulder or slope surface. On areas to be cleared beyond the embankment & earthwork lines, stumps must be cut down below ground level so that appearance may not by unsightly.

9.3.3 The removal bush & stumps shall in cases be cleared away to waste lands preferably burnt no locations away from the road side. Materials possessing any salvage value should be stacked as directed by the Engineer-in-Charge.

9.3.4 Care shall be taken to see that unsuitable waste materials are disposed off in such a manner that there is no likelihood of its getting mixed with the materials proposed to be used for embankment construction.

9.3.5 **COMPACTING ORIGINAL GROUND:** In all cases where condition permit, the original ground shall be consolidated as much as reasonably possible or as directed by the Engineer-in-Charge by rolling or other means. Any empty pockets or depressions left in the soil as a result of clearing grubbing operations shall be filled & compacted. Nothing extra shall be paid for these operations.

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9.3.6 Where so directed by Engineer-in-Charge any unsuitable materials occurring in the embankment foundation shall be removed & replaced by approved materials.

9.3.7 Where the embankment is to be placed on steep sloping ground the surface of the ground shall be benched in step or trenched or broken up in such manner that the new materials will have bond with existing surface & the cost thereof shall be included in the tendered rate.

9.3.8 Where the embankment is to be placed over an existing road surface, the surface shall be scarified, so as to provide sample bond between old & new materials.

9.3.9 Embankment work shall not proceed until the foundation have been inspected by the Engineer-in-Charge for satisfactory & approved.

9.4 CONSTRUCTION PLACING OF EMBANKMENT MATERIALS:

9.4.1 Only materials as approved by the Engineer-in-Charge shall be utilized in the embankment. The work shall be so planned & executed that the best available materials are saved for the top portion of the embankment & sub-grades. Approved materials shall be obtained from approved area.

9.4.2 **EMBANKMENT SLOPES:** The embankment shall be built to have side slopes as shown in the drawings or as directed by the Engineer-in-Charge of the work.

9.4.3 **PLACING SOIL IN LAYERS:** To obtain adequate compaction, the embankment shall not be placed until the layer under construction has beenthoroughly compacted to satisfy the requirements laid down here after.

To ensure correctness, the execution of the toe-lines on the embankment shall be marked carefully with pages at close interval. The profile with due allowance for settlement shall be set up with the help of bamboos & string. The earth work of the embankment will be carried on uniformly in layer according to these profiles. Due care shall be exercised to ensure the loose thickness of each layer does not exceed the specified limit.

9.4.4 Layers exceeding 9” in loose depth shall be permitted only when the Engineer-in-Charge is satisfied that the compaction plant proposed to be used will achieve the specified compaction throughout the whole depth of the layer. Provided further that when a VRR is used the thickness of the loose layer shall not exceed the length of the tamping feet by more than 2”. The embankment materials shall be deposited in layer not more than 9” loose thickness unless otherwise specified & compacted to 100% proctor density at O.M.C with P.R.R.

9.4.5 Unless otherwise directed, the soil shall be spread uniformly over the entire width of the embankment.

9.4.6 If the soil shall less than the desired moisture content water shall be added to it either in the borrow pits before excavation is made, or after the soil is spread loosely on

embankment without any extra charge. Addition of water may be made in the former case through flooding or irrigating the borrow area & in the letter case through sprinkling the water either directly from a hose line or form a truck mounted water tank.

9.4.7 If the soil as delivered to the road formation is too wet, it shall be dried, by aeration & exposure to Sun, till the moisture content is acceptable for compaction.

Should circumstances arise where owing to wet weather the moisture content of certain soil can not the reduced to the appropriate amount by aeration, the compaction of these soils shall be suspended.

9.4.8 After adjusting the moisture content the soil shall be processed by the means of graders, borrows rotary mixers or other suitable equipment, until the layers are uniformly wet without any cost of Govt.

Clods or hard lumps of earth shall be broken down to size preferably of the order of 5 cm. (2") but under no circumstances shall be maximum size of suchclods exceed 15cm. (5") when being placed in the body of the embankment & the maximum size shall not exceed 6 cm. (2.5") when being place on the top to a depth of 50 cm. (18") of the embankment.

9.4.9 MOISTURE CONTENT & DENSITY:

The moisture content of each layer of soil at the time of compaction should be as directed by the Engineer-in-Charge. The M.C. of each layer of soil at the time of compaction should be at O.M.C. However, the tolerance limits for this MC of the soil with respect of OMC are between 1% above the optimum & 2% below the optimum value. The soil spread in layers shall be thoroughly compacted to the required densities & stipulated by IRC in their code 31.32 para 15.3, 15.4, 15.5 & 16. Each layer will be tested in field, for density & pronounced accepted by the Engineer-in-Charge before the next layer is laid.

9.4.10 The surface of the embankment shall at all times during construction be maintained as such a cross fall as will shed water & prevent pounding.

9.5 EMBANKMENT AROUND STRUCTURES

9.5.1 The filling around & over culverts & other structures in the embankment area shall be carried out independently of the work on the main embankment. The embankment shall be brought up simultaneously in equal layer on each side of the structure to avoid displacement & unequal pressure.

9.5.2 The soil in such cases shall be deposited in layers not exceeding 6" loose thickness & shall be compacted thoroughly & to the satisfaction of the Engineer-in-Charge. Where it may be impracticable to use power rollers or other heavy equipment, the compaction shall be carried out be mechanical tampers or other approved methods.

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9.7 COMPACTION CONTROL

9.7.1 PRIMILINARY INVESTIGATION : Preliminary investigations shall be made by the contractor at his own cost as per direction given by the Engineer-in-charge to determine the most economical procedure to be adopted to obtain the specified degree of compaction & the necessary field control (as a result of the suggested investigations it is generally found that it is sufficient to ensure that the soil laid in layers of the specified thickness, with the specified moisture, & it is rolled with the number of passes of the compaction equipment which are found to produce the specified degree of compaction).

9.7.2 The compaction control on the work in the field will be exercised by the department through frequent moisture content & density determination. The following control test shall be made on the borrow materials.

Sl. No.	Test	Test Method	Min. desirable frequency
1	Gradation	I.S. 2720 Pt. IV	1-2 tests per 300 cum of soil
2	P.I	I.S 2720 Pt. V	1 Test for 25 M^3
3	Standard Proctor Test	I.S. 2720 Pt. VII	-do-
4	Deleterious constituents	I.S. 2720 Pt. XXVII	As required
5	Natural M.C.	I.S. 2720 Pt. II	One test for 250M^2 of soil
	Dry density	I.S. 2720 Pt. XXVII	Generally at least one test per 100 M^2 of compacted area for the body of embankment to be increased to one test 500-1000 cum of compacted area for the top sub grade layers of 50cm or 1-2 tests for 3000 cum of soil.

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9.8 **ANALYSIS & ACCEPTANCE OF DENSITY RESULT**

9.8.1 Except otherwise directed, at least one measurement of density shall be made for each 1000 m^2 (10000 sqft) compacted area. Test locations shall be chosen only through predetermined random sampling techniques. Control shall not be based on the result of any one test but on the mean value of 5-10 density determination. The number of tests in one set of measurement shall be 5 as long as it was felt that sufficient control over borrow materials & the method of compaction was being exercised, but if there was any doubt about this control, or considerable variations were observed between individual density result the minimum number of tests in one set of measurement shall forthwith be increased to 10. The acceptance of results shall be subject to condition that the mean dry density equals or exceeds the specified density & the standard deviation for any set of result in below 0.88 gm. Per cc (5 lb per cu. Ft.)

9.8.2 In general, the control at top sub-grade layers of the formation shall be morestrict, with density measurements being done as stated above, at the rate of test per 500-1000 sqft. (50-100) sqm.of compacted area. Further for the determination of mean density & standard deviation, the number of tests in one test of measurements shall not be less than 10. In other respects, the control will be similar to as spelt out in the previous para.

9.8.3 If for any reasons it has not been found possible to conduct the minimum number of test mentioned above, the test value obtained from fewer tests shall be used only as an aid to judgment & as a proof of the quality of the work.

9.8.4 REMOVAL OF SOFT AREAS:

When density measurements reveal any soft areas in the embankment, the Engineer-in-charge shall direct that these areas should be compacted further & nothing extra shall be paid. In spite of that, if the specified compaction is not achieved, the materials in the soft areas shall be directed to be removed & replaced by approved materials, compacted to the satisfaction of the Engineer-in-charge.

9.8.5. COMPACTION IN ORDINARY WAY

The Engineer-in-charge shall indicate the portion of the earthwork which are not required to be compacted to a specified degree of density & moisture content. The embankment in such portion shall be carried out as specified above, each layer being consolidated as far possible with the help of iron rammers, ordinary light rollers or sheep foot roller, if available. The layers shall be laid concave sloping from the edges towards the centre. The earth shall be laid from the sides to the centre& not vice versa. If the earthwork remains suspended for some time & the surface becomes hard, the latter shall be roughened & slightly moisture before resumption of work without any extra charge to Govt.

9.9 FINISHING OPERATIONS:

9.9.1 After the earthwork is completed & consolidated, sectioning shall be done to bring it to its true final shape. The embankment shall be finished in conformity with the alignment levels, cross sections & dimensions shown on the plans. Where the alignment of the road is in a curve, the tops of the embankment shall be formed with the supervention& the increased widths shown on the drawing or as the Engineer-in-Charge may direct without any extra cost to Govt.

9.9.2 Finishing operation shall include the work of shaping & dressing the shoulders road bed & the side slopes to conform to the typical cross section shown on the plane & shall be paid extra. Both the upper an lower ends of the side slopes shall be rounded off to improve appearance & to merge the embankment with a adjacent terrain.

9.9.3 When the earth work operations have been substantially complete the road way area shall be cleaned of all the debris & ugly scars existing near the coming areas etc. Every reasonable effort shall be made to aviate objectionable appearance without any extra payment.

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SECTION – 7

DRAWINGS CAN BE SEEN IN OFFICE OF THE EXECUTIVE ENGINEER, DRAINAGE DIVISION, KATAKA DURING OFFICE HOURS

(FROM 29.10.2026 TO 12.11.2026)

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SECTION-8

FORMS

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CHECK LIST

SL. NO.	DOCUMENTS		SUBMITTED OR NOT
1.	Form A	No relation Certificate	Yes/No
2.	Form B	Structure and Organization	Yes/No
3.	Form C	AFFIDAVIT	Yes/No
4.	Form D	Affidavit For Availing Emd Exemption **(For Engineering Contractor)**	Yes/No
5.	Certified copy of power of attorney in case of partnership firm, limited or Corporation attached.		Yes/No
6.	Other documentary evidence as required in minimum pre-qualification criteria. (Valid GST, valid License,Paper cost, EMD details etc.)		Yes/No

Signature of Contractor

NOTE: -Checklist and required forms with supporting documents if any to be uploaded/submitted. Failing which the tender will be rejected.

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FORM – A

NO RELATION CERTIFICATE

Certified that I / We am / are not related to any officer of Water Resources Department of the rank of Assistant Engineer and above or any officer of the rank of Assistant Secretary / Under Secretary and above.

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(OR)
RELATIONSHIP DECLARATION

List of Relatives of the tender serving in Water Resources Department.

Sl No.	Nameoftherelatives	Rank	Placeofpresentposting with office / Division / Department
1	2	3	4

1.
2.
3.
4.
5.

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DRAINAGE DIVISION, KATAKA

FORM – B

STRUCTURE AND ORGANISATION

1.Nameof Tenderer ……...

2.Nationality of Tenderer ……....

3.Office Address ……...

4.TelegraphicAddress …….

Telephone/FaxNo ……

Mobile No ……

Telex Number/ e-mail ID ……

5. Location of establishment ……

And from date

6. The tenderer is

a. An individual

b. A proprietary firm.

c. A limited company or limited corporation

d. A member of a group of companies (If yes, give names, address and present description of other companies.)

e. A subsidiary of large organization

(If yes, give names, address of the present organization)

f. If the company is subsidiary, state what involvement if any, will the parent company have in the project.

Attach the organization chart showing the structure of the organization including the names of the Directors position of officer.

7. Number of years of experience

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a. As a prime contractor

I. In own country

II. Other country (specify country)

b. In a Joint venture

I. Inown country

II. Other country (specify country)

8. Name & the address of any associates that the tenderer has in India, who are knowledgeable in the procedure of customs, immigration etc. and other information necessary to do work.

9. How many years has your organization been in business under your present name? Add what were your fields were initially and when you established your organization. When did you add new field (if any)?

10. Have you ever required for suspending construction for a period of more than six months continuously after you started? If so, give the names of project and reason for suspension or failure.

11. Have you ever not completed any work awarded to you? If so give name of project and reasons for not completing the work.

12 In how many projects you have been imposed with penalties for delay? Please give name of the projects and detail reasons.

13 In which fields of Civil Engineering construction do you claim specialization and interest.

14 Give details of your experience in modern concreting / Earth work and quality control.

15 Give details of your material testing laboratory.

Signature of Contractor

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FORM – C

AFFIDAVIT

I,Sri……..……Aged……..years, Son/Daughter/ Wifeof Sri……..…at present residingAt……,
P.O……..P.S……..Dist……Pin……. (State &Country) do here by solemnly affirm as follows.

(i) That, I / We possess a valid license for execution of works contract issued by*……... belongs to ……Class & is valid up to **…….

I am submitting tenders before the **Executive Engineer, Drainage Division, Kataka**, Odisha for the work **"Slope protection work in Gobari drainage channel near Jaleswarpur, Jerakhanda, Haribhaktapur, Brahmanmanijori, Lalitgiri in Mahanga block in Cuttack District"** in response to **e-procurement notice no**. **ACEDC-CTC-15/2026-27 vide Bid Identification No. ACEDC-CTC/DD-CTC- 05/2026-27.**

I am the authorized signatory on behalf of the contractor for the tender for the work mentioned above.

(i) I am swearing this affidavit that all tender documents and accompanying papers those being submitted by me before the **Executive Engineer, Drainage Division, Kataka, Dist- Kataka, Odisha** including E.M.D/ Bid Security in any shape are all authentic and bonafied documents in the eyes of the law of the land. That the facts stated in the affidavit are true to the best of my knowledge and belief.

Signature of Contractor /
Authorized Signatory

Note:

*Mention the license issuing authority.

* *Mention the date up to which the license is valid

CONTRACTOR

**EXECUTIVE ENGINEER,
DRAINAGE DIVISION, KATAKA**

FORM – D
AFFIDAVIT (For Engineering Contractor)

I, Sri……Aged……..years, Son/ Daughter/ Wife of Sri……..……..at present residing At……., P.O…….. P.S…….. Dist……Pin……. (State &Country) do here by solemnly affirm as follows.

(i) That, I / We possess a valid license for execution of works contract issued by*…….. belongs to **"A" Class Degree Engineering Contractor is valid up to **…….** .

I am submitting tenders before the **Executive Engineer, Drainage Division, Kataka**, Odisha for the work **"Slope protection work in Gobari drainage channel near Jaleswarpur, Jerakhanda, Haribhaktapur, Brahmanmanijori, Lalitgiri in Mahanga block in Cuttack District "** in response to **e-procurement notice no. ACEDC-CTC-15/2026-27 vide BID IDENTIFICATION NO. ACEDC-CTC/DD-CTC- 05/2026-27** .

I am the authorized signatory on behalf of the contractor for the tender for the work mentioned above.

(ii) That,I being Degree Holder Contractor, I am entitled to avail exmption of EMD as per Govt. works Department Order No.19078/dated 02.09.1969 and 14538/dated 09.06.1987 EMD & ISD is 100% exempted to which I am entitled to avail in this tender as I am not yet availed the facility for more than two works during the current financial Year.

(iii) I am swearing this affidavit that all tender documents and accompanying papers those being submitted by me before the **Executive Engineer, Drainage Division, Kataka, Dist- Kataka**, Odisha including E.M.D/ Bid Security in any shape are all authentic and bonafied documents in the eyes of the law of the land.

(iv) That I am not related to any Officer of water Resources Department of the Rank of Assistant engineer and above or any officer of the rank of Assistant Secretary and above.

(v) That the facts stated in the affidavit are true to the best of my knowledge and belief.

Signature of Contractor /
Authorized Signatory

Note : *Mention the license issuing authority.

* *Mention the date up to which the license is valid

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SECTION-9

BILL OF QUANTITIES

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DRAINAGE DIVISION, KATAKA

GOVERNMENT OF ODISHA
DEPARTMENT OF WATER RESOURCES

E- Procurement Notice No. ACEDC-CTC-15/2026-27

BID IDENTIFICATION NO.

ACEDC–CTC/DD-CTC- 05/2026-27

TENDER DOCUMENT
(PRICE BID)
(COVER-II)

FOR THE WORK

"Slope protection work in Gobari drainage channel near Jaleswarpur, Jerakhanda, Haribhaktapur, Brahmanmanijori, Lalitgiri in Mahanga block in Cuttack District".

ADDITIONAL CHIEF ENGINEER,
DRAINAGE CIRCLE, KATAKA

CONTRACTOR

EXECUTIVE ENGINEER,
DRAINAGE DIVISION, KATAKA

TENDER INVITING AUTHORITY: ADDITIONAL CHIEF ENGINEER, DRAINAGE CIRCLE, KATAKA

NAME OF WORK : "Slope protection work in Gobari drainage channel near Jaleswarpur, Jerakhanda, Haribhaktapur, Brahmanmanijori, Lalitgiri in Mahanga block in Cuttack District".

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BILL OF QUANTITY

It. No.	Description	Unit	Quantity	Rate	Amount
1	2	3	4	5	6
1	Earthwork in excavation of foundation of structure by mechanical means in all kind of soil in wet & dry condition, shoring shuttering, propping bullahs, dewatering the foundation including dressing, leveling, ramming the foundation bed & sides with pneumatic rammers/fuel operated compactors and removing the excavated materials with all leads, lifts and delifts away from worksite & depositing the excess materials in spoil banks or any other specified places by manual/mechanical means etc. complete with all cost, conveyance and T&P as per direction of the Engineer-in-charge.	One Cum	4044.13	37.10	**150037.22**
2	Providing cast in situ 940mm dia Double under reamed R.C.C. pile with 375mm dia circular pile foundation (as specified in the drawing) including excavation of bore holes to a depth of **6.0 m**. from bottom level by wrench or by any other mechanical means from the bottom level of foundation excluding cost of reinforcement, cutting bending, binding the grills as per the drawing supplied by the Deptt. but including cost of cement concrete **M20 using 20 mm downgraded** black H.G.C.B chips of approved quality from approved quarry mixed properly in cement concrete mixer including cost, conveyance, royalty and all other taxes of materials, centering, shuttering, all labour, T&P , hire & running charges of machineries with all leads, lifts, delifts and dewatering etc. complete as per direction of Engineer-in-Charge.	Rmt	3360.00	1852.30	**6223728.00**

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3	Providing and laying Cement concrete M 15 in approved surface using 40 mm down graded hard granite well graded crusher broken stone aggregates free from weathered skin surface and any other deleterious materials, using sharp sand of approved grading and quality conforming to the specification, using water of approved quality and using cement as per approved specifications with all leads, lifts and delifts and transportation by mechanical/manual means including carriage, royalty, cess and taxes of all materials, mixing the ingredient in a mechanical mixer, vibrator of concrete by mechanical means, supplying T&P, watering, curing including cost of carriage of water, mobilization and demobilization of men & machineries etc including quality control testing charges as per approved drawing and specifications and direction of the Engineer-in -charge.	One Cum	1027.70	6095.10	**6263934.27**
4	Providing and placing in position Reinforced Cement concrete M 25 grade with crusher broken hard granite aggregate 20 mm downgraded of approved quality free from weathered skin surface and any other deleterious materials clean coarse sand inclusive of cost,carriage, royalty,cess and taxes of all materials with cost of labour and T&P to mixing yard ,mixing by concrete mixture, carrying hoisting and placing in position for all heights and compaction with vibrators,curing etc.complete in all respect inclusive of all general and incidental charges,dewatering etc complete with maintenance and haul road etc including quality control testing charges complete as per the direction of the Engineer-in-charge. (excluding cost of HYSD bars).	One Cum	1500.80	7394.80	**11098115.84**
5	Providing formwork for concrete with F-1 finish for upstream faces of dam ,spillway, glacis of barrages, unexposed surface of foundation, block joints and all irrigation structures etc. with steel shutters rigidly fixed and removal of forms and making good to the surfaces where necessary complete with all labour, materials, cess, transportation and T&P complete as directed by the Engineer in Charge.	One Sqm	6334.88	949.80	**6016869.02**

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6	Supplying, straightening, cutting, bending, binding the reinforcement steel bars of different diameters conforming to I.S.1786 and I.S 432 of all diameters, tying the grills in position at all heights including cost of rod, binding wire 18 to 20 gauge with cost, conveyance,cess, taxes of all materials including chairs, dowel, benches, lapping, wastage & welding wherever necessary with all leads, lifts & delifts including quality control testing charges of uncoated HYSD bar with cost of labour T&P required for the work etc. complete as per the design, specification & direction of the Engineer-in-Charge.	One Qntl	1357.19	9127.80	**12388158.88**
7	Earth work in approved type of soil brought from borrow area by mechanical means and transportation by any means, spreading the earth over properly prepared surface of coffer dam, diversion road & approach road etc and breaking clods to maximum 5 cm to 7cm sizes including levelling the earth in 22.50 cm, layers for all heights with all leads within **5.00km**, lifts and delifts including cost, carriage, royalty ,cess, taxes of all materials with cost of labour, T&P required for the work including lighting and watering of haul roads and borrow area etc. complete as per the direction of the Engineer-in-charge.(Borrow area should be arranged by contractor and Measurement to be taken on finished compacted section on initial and final level basis).	One Cum	15811.25	271.20	**4288011.00**
8	Providing weep holes in plain/reinforced cement concrete with 100 mm dia A.C pipe extending through the full width of the concrete with a slope of 1V:20H including cost, carriage, cess & taxes of all materials with cost of labour and T&P complete as per the direction of the Engineer-in -charge.	One Rmt.	223.20	112.00	**24998.40**
9	Providing rough stone dry packing in apron and revetments with hard granite stone boulder size not less than 0.025 cum free from weathered skin surface to proper line and level including filling the interstices with required broken stone spalls with all leads, lifts and delifts including cost, carriage, royalty, taxes of all materials and cost of labour and T&P, cess, dressing of earth work in bed and slopes & trimming to the required profile including dewatering if required etc. complete with all general and incidental charges as per drawing, design and specification and per the direction of the Engineer-in -charge.	One Cum.	8037.12	2636.70	**21191474.30**

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10	Filling in foundation and plinth with excavated materials well watered and rammed including cost of labour and T&P, cess required for the work complete as per the direction of the Engineer-in -charge.	One Cum	1348.04	24.70	**33296.59**
11	Filling in foundation and plinth with sand including watering and ramming including cost of all material, labour, royalty and T&P, cess required for the work complete as per the direction of the Engineer-in -charge.	One Cum	770.70	542.30	**417950.61**
12	Earth work in ordinary soil for dismantling coffer dam/diversion road by mechanical means and depositing the dismantling materials away from the site at suitable place with all lead, lifts & delifts for all heights and properly prepared surface including breaking clods to maximum 5cm to 7 cm and laying in layers not exceeding 0.30 m depths with cost of labour charges conveyance & other taxes etc complete as per drawing, design and specification as directed by Engineer-in-charge.	One Cum	7323.75	29.80	**218247.75**
13	Supplying, laying and fixing in position RCC spun pipe 600mm dia confirming to NP3 with collar jointed in CM (1:3) including cost, carriage & all other taxes, all labour, cess T&P etc complete as per the direction of Engineer-in-charge.	Rmt	50.00	3135.90	**156795.00**
14	Supplying and spreading sand of approved specification for filter in rock toe riprap and filter drains in earth dam and dyke to proper slope and level within an intitial lead as including cost, carriage & all other taxes, all labour, cess T&P etc complete as per the direction of Engineer-in-charge.	One Cum	51.00	775.30	**39540.30**
15	Supplying and spreading granite chips of size 20mm down graded in filter in rock toe riprap and drains in earth dam or dyke to proper slope and level within initial lead including cost, carriage & all other taxes, all labour, cess T&P etc complete as per the direction of Engineer-in-charge.	One Cum	25.50	3668.90	**93556.95**
	Total 15 (Fifteen)				**Rs.6,86,04,714.14**
	Say				**Rs.6,86,04,714.00**
(Rupees Six Crore Eighty Six Lakh Four Thousand Seven Hundred and Fourteen) only					

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Note: -

1. The bidder shall fill the information and the percentage rates in figures at the appropriate locations.
2. The Contractor will change percentage excess or less at appropriate location.
3. The total in words and the total amount will be calculated automatically and shall be visible to the bidder.

Approved for 15(Fifteen) items only.

Additional Chief Engineer,
Drainage Circle, Kataka

CONTRACTOR

EXECUTIVE ENGINEER,
DRAINAGE DIVISION, KATAKA