GOVERNMENT OF ODISHA
DEPARTMENT OF WATER RESOURCES

E - Procurement Notice No.ACEDC-BBSR-09/2026-27

BID IDENTIFICATION NO.

ACEDC-BBSR/DD-KHR-28/2026-27

TENDER DOCUMENT
(TECHNICAL BID)
(COVER-I)

FOR THE WORK

IMPROVEMENT OF DAHUKA DRAINAGE CHANNEL UNDER NAYAGARH BLOCK OF NAYAGARH CONSTITUENCY.

ADDITIONAL CHIEF ENGINEER
DRAINAGE CIRCLE, BHUBANESWAR

NAME OF WORK: IMPROVEMENT OF DAHUKA DRAINAGE CHANNEL UNDER NAYAGARH BLOCK OF NAYAGARH CONSTITUENCY.

BID IDENTIFICATION NO. ACEDC-BBSR/DD-KHR-28/2026-27

EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

CONTRACTOR

EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

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SECTION – 1

DETAILED TENDER CALL NOTICE

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ଜଳସମ୍ପଦ ବିଭାଗ,ଓଡ଼ିଶା ସରକାର ଇ-ସଂଗ୍ରହଣ ବିଜ୍ଞପ୍ତି ସଂଖ୍ୟା: ACEDC-BBSR- 09 / 2026-27

*****

୧. କାର୍ଯ୍ୟର ନାମ: ମୋଟ **୦୫ (ପାଂଚ)** ଗୋଟି ଜଳନିକାସ କାର୍ଯ୍ୟ ।

୨. ଅଟକଳ ମୂଲ୍ୟ: ୧୧୩.୨୦ **ଲକ୍ଷ** ଟଙ୍କା **ରୁ** ୪୫୪.୮୯ **ଲକ୍ଷ** ଟଙ୍କା ପର୍ଯ୍ୟନ୍ତ।

୩. କାର୍ଯ୍ୟ ସମ୍ପୂର୍ଣ୍ଣ କରିବା ଅବଧି: **୧୧ (ଏଗାର)**ମାସ ।

୪. ପୋର୍ଟାଲରେ ନିଲାମ ଦସ୍ତାବେଜ ମିଳିବାର ଦିନ ଓ ସମୟ:**ତା. ୨୮.୧୦.୨୦୨୬ ର ୧୧.୦୦ ଘଣ୍ଟା ରୁ ତା. ୧୧.୧୧.୨୦୨୬ ର ୧୮.୦୦** ଘଣ୍ଟା ପର୍ଯ୍ୟନ୍ତ ।

୫. ପୋର୍ଟାଲରେ ନିଲାମ ଗ୍ରହଣ କରିବାର ଅନ୍ତିମ ଦିନ ଓ ସମୟ: **ତା. ୧୧.୧୧.୨୦୨୬ ର ୧୮.୦୦ ଘଣ୍ଟା।**

୬. ପୋର୍ଟାଲରେ ନିଲାମ (technical Bid)ଖୋଲା ଯିବାର ଦିନ ଓ ସମୟ: **ତା. ୧୨.୧୧.୨୦୨୬ ର ୧୧.୦୦ଘଣ୍ଟା।**

୭. ନିଲାମ ଡ଼ାକିଥିବା ଅଧିକାରୀଙ୍କ ନାମ ଓ ଠିକଣା: ଅତିରିକ୍ତ ମୁଖ୍ୟଯନ୍ତ୍ରୀ, ଜଳନିକାସ ମଣ୍ଡଳ, ଭୁବନେଶ୍ୱର, ଠିକଣା: ୟୁନିଟ୍-୮, ଭୁବନେଶ୍ୱର -୭୫୧୦୧୨; **ଇ-ମେଲ:** sedrainagebbsr12@gmail.com

୮. ଇ-ପ୍ରୋକ୍ୟୁରମେଣ୍ଟ ସିଷ୍ଟମ ଦ୍ୱାରା ସ୍ୱୟଂ-ଜାତ ଟେକ୍ସଟ୍ ମେସେଜ୍ ମାଧ୍ୟମରେ ଅଂଶଗ୍ରହଣକାରୀ ବିଡରମାନଙ୍କୁ ସେମାନଙ୍କର ପଞ୍ଜିକୃତ ଇ-ମେଲ୍ ଏବଂ ମୋବାଇଲ୍ ନମ୍ବରରେ ଅପଡେଟ୍ ସୂଚନା ଦିଆଯିବ। ଏହି ସୂଚନା ପରେ, ବ୍ୟକ୍ତିଗତ ବିଡରମାନେ ଅପଲୋଡ୍ ହୋଇଥିବା ସାରାଂଶ, ଯଥା ଆର୍ଥିକ ବିଡ୍ ଖୋଲିବାର ବିବରଣୀ, ଲଟେରୀ ତାରିଖ ସମୟ, ସ୍ଥାନ, ବିଡ୍ ଗ୍ରହଣ ଇତ୍ୟାଦି ଜାଣିବା ପାଇଁ DSC ମାଧ୍ୟମରେ ସେମାନଙ୍କର ଆଇଡିରେ ଲଗ୍ ଇନ୍ କରି ଜାଣିପାରିବେ ।

ଅଧିକ ବିବରଣୀ ପାଇଁ **ଇ-ସଂଗ୍ରହଣ ପୋର୍ଟାଲ** "https://tendersodisha.gov.in" ଦେଖାଯାଇପାରିବ। ଆବଶ୍ୟକ ସ୍ଥଳେ ଉକ୍ତ ଟେଣ୍ଡର ସମ୍ପର୍କିତ ସମସ୍ତ ବିଜ୍ଞପ୍ତି, ସୂଚନା, ଶୁଦ୍ଧିପତ୍ର, ନାକଚ ବିଜ୍ଞପ୍ତି ଆଦି ଏହି ୱେବସାଇଟ୍ ରେ ପ୍ରକାଶ କରାଯିବ।

ସ୍ୱା/-
ଅତିରିକ୍ତ ମୁଖ୍ୟଯନ୍ତ୍ରୀ
ଜଳନିକାସ ମଣ୍ଡଳ, ଭୁବନେଶ୍ୱର

Department **of Water Resources, Government of Odisha**
"e" Procurement Notice No. ACEDC-BBSR- **09/ 2026-27**

*****

1. Name of the Works: Total **05 (Five) Nos.** Drainage work.
2. Estimated cost: **Rs. 113.20 lakh to Rs. 454.89 lakh**
3. Period of Completion: **11 (Eleven)** months
4. Date and time of availability of bid document in the portal: From **11.00 hours of Dt. 28.10.2026 to 18.00 hours of Dt. 11.11.2026.**
5. Last date/time for receipt of bids in the portal: **18.00 hours of Dt. 11.11.2026.**
6. Date of Opening of Technical Bid : **12.11.2026 at 11.00** hours
7. Name and address of the Officer inviting Bid: Additional Chief Engineer, Drainage Circle, Unit-8, Bhubaneswar- 751012. e-mail Id:- **sedrainagebbsr12@gmail.com**.
8. The update notification will be intimated to the participated bidders to their registered e-mail & to their registered mobile number through an autogenerated text message by e-procurement system. On such intimation, individual bidder needs to log in to their ID through DSC to know the uploaded summary, i.e. details of opening of financial bid, lottery date time, venue, acceptance of bid etc.

   Further details can be seen from the e-Procurement portal of Odisha Government https://tendersodisha.gov.in. All information, notices, addendum, corrigendum, cancellation notice etc. if required, will be published in this portal.

Sd/-
Additional Chief Engineer
Drainage Circle, Bhubanesw

GOVT. OF ODISHA

CONTRACTOR

EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

DEPARTMENT OF WATER RESOURCES
OFFICE OF THE ADDITIONAL CHIEF ENGINEER
DRAINAGE CIRCLE, UNIT-8
BHUBANESWAR-751012
***

E-PROCUREMENT NOTICE NO. ACEDC-BBSR-09/2026-27
email Id :- sedrainagebbsr12@gmail.com

1	Total number of Packages	:	**05nos. of individual package.**
2	Cost of Tender paper for each package	:	**Rs.10,000/-**
3	Availability of Tender On - Line.	:	**From 28.10.2026 at 11.00 Hours 11.11.2026 up to 18.00 Hours.**
4	Date of opening of Technical Bid.	:	**12.11.2026 at 11.00 Hours**
5	Procurement Officer	:	**Additional Chief Engineer, Drainage Circle, Bhubaneswar.**

***

Other Important Tender Related Data

Sl. No.	Name of Works	Bid Identification	Amount put to Tender in INR	Period of Completion in months	Eligible Class of Contractor	EMD Amount in INR
1	Improvement to Khatia nalla, Pathara Bandha Nalla and Gahira Nalla of Kankarajhara system of Ranapur Block under Ranapur A.C.	ACEDC-BBSR/DD-KHR-27/2026-27	₹1,13,26,827.00	11	'B & A' Class	₹ 1,13,300 /-
2	Improvement of Dahuka Drainage Channel under Nayagarh Block of Nayagarh Constituency.	ACEDC-BBSR/DD-KHR-28/2026-27	₹ 4,54,86,670.00	11	'A' Class only	₹ 4,54,900/-
3.	Improvement to DC No.-6 and its Link drains.	ACEDC-BBSR/DD-KHR-29/2026-27	₹ 1,49,41,598.00	11	'B & A' Class	₹ 1,49,500 /-
4.	Renovation of Link drainage channels of Bhargavi River with structures under Brahmagiri Block.	ACEDC-BBSR/DD-PURI-30/2026-27	₹ 1,99,62,362.00	11	'B & A' Class	₹ 1,99,700 /-
5.	Renovation of Luna-Ratnachira Drainage System with structures under Satyabadi and Kanas Block.	ACEDC-BBSR/DD-PURI-31/2026-27	₹ 2,27,70,064.00	11	'B & A' Class	₹ 2,27,800 /-

Sd/-
Additional Chief Engineer
Drainage Circle, Bhubaneswar

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EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

GOVERNMENT OF ODISHA
DEPARTMENT OF WATER RESOURCES
OFFICE OF THE ADDITIONAL CHIEF ENGINEER
DRAINAGE CIRCLE, BHUBANESWAR
INVITATION FOR BIDS (IFB)
BID IDENTIFICATION NO. ACEDC-BBSR/DD-KHR-28/2026-27

The Additional Chief Engineer, Drainage Circle, Bhubaneswar on behalf of Governor of Odisha invites on-line **percentage rate tender in double cover** through e-procurement for execution of the work mentioned in the cover page. The bids should be submitted by **"A"** class of contractors registered / empanelled with State Government of Odisha& contractors of equivalent grade / class registered with other 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 available in the Government website www.tendersodisha.gov.in. The bidders should have necessary portal enrolment (with own digital signature certificate). The registered bidders outside of Odisha state can also participate in this on-line tender process after necessary portal enrolment but shall have to subsequently undergo registration with appropriate authority of the State Govt. of Odisha within a month of acceptance of bid. The bidders registered outside the state are required to submit an undertaking in the form of an affidavit, that they are not registered under the GST act as applicable from time to time in the state of Odisha as they have not started any business in Odisha and they have no liabilities under the Act. But bidder has to produce GSTIN registration certificate before signing of the agreement. For bidders registered within the state no bid would be considered without a valid GSTIN registration certificate.

Sl. No.	Name of Work	Amount Put to Tender (Rs.) (Excluding G.S.T.)	Class of contractor	Bid Security / EMD (Rs.)	Cost of tender document (Rs.) (Excluding G.S.T.)	Period of Completion
1	2	3	4	5	6	7
1	Improvement of Dahuka Drainage Channel under Nayagarh Block of Nayagarh Constituency.	Rs.4,54,86,670.00	"A" Class (Odisha PWD or equivalent class of other licensing authority)	Rs.4,54,900 .00	10,000.00 (To be remitted online)	11 (Eleven) calendar months

1. The cost of bid paper (non-refundable) is to be remitted online in web site at the time of submission of Technical Bid (Cover-I) with the bid paper.

2. Mode of Bid / Period of availability of bid on-line / date and time of bidding on-line / Last date of seeking clarification / date of opening of bid papers are given below.

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Procurement Officer	Bid Identification No.	Availability of On – Line Bidding		Last date for seeking clarification	Date and time of opening of Technical Bid	Date and time of opening of Financial Bid	Date of Lottery (If Required)
		from	to				
1	2	3	4	5	7	8	9
Addl. Chief Engineer, Drainage Circle, BBSR	ACEDC-BBSR / DD-KHR–28/2026-27	28.10.2026 from 11.00 Hours	11.11.2026 upto 18.00 Hours	03.11.2026 at 18:00 Hours	12.11.2026 Up to 11:00 Hours	Will be intimated while uploading the Technical Evaluation Summary	The update notification will be intimated to the participated bidders to their registered e-mail & to their registered mobile number through an autogenerated text message by e-procurement system. On such intimation, individual bidder needs to log in to their ID through DSC to know the uploaded summary, i.e. details of opening of financial bid, lottery date time, venue, acceptance of bid etc.

03. Any addendum / corrigendum /cancellation of above tender will be published in the web-site www.tendersorissa.gov.in, and in the notice board.

04.The system shall generate a mail to those bidders who have already uploaded their tenders and those bidders if they wish, can modify their tenders.

05.The Technical Bid Document (Cover–I) consisting of qualification, information and eligibility criteria of bidders, plans, specification are available in web-site www.tendersorissa.gov.in and should be submitted in www.tendersorissa.gov.in furnishing with scan copies of valid registration certificate, Valid GSTIN certificate, PAN card, Bid security, no relation certificate or relationship declaration (whichever is applicable in his / her case) etc. and Affidavit **(Duly signed by the Oath taking Commissioner / Notary)** about the authenticity of documents submitted "on-line" are mandatory along with bid document otherwise his / her bid shall be declared as non-responsive and thus liable for rejection.

06. The Financial Bid (Cover – II) consisting of the Bill of quantities (B.O.Q.) of works are available in web-site www.tendersorissa.gov.in and the set of terms and conditions of contract and other necessary documents can be seen in the web-site till dt.**11.11.2026** up to 18.00 hours i.e.; last date of availability of bid "on-line" for bidding. Interested bidders may obtain further information, if any required, at the web-site www.tendersorissa.gov.in.

07. The date and time of opening of the Financial Bids will be uploaded in portal / web site www.tendersorissa.gov.in after evaluation of technical bids.

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08.The bid for the work shall remain valid for acceptance for a period of 90 days from the date of opening of tenders. If any bidder/ tenderer withdraws his bid/ tender before the said period or makes any modification in the terms and condition of the bid, the EMD deposit at the time of submission of tender shall stand forfeited.

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

10.Other details including details of Portal Registration, Submission of bid, Resubmission and withdrawal of bid can be seen in the bidding document which is available in web-site www.tendersorissa.gov.in.

11.The original documents along with a set of its Xerox copies against the scanned copy of R.C. (Registration certificate), GSTIN, PAN, Affidavit **(Duly signed by the Oath taking Commissioner / Notary)**, Bid Security (EMD) and other requisite documents submitted through web-site should be produced in the O/o **Additional Chief Engineer, Drainage Circle, Bhubaneswar** for verification **on demand** after opening of the Technical Bid.

12.Bid Security / EMD @ 1% of the amount put to tender i.e., **Rs.4,54,900 /-** must be accompanied with tender. The bidder shall pay/ transfer the required EMD/ Bid Security by online as mentioned in the tender details through payment gateway of designated banks and in no other form. A bidder shall make electronic payment using his/her Internet banking enabled account with designated banks or their aggregator banks. A bidder having account in other banks can make payment using NEFT/ RTGS facility of designated banks. The bidder should ensure that EMD/ Bid Security is paid through payment gateway online mode only.

13.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, falling which the tender will be liable for rejection.

14. 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 vide Office Memorandum No. 07764600022025 17941/W., Dt. 08.10.2026 of Works Department 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:

A. The Additional Performance Security (APS) shall be calculated as a percentage of the accepted Bid Price of the selected bidder.
B. 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.
C. 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.

D. 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:

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(i) Where the decimal fraction is less than 0.50, the percentage shall be rounded off to the next lower whole percentage.

(ii) 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.

E. Calculation of Additional Performance Security:

(i) Where the accepted bid price is such that the ROPL is up to (-) 10%, no additional performance security is required.

(ii) 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 0.2% 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.

(iii) Where the accepted bid price is such that the ROPL is below (-)20% but not below (-)30%, 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.

(iv) 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% x (37-30) + 5% = 3.5% + 5% = 8.5% of accepted bid price.

F. The additional performance security shall be treated as part of the performance security.

G. The provision of additional performance security shall be applicable to all forms of tender except Turnkey Tender.

H. 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 to perform 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.

I. If more than one bid is quoted (decimal up to two numbers will be taken for all practical

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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.

J. 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.

K. 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.

15. If the rate quoted by more than one bidder is found to be equal and lowest, then the tender will be finalized by a transparent lottery system in the Office Chamber of the **Additional Chief Engineer, Drainage Circle, Unit-8, Bhubaneswar** where all bidders / their authorized representatives, the concerned SE/ EE of concerned Division and DAO will remain present**.** If the scheduled date either for opening of tender or lottery for finalization of tender is declared as a Govt. holiday then the same will be conducted in the next working day.

16. 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-3.5.14 Note-1 of OPWD Code Vol.-1.

17.The single tender received in the first call shall be cancelled without opening the bid. The acceptance of the single tender received even after retendering should have prior approval of next higher authority vide O.P.W.D. Code Vol.-I, Para-3.5.18 (Office Memorandum No 16/W dated 01.01.2015 of Works Department, Odisha.

18. 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 vide O.P.W.D. Code Vol.-I, Para-3.5.18 (viii) 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).

GENERAL INSTRUCTIONS TO CONTRACTORS (vide DOWR Letter No.20415 dt.14.09.2015)

(i) Any Agency or contractor executing a work should be aware about the local festivals like Makar Sankranti, Raja Sankranti, Chaiti Parba, Danda Nata or any such festivals which may affect the work schedule. Therefore, the contractors should engage more work forces during working period available at his disposal to complete the work as per schedule.

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

(iii)Rainfall is a normal occurrence during monsoon in Odisha. So, unless there is unusually heavy rainfall resulting in a declared calamity, the Contractor is not eligible for any extension of

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time. The Contractor should plan the deployment of workforce and machinery, so as to complete the work as per schedule considering ordinary vagaries of the nature. The same applies for borrow areas ponding also. The Contractor should foresee possible ponding 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.

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

(v)The Agency should plan his work programme and mobilize men and machineries considering the canal closure programme of a particular system of area. Khariff/ 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 discretion of the Engineer-in Charge and can't be claimed as a matter of right.

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

(vii)Only the day(s) of elections to the Local Bodies/ Assembly/ Parliament will be treated as a non-working days).

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

Address of Communication:
Additional Chief Engineer,
Drainage Circle, Bhubaneswar,
751012, Odisha,
Email-Id-sedrainagebbsr12@gmail.com

Sd/-
Additional Chief Engineer,
Drainage Circle, Bhubaneswar

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GOVERNMENT OF ODISHA
DEPARTMENT OF WATER RESOURCES
O/O THE ADDITIONAL CHIEF ENGINEER
DRAINAGE CIRCLE, BHUBANESWAR

DETAILED TENDER CALL NOTICE
BID IDENTIFICATION NO. ACEDC-BBSR/DD-KHR-28/2026-27

The Additional Chief Engineer, Drainage Circle, Bhubaneswar on behalf of Governor of Odisha invites on-line **percentage rate tender** through e-procurement for execution of work. The bids should be submitted by **"A" Class** contractors registered / empanelled with state Government of Odisha & contractors of equivalent grade / class registered with other State Governments / central Government / Government undertakings / MES / Railways / other statutory authorities for execution of works to be eventually drawn in PWD P-1 form of contract **through on-line in the Government website www.tendersorissa.gov.in.** The bidders should have necessary portal enrollment (with own compatible digital signature certificate of clause-II or III). The registered bidders outside of Odisha State can also participate in this on-line tender process after necessary portal enrollment but shall have to subsequently undergo registration with appropriate authority of the State Govt. within a month of acceptance of bid. The website for on-line bidding is **www.tendersorissa.gov.in** for the work **"Improvement of Dahuka Drainage Channel under Nayagarh Block of Nayagarh Constituency".**

1. The bids can be viewed from the website identified as www.tendersorissa.gov.in **from 11.00 hours of 28.10.2026 up to 11.11.2026 up to 18.00 hours**. Availability for on line bidding of tender from the website identified as www.tendersorissa.gov.in is **from 11.00 hours of 28.10.2026 up to 11.11.2026 up to 18.00 hours**. The bidder for participation in on line bidding will have to transfer/remit online the cost of bid paper (non-refundable) of **Rs.10,000/- (Rupees ten thousand) only** for this work**.** The Bid will be received through e-procurement portal **from 11.00 hours of 28.10.2026 up to 11.11.2026 up to 18.00 hours.** Each set of bid document contains technical bid (Cover-I) and an intelligent bill of quantity (Cover-II).

2. The cover-I bid will be **opened on 12.11.2026 at 11.00 hours in the office of Additional Chief Engineer, Drainage Circle, Bhubaneswar** in presence of the tenderer or their authorized representative. The bidders who participated in the on line bidding can witness opening of the bid from any system logging on to the portal away from opening place. The bids can only be opened by the pre-designated officials 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. Date, time and place of opening of Cover-II (Price bid) shall be intimated separately to those bidders who will be found eligible after evaluation of Cover-I (Technical bid). The intimation will be sent through e-procurement portal, by their email address.

3. The value of the work tendered for is **Rs. 4,54,86,670.00**

4. **PARTICIPATION IN BID:**

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

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

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

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

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

(e) PREPARATION OF BID:

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

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

5 The e-procurement portal of the Government of Odisha is "https://tendersorissa.gov.in".

6. Use of valid Digital Signature Certificate of appropriate class (Class II or Class III) issued from a registered Certifying Authority (CA) as stipulated by Controller of Certifying Authorities (CCA). Government of India such as n-Code, Sify, TCS, MTNL, e-Murdhra etc. is mandatory for all users.

7. For all purposes, the server time displayed in the e-procurement portal shall be the time to be followed by all the users.

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8. The e-procurement shall be operated compliant to relevant provisions of OGFR/OPWD Code/Accounts Code/Government Statutes including any amendments brought from time to time to suit to the requirement of the best national practice.

9. Registration in the e-procurement portal is without levy of any charges but Government reserves the right to levy any charges for such value added services in future.

10. Contractors not registered with Government of Odisha, can participate in the e-procurement after necessary enrollment in the portal but have to subsequently register themselves with the appropriate registering authority of the State Government before award of the work as per prevalent registration norms of the State.

11. **PAYMENT OF COST OF BID DOCUMENTS AND EMD:**

(i) The bidder shall furnish, as part of his bid, a Bid security online for the amount mentioned under IFB/Contract Data.

(ii) The EMD or Bid Security payable online along with the bid is 1% of the amount put to tender or as mentioned in the bid document. The validity period of the EMD or Bid Security shall be as mentioned in the bid document. Any bid not accompanied by an acceptable Bid Security and not secured as indicated in the bid document shall be rejected as non-responsive. The bid security shall be retained till such time the successful bidder furnishes Initial Security Deposit (ISD) or Performance Security acceptable to the Officer inviting the Bid. Failure of the successful Bidder to comply with the requirements shall constitute sufficient grounds for cancellation of the award and forfeiture of the Bid Security. The Bid security shall be valid for period of 90 days beyond the validity of the bid.

(iii) Contractor exempted from payment of EMD will be able to participate in the tender directly by uploading documentary evidences towards his eligibility for such exemption.

(iv) Government of Odisha has actively introduced integration e-payment gateway into the portal for payment of Cost of Bid and Bid Security / Earnest Money Deposit. The process of using e-payment gateway has been clearly described vide sl. no.92 of this section which may be referred.

12. SUBMISSION OF BID.

a. The bidder shall carefully go through the tender and prepare the required documents. The Bid shall have a Technical Bid & a Financial Bid. The Technical Bid generally consist of cost of Bid documents, EMD / Bid Security, GSTIN, PAN / TIN, Registration Certificate, Affidavits, and any other information required by OIT. The Financial Bid shall consist of the Bill of Quantities (BOQ) and any other price related information/ undertaking including rebates.

b. The Protected Bill of Quantities (BOQ) uploaded by the Procurement Officer-Publisher for the Bid is the authentic BOQ. Any alternation or deletion or manipulation in BOQ shall lead to cancellation of Bid.

c. The Bidder shall up load the scanned copy/copies of document in Portable Document Format (PDF) to the portal in the designated locations of Technical Bid.

d. The bidder shall write his name in the space provided in the specified location in the Protected Bill of Quantities (BOQ) published by the Officer Inviting Tender. The bidder shall type percentage rates in figure only at the appropriate location. The total in words and the total amount of percentage rate tender shall be calculated automatically and shall be visible to the bidder.

e. The bidder shall log on to the portal with his / her DSC and move to the desired tender for uploading the documents in appropriate place one by one simultaneously checking the documents.

   i. Bids cannot be submitted after due date and time. The bids once submitted cannot be viewed, retrieved or corrected after the date line. The Bidder should ensure correctness of the bid prior to uploading and take print out of the system generated summary of submission to confirm successful uploading of bid. The bids cannot be opened even by the OIT or the Procurement Officer-Publisher/ Opener before the due date and time of opening.

   ii. Each process in the e-procurement is time stamped and the system can detect the time of log in of each user including the Bidder.

   iii. The Bidder should ensure clarity/ legibility of the document uploaded by him to the portal.

   iv. The system shall require all the mandatory forms and fields filled up by the contractor during the process of submission of the bid/tender.

   v. The bidder should check the system generated confirmation statement on the status of the submission.

   vi. The Bidder should upload sufficiently ahead of the bid closure time to avoid traffic rush and failure in the network.

   vii. The Tender inviting Officer is not responsible for any failure, malfunction, or breakdown of the electronic system used during the e-procurement process.

   viii. The Bidder is required to up load documents related to qualification information and Bill of Quantities duly filled in. It is not necessary for the part of the Bidder to up-load the drawing and other Bid documents (after signing) while up-loading his bid. It is assumed that the bidder has referred all the drawings and documents uploaded by the Officer inviting the Bid.

   ix. Seeking any revision of rates or backing out of the bid claiming for not having referred to any or all documents provided in the Bid by the Officer inviting the Bid will be construed as plea to disrupt the bidding process and in such cases the bid security shall be forfeited.

   x. The bidder will not be able to submit his bid after expiry of the date and time of submission of Bid (server time). The date & time of bid submission shall remain unaltered even if the specified date for the submission of bids declared as a holiday for the Officer inviting the Bid.

f. **SIGNING OF BID:** The online bidder shall digitally sign on all statements, documents, certificates, uploaded by him, owning responsibility for their

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correctness / authenticity as per IT ACT 2000. If any of the information furnished by the bidder is found to be false / fabricated / bogus, his EMD / Bid security shall stand forfeited and the bidder is liable to be blacklisted.

13. SECURITY OF BID SUBMISSION:

a. All bid uploaded by the Bidder to the portal will be encrypted.

b. The encrypted Bid can only be decrypted / opened by the authorized openers on or after the due date and time.

14. RESUBMISSION AND WITHDRAWAL OF BIDS:

a. Resubmission of bid by the bidder for any number of times before the final date and time of submission is allowed.

b. Resubmission of bid shall require uploading of all documents including price bid afresh.

c. If the bidder fails to submit his modified bids within the pre-defined time of receipt, the system shall consider only the last bid submitted.

d. The bidder should avoid submission of bid at the last moment to avoid system failure or malfunction of internet or traffic jam or power failure etc.

e. The Bidder can withdraw his bid before the closure date and time of receipt of the bid by uploading scanned copy of a letter addressing to the Procurement Officer-Publisher (Officer Inviting tender) citing reasons for withdrawal. The system shall not allow any withdrawal after expiry of the closure time of the bid.

15. OPENING OF THE BID:

a. Bid opening date and time is specified during tender creation or can be extended through corrigendum. Bids cannot be opened before the specified date & time.

b. All bid openers have to log on to the portal to decrypt the bid submitted by the bidders.

c. The bidders & guest users can view the summary of opening of bids from any system. Contractors are not required to be present during the bid opening at the opening location if they so desire.

d. In the event of the specified date of bid opening being declared a holiday for the Officer inviting the Bid, the bids will be opened at the appointed time on the next working day.

e. In case bids is invited for more than one package, the order for opening of the “Bid” shall be that in which they appear in the “Invitation for Bid”.

f. During bid opening, the covers containing original financial instruments towards Cost of bid and Bid Security in the form specified in the DTCN / ITB valid for the period stated in the Bid, received after last date of receipt of bid and before opening of the bids shall be opened and declared. The Procurement Officer-Opener shall continue opening of other documents if he is satisfied about the appropriateness of the cost of Bid and the Bid security.

g. Combined bid security for more than one work is not acceptable.

h. The electronically submitted bids may be permitted to be opened by the predefined Bid opening officer from their new location if they are transferred after the issue of Notice inviting Bid and before bid opening. Further action on bid documents shall be taken by the new incumbent of the post.

16. EVALUATION OF BIDS:

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a. All the opened bids shall be down loaded and printed for taking up evaluation. The Procurement Officer-Openers shall sign on each page of the documents downloaded and furnish a certificate that the documents as available in the portal for the tender have been down loaded.

b. The Procurement Officer-Evaluators shall take up evaluation of bids with respect to the qualification information and other information furnished subject to confirmation of the bid security by the issuing institutions.

c. After receipt of confirmation of the bid security, the bidder may be asked in writing to clarify on the documents provided in the Technical Bid, if necessary, with respect to any doubts or illegible documents. The Officer inviting tender may ask for any other document of historical nature during technical evaluation of the tender. Provided in all such cases, furnishing of any document in no way alters the Bidder's price bid, non-submission of legible documents may render the bid non-responsive.

d. The bidders will respond in not more than 7 days of issue of the clarification letter, failing which the bid of the bidder will be evaluated on its own merit.

e. Technical evaluation of all bids shall be carried out as per information furnished by Bidders. But evaluation of Bids does not exonerate bidders from checking their original documents at later date. If the bidder is found to have misled the evaluation through wrong information action as per relevant clause of DTCN/ITB shall be taken against the bidder/contractor.

f. The procurement Officer-Evaluators; will evaluate bids and finalize list of responsive bidders.

g. The financial bids of the technically responsive bidders shall be opened on the due date of opening. The Procurement Officer-Openers shall log on to the system in sequence and open the financial bids.

   i. The Financial Bid will be opened on the notified date & time in the presence of bidders or their authorized representative who wish to be present.

   ii. At the time of opening of "Financial Bid", bidders whose technical bids were found responsive will be opened.

   iii. The responsive bidder's name, bid prices, percentage above or less tenders will be announced.

   iv. Procurement Officer-Openers shall sign on each page of the downloaded BOQ and the Comparative Statement and furnish a certificate to that respect.

   v. Bidder can witness principal activities and view the documents / summary reports for that particular work by logging on to the portal with his DSC from anywhere.

17. NEGOTIATION OF BIDS:

a. For examination, evaluation and comparison of bids, the officer inviting the bid may, at his discretion, ask the lowest bidder for clarification of his rates including reduction of rate on negotiation and breakdown of unit rates.

18. NOTIFICATION OF AWARD AND SIGNING OF AGREEMENT:

a. The Employer / Engineer-in-Charge shall notify acceptance of the work prior to expiry of the validity period by cable, telex or facsimile or e-mail confirmed by registered letter. The Letter of Acceptance will state the sum that the Engineer-in-Charge will pay the contractor in consideration of the execution

and completion of the works by the contractor as prescribed by the contract & the amount of Performance Security. The issue of the letter of acceptance shall be treated as closure of the Bid process and commencement of the contract.

b. The Contractor after furnishing the required acceptable performance security "Letter of Proceed" or "Work Order" shall be issued by the Engineer-in-Charge with copy thereof to the Procurement Officer-Publisher. The Procurement Officer-Publisher shall up load the summary and declare the process as complete.

19. 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.

20. No tenderer will be permitted to furnish their tender in their own manuscript.

21. Bid security @1% of the amount put to tender i.e**.** **Rs. 4,54,900 /-** only must be submitted on-Line.

22. Contractor exempted from payment of EMD will be able to participate in the tender directly by uploading documentary evidences towards his eligibility for such exemption.

23. The work is to be completed in all respect within **11 (Eleven) calendar months** from the date of issue of work order.

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

25. 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, Khordha**.

    Complaint at a future date that plans and specifications have not been seen by the tenderers cannot be entertained.

26. 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.

27. 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 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, entry tax and other duties, leads, lifts, loading and unloading and freight for materials and all other charges **excluding GST** necessary for the completion of the work to the entire satisfaction of the Engineer-in-charge of the work and his authorized subordinates.

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28. If any further necessary information is required the bidder can **seek clarification** up to **03.11.2026, 18.00 hours** on the bid from the start of sale of bid document. The employer response for the queries raised by the bidder will be posted in the portal.

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

30. An intelligent 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 percentage rates in figures at the appropriate locations. The bidder is not supposed to change or modify the format of the excel sheet in any form. Bills for percentage rate tenders shall be prepared at the tender rates for individual items only and the percentage excess or less shall be added or subtracted from the gross amount of the bill.

31. 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 affected 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.

32. Bidders desirous to hire machineries or equipment's from outside the State are required to furnish 2% (Two percent) of the amount put to tender as bid security. Tender not accompanied with bid security and security for hired machineries as specified above shall be liable for rejection.

33. All taxes, fees, royalties' payable under the local rule, Income taxes, Cess & Surcharges as applicable, Octroi tax etc. **excluding GST** will be borne by the contractor as admissible. It is implied that the quoted percentage rates are inclusive of such elements.

34. 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.

35. 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 portal in respective bid. The system shall not allow any withdrawal after expire of the closure of the bid.

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36. 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.

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

38. The contractor shall have to furnish certificate along with the tender to the effect that he is not related to any officer in the rank 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 & shall be liable to make good to the loss & damage resulting from such cancellation. Failure to submit No Relation Certificate in prescribed format (Form-A) as enclosed in bid document is liable for rejection of tender.

39. 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.

(g) Rates in different items of a tender being irrational.

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

41. The tender may not (at the discretion of the competent authority) be considered unless accompanied by copies of Registration Certificate of Contractor / Registration of Firms/S.S.I. unit/ EPM rate contract holder certificate, PAN Card, GSTIN certificate as the case may be and the original certificates are to be produced if required in any subsequent date during processing of tender. Work done certificate is to be uploaded along with the tender obtaining from the Executive Engineer concerned.

42. **E**arnest 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. The earnest money of the unsuccessful tenderer except the three lowest tenderer shall be refunded on application. The EMD given by the other two parties shall also be refunded within 15 days of acceptance of tender and drawl of agreement.

43. 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

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(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 forfeited.

44. 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 in the form of NSC/Post Office Savings Bank account/ Post Office Time Deposit account/ Kisan Vikas Patra/Bank Guarantee in favour of Divisional Officer i.e. Executive Engineer, Drainage Division, Khordha from any Nationalized /Scheduled Bank in India counter guaranteed by its local branch at Bhubaneswar and in no other form including the amount already deposited as earnest money shall be 2% of the value of the accepted tendered amount and sign agreement in the P.W.D. form No.F2 (Now renewed as P1) (Schedule XLV No.61) for the fulfillment of the contract in the office of Executive Engineer, Drainage Division, Khordha Dist –Khordha, Odisha. The security deposit together with the earnest money, Initial Security money and the amount withheld according to the provision of P1 agreement shall be retained as Security for the due fulfillment of this contract. 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.

Additional Performance Security (As per Memorandum No. 173/W Dated 03.01.2026) shall be furnished by the bidder when the bid amount is less than the estimated cost put to tender. Only the successful bidder who has quoted less bid price/rates than the estimated cost put to tender shall have to furnish Additional Performance Security (As per Memorandum No. 173/W Dated 03.01.2026) in shape of Term Deposit Receipt pledged in favour of Divisional Officer/ Bank Guarantee in favour of the Divisional officer i.e. Executive Engineer, Drainage Division, Khordha from any Nationalized/Scheduled Bank in India counter guaranteed by its local branch at Bhubaneswar within seven days of issue of letter of acceptance(LOA) by the concerned Officer (by e-mail) to the successful bidder otherwise the bid of the successful bidder shall be cancelled & the Earnest Money Deposit/Bid Security shall be forfeited. Further, proceeding for blacklisting shall be initiated against the bidder.

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/WE dt. 11.10.2006). 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 agreement.

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45. 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.

46. 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.

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

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

49. On no account, the contract work should be sublet to anybody. In such an event the contract may be rescinded.

50. 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.

The quantity mentioned can be increased or reduced by the extent of 10% for individual items subject to a maximum of 5% over the estimated cost. If it exceeds the limit stated above prior approval of competent authority is mandatory before making any payment.

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

52. 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.

53. 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 before signing of Agreement.

54. 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.

55. 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.

56. In case of any complaint by the labourer about the nonpayment of his wages as per latest minimum wages Act., the Executive Engineer will have the right to investigate and if the contractor is found to be at fault, Executive Engineer may recover such amount due in any form from the contractor and pay such amount to the labourer

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directly under intimation to the local labour office of the Govt. The decision of the Executive Engineer is final and binding on the contractor.

57. The contractor will have to submit the **Executive Engineer, Drainage Division, Khordha** monthly return of labour both skilled and unskilled employed by him on the work.

58. 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.

59. 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. The contractor shall make his own arrangement to shift men and machineries at his own cost before, during and after natural calamities.

60. 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.

61. 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.

62. 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, octroi duty, entry tax & all other taxes, 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.

    (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.

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(g) Compensation including cost of any suit for injury to persons or property due to neglect of any major precautions also becomes 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.

63. 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.

64. The department will have the right to supply at any time in the interest of the work and departmental material to be used in the work and the contractor shall use such materials at the stock issue rate fixed by the Department by adding + 10 percentage in a particular item of work or market rate whichever is higher.

65. 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.

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

67. 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.

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

(c) 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.

69. (a)The amount **of royalties, additional charges to royalties, EMF @ 5% + DMF @ 10% of 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 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.**

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The rate of additional charges and EMF + DMF adopted in the sanctioned estimate of the work is as per Notification No.1194 dt. 02.02.2026 of Steel & Mines Department as follows: -

1. **Additional charges over royalties**
(a) **Sand & Moorum – Rs. 70.00/ Cum.**
(b) **Stone & stone product – Rs. 260.00/Cum**
2. **EMF @ 5% of royalties**
3. **DMF @ 10% of royalties**

(b) Labour **Cess @ 1 %** of the value of work done will be deducted from the contractor's bill.

(c) 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.

69. **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. Before procurement of construction materials, their samples are to be deposited by the bidder in the office of concerned SDO for testing and acceptance noting the name of the quarry under his dated initials. The testing and transportation will be borne by the Agency.

70. 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.

71. 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.

72. 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.

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

74. 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.

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75. 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.

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

77. An affidavit shall be furnished by the contractor at the time of submission of tender paper about the authentication of tender documents including bid security. 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 on demand.

78. 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.

79. 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.

80. 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.

81. Dewatering from the foundation of structures when and where necessary during execution will have to be done by the contractor and no extra payment will be made on that account. The rate of respective items of work is inclusive of the dewatering.

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

82. The quantities in respect of the items for which quoted rates are more than 25% of the estimated rates are not allowed to be varied by more than five percent. In case, if it exceeds the limit approval of the competent authority should be obtained prior to execution.

83. In case 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.

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

85. The clause of printed form of P-1contract with latest addition/ deletion/ corrections/ substitution etc. will also be binding.

86. 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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87. 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.

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

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

90. 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.

91. 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)

1. The State Government have been working on formulation of rules and procedures for electronic receipt, accounting and reporting of the receipt of **Cost of Tender Paper and Earnest Money Deposit** on submission of bids through the e-procurement portal of Government of Odisha i.e. “https://tendersodisha.gov.in’’ for some time past.

2. Electronic receipt of cost of tender paper has been successfully tested through SBI payment gateway. Now it has been decided to introduce electronic receipt of **Cost of Tender paper and Earnest Money Deposit on submission of bids** through payment gateway of designated banks such as SBI / ICIC Bank / HDFC Bank for all Government Departments, State PSUs, Statutory Corporations, Autonomous Bodies and Local Bodies etc. in phases (ANNEXURE-I). The process outline as well as accounting and reporting structure are indicated below:

a) It will be carried out through a single banking transaction by the bidder for multiple payments like **Cost of Tender Paper and Earnest Money Deposit on submission of bids**.

b) Various payment modes like Internet banking / NEFT/ RTGS of Designated banks and their Aggregator Banks as well can be accessed by the intending bidders.

c) Reporting and accounting of the e-receipts will be made from a single source.

d) Credit of receipt into the Government accounts and to the designated Bank account of the participating entities indicated in Para 2 above would be faster.

3. Only those bidders who successfully remit their **Cost of Tender Paper and Earnest Money Deposit on submission of bids would be eligible** to participate in the tender / bid process. The bidders with pending or failure payment status shall not be able to submit their bid. Tender inviting authority, State Procurement Cell, NIC, the designated Banks shall not be held responsible for such pendency of failure.

4. Banking arrangement:

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a) Designated banks (SBI/ ICICI Bank / HDFC Bank) payment gateway being integrated with e-Procurement portal of Government of Odisha (https://tendersodisha.gov.in)

b) The Designated Banks participating in Electronic receipt, accounting and reporting of **Cost of Tender paper and Earnest Money Deposit on submission of bids** will nominate a Focal Point Branch called e-FPB, who is authorized to collect and collate all e-Receipts. Each such branch will act as the Receiving branch and Focal Point Branch notwithstanding the fact that the bidder might have debited his account in any of the bank's branches while making payment.

5. Procedures of bid submission using electronic payment of tender paper cost and EMD by Bidder:

a) The bidders have to log onto the Odisha e-Procurement portal (https://tendersodisha.gov.in) using his/her digital signature certificate and then search and then select the required active tender from the "Search Active Tender" option. Now submit button can be clicked against the selected tender so that it comes to the "My Tender" section.

b) Uploading of Prequalification / Technical / Financial bid: The bidders have to upload the required Prequalification/Technical /Financial bid, as mentioned in the bidding document and in line with Works Department office memorandum No.7885/W dt. 23.07.2013.

c) Electronic Payment of tender paper cost and EMD: Then the bidders have to select and submit the bank name as available in the payment options:

i. A bidder shall make electronic payment using his/her internet banking enabled account with designated Banks or their aggregator banks.

ii. A bidder having account in other Banks can make payment using NEFT/RTGS facility of designated Banks.

- Online NEFT/RTGS payment using internet banking of the bank in which the bidder holds his account, by adding the account number as mentioned in the challan as an interbank beneficiary.

d) Bid submission: Only after receipt of intimation at the e-Procurement portal regarding successful transition by bidder the system will activate the 'Freeze Bid Submission' button to conclude the bid submission process.

e) System generated acknowledgement receipt for successful bid submission: System will generate an acknowledgement receipt for successful bid submission. The bidder should make a note of **'Bid ID'** generated in the acknowledgement receipt for tracking their bid status.

6. Settlement of Cost of Tender Paper:

a) **Cost of Tender Paper:** In respect of Government receipts on account of **Cost of Tender Paper**, the e-Procurement portal shall generate a MIS for the state Procurement Cell (SPC). The MIS will contain an abstract of the cost of the paper collected with reference to **Bid Identification Number**. The State Procurement Cell shall generate Bank-wise challans under the head of Account for **Cost of Tender Paper** and instruct the designated banks to remit the money to the proper head of account of State Government. In respect of the cost of tender paper received through the e-procurement portal, the remittance to the Cyber Treasury account will be made to the Head of Account 0075-Misc. General Service-800-Other Receipts-0097-Misc.Receipts-02237- Cost of Tender Paper.

b) For the time being, the State Procurement Cell (SPC) will use over the counter payment facility of the Odisha Treasury portal. Thereafter, remittance through NEFT & RTGS will be facilitated through the Odisha Treasury portal.

c) Similarly, in case of State PSUs, Statutory Corporations, Autonomous Bodies and Local bodies etc. **Cost of Tender Paper,** the e-procurement portal shall generate a MIS for the State Procurement Cell (SPC). The MIS will contain an abstract of the cost of tender paper collected with reference to **Bid Identification Number**. The cost of tender papers will be credited to the registered Bank account of the concerned State PSUs, Statutory Corporations, Autonomous Bodies and Local Bodies etc.

d) Bank will refund (in case the Tender Inviting Authority (TIA) issues such instructions) the tender fee and EMD to the bidder, in case the tender is cancelled before opening of Bid as per direction received from TIA through e-procurement system.

e) Bank-end Transaction Matrix of Electronic receipt of Cost of Tender Paper and Earnest Money Deposit on submission of bids enclosed in the **Annexure-I**.

7. Settlement of Earnest Money Deposit on submission of bids:

a) The Bank will remit the Earnest Money Deposit on submission/cancellation of bids to respective bidders account as per direction received from TIA through e-procurement system.

8. Forfeiture of EMD:

Forfeiture of **Earnest Money Deposit on submission of bid** of defaulting bidder is occasioned for various reasons.

a) In case the **Earnest Money Deposit on submission of bid** is forfeited, the e-Procurement portal will direct the Bank to transfer the EMD value from the Pooling Account of SPC to the registered account of the tender invited authority.

b) The Tender invited authorities of the Government Departments will deposit the forfeited **Earnest Money Deposit on submission of bid**, in the State Government Treasury under the appropriate head (8782-Cash Remittances and Adjustments between the officers rendering accounts to the same Accounts Officer-102-P.W.Remittances-1683-Remittances-91028-Remittances into Treasury) after taking the amount as a revenue receipt in their Cash Book under head 0075-Misc. General Services-00-101-Unclaimed Deposits-0097-Misc. Receipts-02080-Misc Deposits and submit the detail account to D.A.G., **Khordha** as a deposit of the Division.

c) By clicking submit button, system will initiate the forfeiture of EMD. System will not allow the evaluator to edit the initiation after clicking the submit button. Forfeiture option can be carried out in phased manner like one bidder at a time.

9. Role of the Banks:

a) Make necessary provision/customizations at their end to enable the provision for online payments/refunds as per this document.

b) Provide necessary real-time message to bidders regarding successful or unsuccessful transactions during online payment processes and redirect them to e-procurement website with necessary transaction reference details enabling them to submit their bids.

c) The bank shall ensure transfer of funds from the pooling account to the Government Head/current account of PSUs/ULBs within the next bank working day as per the directions generated from e-procurement portal.

d) Bank should provide timely reports and reference details to NIC enabling them to carry out their role as stated below.

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e) Refund of amount to bidders as per the XML file provided by e-Procurement system on the next bank working day from the date of generation of the XML file and also provide a confirmation to NIC on the same.

10. Role of State Procurement Cell:

a) Communicate requirement of Government departments/State PSUs / Autonomous Bodies / ULBs online payment requirements to National Informatics Centre / the authorized Banks for mapping/customization.

b) In every working day, the State Procurement Cell shall generate MIS from the e-procurement portal to ascertain the tender paper cost received in the e-Tendering process separately bank-wise for the Government Department and the PSUs/ULBs. The SPC shall generate bank-wise separate online challans from the Odisha Treasury portal and make the remittance through over the counter facility or NEFT/RTGS (as and when this functionality is available in Treasury portal) and issue instruction to the bank for remittance of the receipt to the State Government account.

c) The State Procurement Cell shall be responsible for providing challan details and MIS in respect of the remittance towards tender paper cost to the Tender Inviting authorities for their record.

d) State Procurement Cell shall monitor the progress of e-Tendering by different Government Departments/State PSUs/Autonomous Bodies/ULBs through MIS. State Procurement Cell shall monitor and send monthly progress reports to the Government.

e) The e-procurement system will generate a consolidated refund & settlement XML file as an end of the day activity.

f) e-procurement system will provide a web service for Payment Gateway (PG) provider to pull the encrypted refund and settlement details in XML file against a day.

g) Similarly, Payment Gateway (PG) provider will provide a web service to pull the refund and settlement status against a day.

h) e-procurement system will update the status accordingly for reconciliation report.

11. Role of National Informatics Centre:

a) Customize e-procurement software and web-pages of Government of Odisha (https://tendersodisha.gov.in) to enable the provision for electronic payment.

b) The NIC, Odisha will modify/rectify the errors in electronic data relating to the Chart of Account.

c) NIC will provide an interface to organizations to download the electronic receipt data.

d) Enable automatic generation of daily XML files from e-Procurement system and ensure delivery of the same to the authorized Banks for enabling automatic refund/settlement of funds.

e) NIC shall enable the e-Procurement portal to generate MIS as required for the State Procurement Cell in order to make remittance of the tender paper cost to the State Government account using the Odisha Treasury Portal.

12. Role of Cyber Treasury:

a) The cost of the tender paper deposited by the SPC using the Odisha Treasury Portal which will be accounted for by the Cyber Treasury and it shall submit the accounts to A.G. (O) as per the established process.

b) The Cyber Treasury will provide MIS as required to the SPC for the purpose of accounting and reconciliation of the electronic remittances made to the State Government account.

13. Redressal of Public grievances:

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a) The State Procurement Cell, Odisha, National Informatics Center, Odisha and the e-FPB will have an effective procedure for dealing with, public compliant for e-Receipt related matters. In case, any mistake is detected by any of the stakeholders in reporting of receipt of tender paper cost and EMD, either Suo motto or on being brought to its notice, the State Procurement Cell, Odisha, National Informatics Centre, Odisha unit, Cyber treasury and the bank will promptly take steps for rectification. The e-Focal Point Branch of the participating Banks, National Informatics Centre, Odisha and the State Procurement Cell, Odisha will notify the contact number and address of the Help Desk for resolution of any dispute regarding e-Receipt.

14. Applicability and modification of existing rules/orders:

The modalities prescribed in this Office Memorandum for downloading of tender paper, submission and rejection of bid, acceptance of Bids as well as refund and forfeiture of earnest deposit will be applicable for electronic submission of bids through e-procurement portal. Existing provisions regulating cost of Tender Paper and Earnest Money Deposit in OPWD code and OGFR would stand modified to the extent prescribed in this Office Memorandum.

15. These arrangements would be made effective after signing of MoU between the designated Banks and the State Procurement Cell, firming up of Banking arrangements and technical integration between designed Bank and e-procurement Portal.

1. This shall take effect from the date of issue of this Office Memorandum.
2. Accordingly, relevant existing codal/contractual provision exist vide Office Memorandum No. 6785/W dt. 09.05.2017 of Works Department stands modified to the above extent.
3. This has been concurred in by the Finance Department vide their UOR No. 39-WF-I dt. 09.11.2017.

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Annexure-I

Back-end Transaction Matrix of Electronic receipt and remittance of cost of Tender paper and Earnest Money Deposit on submission of bids.

	Cost of Tender Paper	**Earnest Money Deposit on submission of Bids**
Government Departments	**i)** The payment towards the **cost of Tender Paper**, in case of Government Departments, shall be collected in separate pooling accounts opened in Focal Point Branch called e-FPB of respective designated banks [as stated in Para-2] at Bhubaneswar on T+1 day. **ii**)With reference to the Notice Inviting Tender/Bid Identification Number, the amount so realized is to be remitted to Government Account under the Head of Account 0075-Misc General Services-800-Other Receipts-0097-Misc. Receipts-02237-Cost of Tender Paper through Odisha Treasury Portal after opening of the bid.	**i)** In case of tenders of Government Departments, amount towards **Earnest Money Deposit** on submission of bids shall be collected in a pooling account opened for this purpose at Focal Point Branch called e-FPB of respective designated Banks at Bhubaneswar, and the banks will remit the amount to respective bidder's account within two working days on receipt of instruction from TIA through refund and settlement of e-procurement system. **ii**) In case of forfeiture of **Earnest Money Deposit** on submission of bids, the e-procurement portal will direct the Bank to transfer the **EMD** value from the Pooling Account of SPC to the registered account of the tender inviting authority within two working days of receipt of instruction from TIA.
State PSUs, Statutory Corporations , Autonomous Bodies and Local Bodies	**i)** In case of State PSUs, Statutory Corporations, Autonomous Bodies and Local Bodies etc. the amount towards **Cost of Tender Paper** on submission of bids shall be collected in separate pooling accounts opened in Focal Point Branch called e-FPB of respective designated banks at Bhubaneswar T+1 day. **ii)** The Paper cost will be transferred to the respective current accounts of concerned State PSUs, Statutory Corporations, Autonomous Bodies and Local Bodies etc after opening of bid.	**i)** Amount towards **EMD** on submission of bids shall be collected in a separate pooling account of Focal Point Branch called e-FPB of respective designated banks at Bhubaneswar and the banks will remit the amount to respective bidder's account on receipt of instruction from TIA through refund and settlement of e-procurement system within two working day from receipt from such instruction. **ii)** In case of forfeiture of **Earnest Money Deposit** on submission of bids the e-Procurement portal will direct the Bank to transfer the EMD value from the Pooling Account of SPC to the registered account of the tender inviting authority within two working days of receipt of instruction from TIA.

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SECTION – 2
INFORMATION AND INSTRUCTION TO TENDERERS

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SECTION-2

1. Preparation of Bid Documents

The intending tenderer 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 an **intelligent bill of quantity in MS Excel format.** As per the requirement of the bid document the bidder will fill up the required information and fill up the percentage rate in figures at specified location on the intelligent MS Excel sheet. The bidder is to scan and upload alongwith the bid the following documents.

1. Registration Certificate,
2. GSTIN Certificate,
3. PAN Card, ,EMD,
4. Cost of Bid,
5. No relation Certificate
6. Affidavit (Ref. Annexure-E & F)
7. Details of Structure & Organization (Ref. Form-A)
8. All other documents as specified in the Bid Document for the work.
9. Attested True copy of registration of firm/company or Corporation.
10. Certified copy of Power of Attorney issued in favour of authorized persons in case of limited company or Corporation in favour of a partner in case of firm in partnership who shall sign the tender documents digitally (Ref Clause 2.6 and 2.7 of Section-3)

The bidder is also required to scan and upload any other required documents as specified in the bid document.

2. Method of submission of Tender Documents

2.1 The tenderer 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 of the 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 technical 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 forfeited.

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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 tenderer 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.

2.5 If the intending tenderer is a firm in partnership it shall be digitally signed by a partner holding the power of attorney for the firm in partnership in which case a certified copy of power of attorney shall accompany in the 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 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 period of execution is 11 **(Eleven) calendar months.**

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

3. Opening of Tender Documents.

The On-Line Technical bid will be open on 12.11.2026 at 11.00 hours in the office of Additional Chief Engineer, Drainage Circle, Bhubaneswar in presence of the tenderer or their authorized representative, who wish to be present.

4. Affidavit.

I. 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-J.**

II. Affidavit should be furnished by Engineer Contractor / S.C. / S.T. Contractors / Physical Handicapped Contractors etc. for availing exemption / relaxation of E.M.D. 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 ,Khordha.**

   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/Executive Engineer shall also be open for inspection by the contractor at the office of the Sub-Divisional Officer / Executive Engineer 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 / Executive Engineer before the tender from is issued if a from 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 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

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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 documents mentioned 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 Executive Engineer. Government securities may be endorsed to the Executive Engineer in lieu of cash deposit of the required amount of the security money. No tender shall be finally accepted until the required amount of the security money has been deposited.

11. 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.

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.

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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 Executive Engineer of the Division/ FA & CAO, 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. The earnest money deposited is liable to be forfeited to Govt. if the tenderer backs out from the offer before acceptance of the bid by the competent authority.

15. GST on works contract as applicable at the time of payment shall be paid extra over the Gross amount of the running bill amount. [vide section 15 and section 142(11) (C) of Odisha GST Act 2017].

16. Prevailing rate of GST (Presently TDS-2%) on the gross amount of the bill will be deducted from the contractor's bill as applicable on the date of payment where agreement value exceeds two lakhs fifty thousand. (to be applicable as per Govt. Notification & amended from time to time)

17. Labour Cess @ 1% is to be deducted from the bill as per the notification No 12653 of Govt. of India

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BID FOR WORKS

I / We hereby tender for the execution for the Government of Odisha for the work specified in the underwritten memorandum at the rates specified therein a period of **11 (Eleven) calendar months** from the date of written order to commence and in accordance in all respects with the specifications designs and other documents referred to in rule. I here of and subject to the annexed conditions of contract and with such materials as are provided for by and in all other respects in accordance with such condition so far as applicable.

MEMORANDUM

a) If several sub-works are included they should be detailed in a separate sheet.	(a)	Name of Work	:	**Improvement of Dahuka Drainage Channel under Nayagarh Block of Nayagarh Constituency.**
	(b)	**Amount put to bid** (Bill of Quantity)	:	**Rs. 4,54,86,670/-**
	(c)	Agreement Amount	:	
	(d)	E.M.D	:	**Rs. 4,54,900 /-**
e) This deposited will be 2 percent of the estimated cost of the work.	(e)	Initial security deposits (including earnest money) to be deposited before the commencement of the work.	:	this deposit will be 2% of the accepted amount of tender
f) This percentage from bills will be credited to the contractor's security	(f)	Security deposits to be deducted from bills.	:	
	(g)	Time required for the work from date of written order to commence	:	**11(Eleven) calendar months**
	(h)	Date of written order to commence	:	
	(i)	Actual date of commencement of work	:	
	(j)	Schedule date of completion	:	
	(k)	Total number of item of works tendered for	:	**14 (Fourteen) items.**

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Nature of contractor before submission of tender

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

Dated the …… Day of ……..2026

Signature of contractor

Witness:

Address:

CONTRACTOR

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

Dated the ……..Day of ……..2026

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Agreement No……P1 Certified that this agreement contains …… Pages only

(Schedule XLV-Form No.-61)

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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 authorized, 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-fourth of the work before three-fourth 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

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

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one third percent on the said estimated cost of the whole work for every day that the due quantity of work remains incomplete, **provided always that the entire amount of compensation to be paid under the 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 left over 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

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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 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 Executive 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

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

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

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.

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

Extension of time

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opinion, be necessary or proper. The Executive Engineer shall at the same time inform the contractor whether he claims compensation for delay.

Clause – 5 On completion of the work, 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 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 dirts 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.

Final Certificate

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

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

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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 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

Store supplied by Government

NOT APPLICABLE

Engineer-in-charge's store, or it is required that the contractor shall use certain 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

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off or deducted from any sums then due, or thereafter 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 absolute property of Government and shall not any account be removed from the site of the work, and shall at all-time be 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 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 materials 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 this 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 thereafter may become due to the contractor; or from his security deposit, or the proceeds of sale thereof".

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

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 account of delay

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in supplying materials. However, extension of time for the completion of work can be granted on timely application by the contractor vide clause 4.

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 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

Alteration in specification and designs

Extension of time in consequence of alterations

Do not invalidate contract

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

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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.

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 any reason whatsoever not require the whole thereof as specified in the tender to be carried out the Engineer-in-charge shall give notice in writing of the fact to 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

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

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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 accordance with the contract. The contractor shall on demand in writing from the Engineer-in-charge specifying the work materials or articles complained of notwithstanding that the same may have been inadvertently passed, certified and paid 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 receive orders 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

Notice to be given before work is covered

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Clause – 14 The contractor shall give not less than five days' 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 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 the contractor'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.

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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.

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

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

Contractor to supply plants, ladders, scaffolding etc.

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

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 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-charge at 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 defense 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 neighborhood.

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

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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 holder as apprentices at his own cost if the cost of work as shown in the tender exceeds Rs.2,50,000/- The apprentices will be selected by the Chief Engineer. The period of employment will commence within one month after the date of work order and would last till the date when 90% of work is completed. The stipend to be paid to the apprentices, should not be less than Rs.628/- per day in case of graduate Engineers and not less than Rs.578/- 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 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 Sector undertakings, private companies and firms or be ineligible for appointment to Government service. The contractor shall pay them monthly

Employment of Graduate Engineers & Diploma Holders

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 names of such unemployed Graduate Engineer and Diploma holders if such help is sought for by the contractor. The names of such Engineering personnel appointed by the contractor should be intimated to the tender receiving 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.

Work not to be sublet.

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Clause – 18 The contract shall not be assigned or sublet without the written approval of the Executive Engineer and if the contractor shall assign or sublet his contract or attempt 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 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.

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

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

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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**

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 work the 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 be construed & 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.

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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.

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

Clause – 30 The contractor shall bear all taxes, 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:

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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.

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.

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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, index of (Mild steel long products) has been chosen to represent steel groups.

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= $0.85 \times P_b / 100 \times R \times (B_i - B_o) / B_o$

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

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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 15^{th} days of the month under consideration.

P_b= Percentage of bitumen component of the work

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

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

V_{pi}= $0.85 \times P_{pi} / 100 \times R \times (Pi1 - P_{i0}) / P_{i0}$

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 considerationas 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= $0.85 \times P_i / 100 \times R (L_i - L_o) / L_o$

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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.

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= $0.85 \times P_f/100 \times R (F_i - F_o) / Fo$

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 High Speed Diesel (HSD) at the existing consumer pumps of IOC / BPCL / HPCL at nearest center on the day 28 days prior to the date of opening of 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 High Speed Diesel oil has been chosen to represent fuel and lubricants group.

31.(d) Adjustment <u>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= $0.85 \times P_p/100 \times R (P_i - P_o) / Po$

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.

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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 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 thereto 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,			29.60%
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,			1.72%
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,			2.20%
31(a)(iv)	Bitumen (VG-30)	The official retail price in			

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		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,			
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,			56.48%
			Total		100%

* Values to be filled up at the time of drawl of contract.

** Values to be filled up in the Bid document.

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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.

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 unauthorizedly 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 Executive Engineer 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 regulations aforesaid without prejudice to his right to claim indemnity from his sub-contractor.

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

(g) 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 the labourers directly or indirectly employed in the works one day rest for six days continuous work and pay wages at the same rate as for duty, in the event of default. The Executive Engineer 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.

(h) 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.

(i) 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 Executive Engineer shall be final in deducting from any bill due to contractor.

(j) 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.

(k) Maternity benefit rules for female worker employed by contractor, Leave and pay during leave shall be regulated as follows.

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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.

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 woman unless she has been employed for a total period not less than 6 months immediately preceding the date on which she proceeds on leave.

MODEL RULES FOR HEALTH & SANITARY ARRANGEMENTS FOR WORKERS EMPLOYED BY ODISHA P.W.D. OR IT'S CONTRACTORS

1. **Application:** These rules shall apply to all construction work in charge of Odisha Public Works Department which are expected to continue for a year or more.

2. **Definitions**:

(i) "Work Place" means a place at which an average of fifty or more workers are employed in connection with construction work

(ii) Large work place means a place at which an average of 500 or more workers are employed in connection with construction work.

3. **First Aid:**

(a) At every work place there shall be maintained in a readily accessible place first aid appliances including and adequate supply or sterilizer dressing and sterilized cotton wool. The appliances shall be kept in good order and in large work places they shall be readily available during working hours.

(b) At large work places where hospital facilities are not available within easy distance of the workers, first aid posts shall be established and run by a trained compounder.

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(c) Where large work places are remote from regular hospitals an indoor ward shall be provided with one bed for every 250 employees.

(d) Where large work places are situated in cities towns or in their suburbs and no beds are considered necessary owing to the proximity of city, town hospitals, an ambulance shall be provided to facilitate removal of urgent cases to these hospitals. At the work place some conveyance facilities such as a car shall be kept readily available to take injured persons or person to the nearest hospitals.

4. **Drinking Water:**

(a) In every work place, there shall be provided and maintained at suitable places, easily accessible to labour, a sufficient supply of water fit for drinking.

(b) Where drinking water is obtained from an intermittent public water supply each work place shall be provided with storage where such drinking water shall be stored.

(c) Every water supply of storage shall be at a distance of not less than 50 feet from any latrine, drain or other sources of pollution where water to be drawn from an existing well which is within such proximity of latrine drain or any other sources of pollution the well shall be properly chlorinated before water is drawn from it for drinking. All such wells shall be entirely closed in and be provided with tray door which shall be dust and water proof.

(d) A reliable pump shall be fitted to each covered well the tray door shall be kept locked and opened only for cleaning or inspection which shall be done at least once a month.

(e) The temperature of drinking water supplied to workers shall not exceed 90^0 F

5. **Washing and Bathing Place:**

(i) Adequate washing and bathing places shall be provided separately for men and women.

(ii) Such places shall be kept in clean and drained condition

6. **Scale of Accommodation in Latrines and Urinals: -** There shall be provided within the premises of all work place latrines and urinals in an accessible place; and the accommodation, separately for each of them shall not be less than the following.

(a) Where the number of persons employed
does not exceed 50. No. of seats 1

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(b) Where the number of persons employed exceeds 50 but does not exceed 100 — No. of Seats 3

(c) For every additional 100 (in particulars cases the Executive Engineer shall have the power to vary the scale where necessary) — No. of seats 3 per 100

7. **Latrine and Urinals for Women:** If women are employees, separate latrines and urinals separate from that for women and marked in the vernacular in conspicuous letter “for women only” shall be provided on the scale laid in rule.

Those for men shall be similarly marked “for men only” A poster showing the figure of a men and women and shall also be exhibited at the entrance of Latrines for each sex. There shall be adequate supply of water close to the urinals and latrines.

8. Latrines and Urinals: Except in work places provided with water flushed latrines connected with a water borne sewerage system, all latrines shall be provided with receipt able on dry-earthen system which shall be cleaned at least four times daily and at least twice during working hours and kept in a strictly sanitary condition. The receptacle shall be tarred inside and outside at least once a year.

9. **Construction of Latrines:** The inside wall shall be constructed of masonry or stone materials and shall be cement washed inside and outside at least once a year. The dates of cement washing shall be noted in register maintained for this purpose, and kept available for inspection.

10. **Disposal of excreta:** Unless otherwise arranged for by the local sanitary authorities’ arrangements for proper disposal of excreta by incineration at the work place shall be made by means of a suitable incinerator approved by as, Director of Public Health of Municipal Medical Officer or Health at the case may be, whose jurisdiction the work place is situated. Alternatively, excreta may be disposed off by putting a laver of night soil at the bottom of pucca tank prepared for the purpose and covering it with 6’ layer of waste or refuse and then covering it up with a layer of earth for a fortnight (when it will turn in to manure).

11. **Provision of shelters during rest:** At every work place, there shall be provided free of cost two suitable sheds one for females and the other for rest for the use of labourers. The height of the shelter shall be less than 11 feet from the floor level the lowest part of the roof.

12. **Creche:** At every work place at which more than 50 women workers are employed, there shall be provided only one hut for the use of children under the age of 6 year, belonging to such women and shall be used for infant's games and play and their bed room. The huts shall not be constructed on a lower standard than the following.

i) Thatched huts

ii) Mud floors and walls.

iii) Planks spared over the mud floor and covered with matting.

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

b) Where the number of women workers is more than 50 the contractor shall provide one hut and Dhai to look after the Children of women workers.

c) The size of creche shall vary according to the number of women workers.

d) The crèche shall be properly maintained and necessary equipment like toys etc. shall be provided.

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

CONTRACTOR'SLABOUR REGULATIONS

1. **Short title**: -These regulations may be called "The Odisha Public Works Department / Electricity Department Contractor's Regulations".

2. **Definition:** In these Regulations, unless otherwise expressed or indicated the following words and expressing shall have the meaning hereby assigned to them respectively,

that is say: "Labour" means a worker employed by a contractor for **"Improvement of Dahuka Drainage Channel under Nayagarh Block of Nayagarh Constituency".**

(a) **"**Directly or indirectly through a sub-contractor or other person, by an agent on his behalf.

(b) Fair wages mean wages whether for time or piece work prescribed by the **Drainage Division, Khordha** provided that where high rates have been prescribed under the

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minimum wages Act 1948 wages at such higher rates would constitute fair wages (W.D. No.22059 dt,16.8.77)

(c) "Contractor" shall include every person whether a sub-contractor or headman or agent employing labour on the work taken on contract.

(d) "Wages" shall have the same meaning as defined in the payment of wages Act. And include time and piece rate wages if any.

3. **Display of notices regarding ways, etc.: -**

The contractor shall: -

(a)Before he commences his work on contract display, and correctly maintain and continue to display and correctly maintain, in a clean and legible condition in a conspicuous place on the work, notice in English and in the local Indian language spoken by the majority of the workers giving the rate of wage prescribed by State Public Works Department/ **Drainage Division, Khordha** for the district in which the work is done.

(b) Send a copy of such notices to Engineer-in-charge of the work.

4. **Payment of Wages:-**

(a) Wages due to every worker shall be paid to him direct.

(b) All wage shall have to be paid in cash in current coin or currency or in both.

5. **Fixation of wages periods: -**

(a) The contractor shall fix the wage period in respect of which the wages be payable.

(b) No wage period shall exceed one month.

(c) Wage of every workman employed on the contract shall be paid before the expiry of ten days, after the last day of the wage period in respect of which the wages are payable.

(c) When the employment of any worker is terminated by or on behalf of the contractor the wages earned by him shall be paid before the expiry of the day succeeding the one on which his employment is terminated.

(e) All payment of wages shall be made on a working day.

6. **Wage book and wage cards etc.**

1) The contractor shall maintain a wage book of each worker in such forms as may be convenient, but the same shall include the following particulars:-

a. Rate of daily or monthly wages.

b. Nature of work on which employed.

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c. Total number of days worked during each wage period.

d. Total amount payable for the work during each wage period.

e. All deductions made from the wages with an indication in each of the ground for which the deduction is made.

f. Wage actually paid for each wage period.

2) The contractor shall also maintain a wage card for each worker employed on the work.

3) The Executive Engineer may grant an exemption from the maintenance of wage bond, wages cards to a contractor who, in his opinion may not directly or indirectly employ more than 100 persons on the work

7. **Fines and deduction, which may be made from wages.**

1) The wages of a worker shall be paid to him without any deductions of any kind except the following.

a) Fines.

b) Deduction for absence from duty, i.e. from the place or places where by terms of his employment he is required to work. The amount of deductions shall be in proportion to the period for which he was absent.

c) Deduction for damage to or loss of goods expressly entrusted to the employed person for custody' or for loss on money for which he is required to account where such damage or loss is directly attributable to his neglect or default.

d) Any other deduction which the Odisha Government may from time to time allow.

2) No fines shall be imposed on a worker and no deduction for damage or loss shall be made from his wages until the worker has been given an opportunity of showing abuse against such fines or deduction.

3) The total amount of fines which may be imposed in any one wage period on a works shall not exceed a amount equal to Five paise in a rupee of the wages payable to him in respect of that wage period.

4) No fine imposed on any worker shall be recovered from him by installments after the expiry of 60 days from the date on which it was imposed.

8. **Register of fines, etc.**

1) The contractor shall maintain a register of fines and of all deduction for damage or loss. Such register shall mention the reason for which fine was imposed or deduction for damage or loss was made.

2) The contractor shall maintain a list in English and in the local Indian language clearly defining acts and omissions for which penalty of fine can be imposed. It shall display such list and maintain it in a clean and legible condition in conspicuous place on the work.

9. **Preservation of register:**

The wage register, the wage cards and the register of fines, deduction required to be maintained under these regulations shall be preserved for 12 months after date of the last entry made in them.

10 **Powers of Labour Welfare Officers to make investigation or enquiry**

The labour Welfare Officers or any other persons authorized by the Government of Odisha on their behalf shall have power to make enquiries with a view to ascertaining and enforcing due and proper observance of the fair wage clauses and the provision of these regulations. He shall investigate into any complaint regarding default made by the contractor, sub-contractor in regard to such provisions.

11. **Report of Labour Welfare Officers:**

The Labour Welfare Officers or others authorized as aforesaid shall submit a report of the results of his investigation of enquiry to the Executive Engineer concerned indicating the extent, if any, to which the default has been committed with a note that necessary deductions from the contractor's bill be made and the wages and other dues be paid to the labourers concerned.

12**. Appeal against the decision of Labour Welfare Officers.**

Any persons aggrieved by the decision and recommendation of the Labour Welfare Officer or other person so authorized may appeal against such decision to the Labour Commissioner within 30 days from the date of decision forwarding simultaneously a copy of this appeal to the Executive Engineer concerned but subject to such appeal, the decision of the officer shall be final and binding upon the contractor.

13**. Inspection of registers:**

The contractor shall allow inspection of wage book, card to any of his worker or his agent at a convenient time and place after due notice is received, or to the Labour Commissioner or any other person authorized by the Government of Odisha on his behalf.

14. **Submission of return:**

The contractor shall submit periodical returns as may be specified from time to time.

15. **Amendment**

The Government of Odisha may from, time to time add to or amend these regulations and on any question as to the application interpretation of effect of the regulations the decision of the Labour Commissioner or any other persons authorized by the Government of Odisha in that behalf shall be final.

Clause - 34 The incentive @1% in case of completion of work (**Rs.10 crore & above**) ahead of one month (part of the month shall be excluded) and the maximum amount payable will be fixed at 2% if the work is completed two months

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ahead at the schedule time shall be payable to the contractor. (Ref. Work Dept. Order No. 8310 dt. 17.05.2006) on approval of competent authority.

Clause - 35 The Royality of materials will be recovered from the work bill in case failure of production of proper receipt from quarry holder or Revenue Department after proper verification from concerned Tahsildar.

Clause – 36 DELETED

Clause - 37 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

2.1 Progress of work and Re-scheduling programme

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

2.1.2. Within 15 days of issue of the letter of acceptance, the contractor shall submit to the Engineer-in-Charge for approval 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

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allowed under the contract has elapsed, 2/th 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 overdue programme has been submitted.

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

2.1.6. The Engineer-in-Charge's approval of the programme shall not 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, 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 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. Incase 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

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

2.4 **Management Meetings**

2.4.1 Either the Engineer or the Contractor may require the other to attend a management meeting. The business of 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. The works may need to be executed during night without non-interruption, when required.
2. The excavated materials which are not useful in construction works to be disposed off in low laying area as indicated by Engineer-in-charge.
3. 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.
4. Keeping all these conditions, rates should be quoted by the Contractor.

5. GENERAL INSTRUCTIONS TO CONTRACTORS (vide DOWR Letter No.20415 dt.14.09.2015)

(i) Any Agency or contractor executing a work should be aware about the local festivals like Makar Sankranti, Raja Sankranti Chaiti Parba, Danda Nata or any such festivals which may affect the work schedule. Therefore, the contractors should engage more work forces during working period available at his disposal to complete the work as per schedule.

(ii) 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 workforce and to employ the existing workforce during morning and afternoon hour as per Government orders.

(iii) Rainfall is a normal occurrence during monsoon in Odisha. So, unless there is unusually 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 of the nature.

The same applies for borrow areas ponding also. The Contractor should foresee possible ponding 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.

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

(v) The Agency should plan his work programme and mobilize men and machineries considering the canal closure programme of a particular system of area. Khariff/ 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 discretion of the Engineer-in Charge and can't be claimed as a matter of right.

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

(vii) Only the day(s) of elections to the Local Bodies/ Assembly/ Parliament will be treated as a non-working days).

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SPECIAL CONDITIONS OF THE CONTRACT

1. 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 executing, or completion, maintenance of the works or temporary works but does not include materials or other things intended to form or forming part of the permanent work.

c) Contract - Means the instruction and information for tenderers General and Special conditions of the contract, Technical specification, drawings, tender (including the schedule of quantities and tender prices) the formal agreement and all agenda and attachment related to the above.

d) Contractor- Means the particular person, firm or Corporation with whom the contract has been made for executing the work.

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

g) Government - Means Government of Orissa, Department of Water Resources.

h) I.S.S./B.I.S. - Means Indian Standard Specifications/Bureau of Indian Standard.

i) Temporary works - Means all temporary works of every kind required for the performance of the contract.

j) SPECIFICATION - Whenever the 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.

2) PERIOD OF COMPLETION

The period of completion shall be **11 (Eleven) calendar months** as has been specified in Detail Tender Call Notice from the date of issue of notice to proceed with the work.

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3) LANGUAGE OF THE CONTRACT

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

4) 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.

5) 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, Khordha** 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.

6) 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.

7) 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 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,

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the contractor shall within twenty-four hours of such accident report in writing to the **Executive Engineer, Drainage Division, Khordha**, the 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, Khordha** 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, Khordha** 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, Khordha**, 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.

8) 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, Khordha** 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.

9) FORCE MEASURE:

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.

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10) SETTLEMENT OF DISPUTE:

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

11) 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.

12. Price escalation if applicable as per Clause-31 of conditions of contract for the extended period shall be paid subject to approval of extension of time by the competent authority and approval of the payment of price escalation by the Government of Odisha, Department of Water Resources, Bhubaneswar.

13. 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 non schedule of extra item of work, if the Engineer-in-charge thinks it

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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.

14. Materials if available in the store of the department may be supplied to the contractor at the issue price to be fixed by the Engineer-in-charge. The contractor will receive the materials himself of through his authorized agent and sign in the departmental receipt of the materials. Carriage of materials from the departmental store to the work site will be done by the contractor at his own risk and cost.

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

16. 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.

17. 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.

18. The work may be split up and distributed among several contractors if considered necessary on the exigency of the circumstance of the work and the contractor is not entitled to any compensation on this account.

19. 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.

20. 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.

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

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

23. 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.

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

25. Additional Performance Security (As per Memorandum No. 173/W Dated 03.01.2026) shall be furnished by the bidder when the bid amount is less than the estimated cost put to tender. Only the successful bidder who has quoted less bid price/rates than the estimated cost put to tender shall have to furnish Additional Performance Security (As per Memorandum No. 173/W Dated 03.01.2026) in shape of Term Deposit Receipt pledged in favour of Divisional Officer/ Bank Guarantee in favour of the Divisional officer i.e. **Executive Engineer, Drainage Division, Khordha** from any Nationalized/Scheduled Bank in India counter guaranteed by its local branch at Bhubaneswar within seven days of issue of letter of acceptance(LOA) by the concerned Officer (by e-mail) to the successful bidder otherwise the bid of the successful bidder shall be cancelled & the Earnest Money Deposit/Bid Security shall be forfeited. Further, proceeding for blacklisting shall be initiated against the bidder.

26. Incentive is admissible only in case of completion of original work ahead of original time schedule stipulated in the agreement and the same will be calculated by taking into account of the original estimated cost of the work. Incentive is not admissible in case of works where extension of time is allowed. The incentive will be @ 1% in case of completion of work ahead of one month (part of the month shall be excluded) and the maximum amount payable will be fixed @ 2% if the work is completed two months ahead of the schedule time.

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27. 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

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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 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 Executive Engineer 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.

28. 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.

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

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

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

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

33. 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.

34. 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.

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

36. 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.

37. 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.

38. 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.

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

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40. 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. 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.

41. 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.

42. 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.

43. 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.

44. 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.

45. 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.

46. 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.

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

48. 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.

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

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GUIDELINES / PROCEDURES OF e-PROCUREMENT
Appendix-IX (A) of OPWD Code, Vol-II
Government of Odisha, Works Department
Office Memorandum
File No.07556900042013 (Pt-II)-7885 /W, Dated, 23.07.2013.

Sub:- Executive instructions regarding calling for and acceptance of tenders in e-Procurement.

1. This office memorandum consists of the procedural requirement of e-procurement and shall be made part of the "Detailed Tender Call Notice or Instruction to Bidder for all works" tenders hoisted in the portal.

2. The e-procurement portal of Government of Odisha is https://tendersodisha.gov.in.

3. Use of valid Digital Signature Certificate of appropriate class (Class II or Class III) issued from registered certifying authorities (CA) as stipulated by Controller of Certifying Authorities (CCA), Government of India such as n-Code, Sify, TCS, MTNL, e-Mudhra is mandatory for all users.

4. The DSC issued to the Department users is valid for the period of two years only. All the Department users are responsible to revalidate their DSC prior to expiry.

5. For all purpose, the server time displayed in the e-Procurement portal shall be the time to be followed by all the users.

6. Government after careful consideration have decided to hoist all tenders costing 10 lakhs or above in the e-procurement portal. This will be applicable across all Engineering Departments such as Works Department, Department of Water Resources, Rural Development and Housing & Urban Development Department. Government of Odisha also welcomes hoisting of tenders by any other departments, authority, corporations, local bodies etc. of the State with prior approval from Works Department, Works Department is the Nodal Department for the implementation of e-Procurement in the State.

7. The e-procurement shall be operated compliant to relevant provisions of OGFR/ OPWD Code/ Accounts Code/ Government statues including any amendments brought from time to time to suit to the requirement of the best national practice.

8. Registration in the e-procurement portal is without levy of any charges but Government reserves the right to levy any charges for such value-added services in future.

9. Contractor not registered with Government of Odisha, can participate in the e-Procurement after necessary enrolment in the portal but have to subsequently register themselves with the appropriate registering authority of the State Government before award of the work as per prevalent registration norms of the State.

10. For the role management "Department" is the Administrative Department, Organization or wing is the Chief Engineer or highest tender accepting authority or equivalent officer, Division is the Executive Engineer or equivalent Officer and Sub-division is the Assistant Engineer or equivalent officer.

11. The e-Procurement software assigns roles for operation of the module for specific function. The terminologies used in the portal and their respective functions in the software are as follows.

11.1 Application Administrator (NIC & State Procurement Cell)

i. Master Management
ii. Nodal Officer Creation
iii. Report Generation
iv. Transfer of Officer's login ID

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v. Blocking & unblocking of officer's and bidder's login ID.

11.2 Nodal Officer (At organization level not below the Executive Engineer of equivalent rank)

i. Creation of Users
ii. Role Assignment
iii. Report Generation
iv. Transfer of Officer's login ID.
v. Blocking & unblocking of officer's Login ID.

11.3 Procurement Officer-Publisher (Officer having tender inviting power at any level)

i. Publishing of Tender
ii. Publishing of Corrigendum / addendum / cancellation of Tender
iii. Bid Clarification
iv. Uploading of Pre-Bid minutes.
v. Report generation.

11.4 Procurement Officer-Administrator (Generally sub-ordinate officer to Officer Inviting Tender)

i. Creation of Tender
ii. Creation of Corrigendum / addendum / cancellation of Tender
iii. Report generation.

11.5 Procurement Officer Opener (Generally sub-ordinate officer to Officer Inviting Tender)

i. Opening of Bid

11.6 Procurement Officer Evaluator (Generally Sub-Ordinate Officer to Officer Inviting Tender)

i. Evaluating Bid.

11.7 Procurement Officer-Auditor (Procurement Officer Publisher and / or Accounts Officer / Finance Officer)

i. To take up auditing.

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

12.1 The Notice Inviting Bids (NIB) and Bid documents etc., shall be in the Standard formats as applicable to conventional Bids and will be finalized / approved by the officers competent as in the case of conventional Bids.

12.2 The officers competent to publish NIB in case of conventional Bids will host the NIB in portal. Simultaneously, a notification should also be published in the newspapers as per existing rules preferably, in the following format, to effect economy :-

Government of Odisha "e" procurement Notice

Bid Identification No._____

1. Name of the work: …….
2. Estimated cost: Rs……
3. Period of completion ……
4. Date & Time of availability of bid document in the portal _____
5. Last Date / Time for receipt of bids in the portal _____
6. Name and address of the O.I.T……

Further details can be seen from the e-procurement portal "https://tendersodisha.gov.in".

12.3 The tender documents published by the Tender Inviting Officer (Procurement Officer Publisher) in the website https://tendersodisha.gov.in will appear in the "Latest Active

Tender". The Bidders/ Guest Users can download the Bid documents only after the due date & time of sale. The publication of the tender will be for specific period of time till the last date of submission of bids as mentioned in the 'Notice inviting Bid' after which the same will be removed from the list of "Latest Active Tenders".

13. ISSUE OF ADDENDA / CORRIGENDA / CANCELLATION NOTICE :

13.1 The Procurement Officer Publisher (Officer Inviting Tender) shall publish any addendum/ corrigendum/ cancellation of tender in the website http://tendersodisha.gov.in, notice board and through paper publication and such notice shall form part of the bidding documents.

13.2 The system generates a mail to those bidders who have already uploaded their tenders and those bidders if they wish can modify their tenders. The bidders are required to watch the website till last date and time of bid submission for any addendum/ corrigendum/ cancellation thereof. Tender Inviting Authority is not responsible for communication failure of system generated mail.

14. CREATION AND PUBLISHING OF BID :

14.1 All the volumes/documents shall be uploaded in the portal by the tender creating officer (Procurement Officer Administrator) and published by the Officer Inviting Tender (Procurement Officer Publisher) using their DSCs in appropriate format so that the document is not tampered with

14.2 The tender document comprises the notice inviting tender, bid document/ SBD, drawings in pdf format and the schedule of quantities / BoQ in .xls format to be uploaded by the Officer Inviting Tender.

14.3 Procurement Officer Administrator creates tender by filling up the following forms:

i. BASIC DETAILS

ii. COVER CONTENT: The Procurement officer Administrator should briefly describe the name and type of documents to be uploaded by the bidder in the following format:

(a) For Single Cover/Packet:

Sl. No.	Cover Type	Document Description	Type
1	Fee / Prequal / Technical Finance	Tender cost, EMD, GST, PAN, Contractor RC	Pdf
		Affidavits, undertakings and any other document as per SBD/DTCN	Pdf
		BoQ	.xls

(b) For Two Cover/Packet:

Sl. No.	Cover Type	Document Description	Type
1	Fee / Prequal / Technical …	Tender cost, EMD, GST, PAN, Contractor RC	.pdf
		Affidavits, undertakings and any other document as per SBD/DTCN	.pdf
2	Finance	BoQ	.xls
		Additional Performance Security, Special condition, if any, specifically mentioned by Officer Inviting Tender	.pdf

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iii. TENDER DOCUMENT: The Procurement officer Administrator should upload the NIT in .pdf format.

iv. WORK ITEM DETAILS.

v. FEE DETAILS: The Procurement Officer Administrator should mention the cost of tender paper and EMD amount as laid down in DTCN/SBD.

vi. CRITICAL DATES: The Procurement officer Administrator should mention the critical dates of tender such as publishing date, document download start date & end date, seek clarification start date & end date (optional), bid submission start date & closing date, bid opening date as per DTCN/SBD.

vii. BID OPENER SELECTION: The Procurement Officer creator can select two three / four bid openers for a particular bid. If required the bid openers can also be selected within an organization from other procurement units (Circles / Divisions).

viii. WORK ITEM DOCUMENTS: The Procurement Officer Administrator should upload the digitally signed tender document (SBD/DTCN) or any other addition document/drawings in .pdf format and Bill of Quantities in .xls format.

ix. PUBLISHING OF TENDER: The Procurement Officer Publisher shall publish the tender using his/her DSC after detail scrutiny of the fields created and documents uploaded by the Procurement Officer Administrator. Procurement Officer Publisher can publish tenders for multiple procurement units using multiple DSCs procured for each post separately. After being relieved from the additional charges he has to surrender the additional DSCs to the Nodal Officer of the concerned organization.

15. PARTICIPATION IN BID:

15.1 PORTAL REGISTRATION: The Contractor/Bidder intending to participate in the bid is required to register in the portal using his/her active personal/official e-mail ID as his/her Login ID and attach his/her valid Digital signature certificate (DSC) to his/her unique Login ID. He/ She has to submit the relevant information as asked for about the firm/contractor. The portal registration of the bidder/firm is to be authenticated by the State Procurement Cell after verification of original valid certificates / documents such as (i) PAN and (ii) Registration Certificate (RC) / GST Certificate (for procurement of goods) of the concerned bidder. The time period of validity in the portal is at par with validity of RC / GST clearance. Any change of information by the bidder is to be re-authenticated by the State Procurement Cell. After successful authentication bidder can participate in the online bidding process.

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

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

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

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

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

15.5 PREPARATION OF BID:

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

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

15.6 PAYMENT OF EMD/BID SECURITY AND COST OF BID DOCUMENTS:

15.6.1. The Bidder shall furnish, as part of his Bid, a Bid security online for the amount mentioned under NIT/Contract Data.

15.6.2. The EMD or Bid Security payable online along with the bid is 1% of the estimated contract value (ECV) or as mentioned in the bid document. The validity period of the EMD or Bid Security shall be as mentioned in the bid document. Any bid not accompanied by an acceptable Bid Security and not secured as indicated in the bid document shall be rejected as non-responsive. The bid security shall be retained till such time the successful bidder furnishes Initial Security Deposit (ISD) or Performance Security acceptable to the Officer Inviting the Bid. Failure of the successful Bidder to comply with the requirements shall constitute sufficient grounds for cancellation of the award and forfeiture of the Bid Security.

15.6.3. The Fixed Deposit or any other form as mentioned in detailed tender call notice in respect of Earnest Money Deposit / Bid Security and cost of Bid are to be submitted online.

15.6.4. The tender accepting authority will verify the originals of all the scanned documents of the successful lowest bidder only within 5 days of opening of the tender. In the eventuality of failure on the part of the lowest successful bidder to produce the original documents, he will be debarred in future from participating in tender for 3 years and will be black listed by the competent authority. In such a situation, successful L-2 bidder will be required to produce his original documents for consideration of his tender at the negotiated rate equal to L1 bidder.

15.6.5. Contractor exempted from payment of EMD will be able to participate in the tender directly by uploading documentary evidences towards his eligibility for such exemption.

15.6.6. Government of Odisha has already introduced e-payment gateway in to the portal for payment of Cost of Bid and Bid Security/ Earnest Money Deposit. The process of using e-payment gateway has been mentioned in the DTCN.

16. <u>SUBMISSION OF BID</u>:

16.1 The bidder shall carefully go through the tender and prepare the required documents. The bid shall have a Technical Bid & a Financial Bid. The Technical bid generally consist of cost of Bid documents, EMD/ Bid Security, GSTIN Certificate, PAN / TIN, Registration Certificate, Affidavits, and any other information required by OIT. The Financial Bid shall

consist of the Bill of Quantities (BOQ) and any other price related information / undertaking including rebates.

16.2 Bidders are to submit only the original BoQ (in .xls format) uploaded by Procurement Officer Publisher (Officer Inviting Tender) after entering the relevant fields without any alteration / deletion / modification. Multiple BoQ submission by bidder shall lead to cancellation of bid. In case of item rate tender, bidders shall fill in their rates other than zero value in the specified cells without keeping it blank. In the percentage rate tender the bidder quoting zero percentage is valid and will be taken at par with the estimated rate of the work put to tender.

16.3 The bidder shall upload the scanned copy/copies of document in support of eligibility criteria and qualification information in prescribed format in Portable Document Format (PDF) to the portal in the designated locations of Technical Bid.

16.4 The bidder shall write his name in the space provided in the specified location in the Protected Bill of Quantities (BoQ) published by the Officer Inviting Tender. The bidder shall type rates in figure only in the rate column of respective item(s) without any blank cell in the rate column in case of item rate tender and type percentage excess or less up to two decimal places only in case of percentage rate tender.

16.5 The bidder shall log on to the portal with his / her DSC and move to the desired tender for up loading the documents in appropriate place one by one simultaneously checking the documents.

16.5.1. Bids cannot be submitted after due date and time. The bids once submitted cannot be viewed, retrieved or corrected. The Bidder should ensure correctness of the bid prior to uploading and take print out of the system generated summary of submission to confirm successful uploading of bid. The bids cannot be opened even by the OIT or the Procurement Officer Publisher / opener before the due date and time of opening.

16.5.2. Each process in the e-procurement is time stamped and the system can detect the time of log in of each user including the Bidder.

16.5.3. The Bidder should ensure clarity/legibility of the document uploaded by him to the portal.

16.5.4. The system shall require all the mandatory forms and fields filled up by the contractor during the process of submission of the bid/tender.

16.5.5. The bidder should check the system generated confirmation statement on the status of the submission.

16.5.6. The Bidder should upload sufficiently ahead of the bid closure time to avoid traffic rush and failure in the network.

16.5.7. The Tender Inviting Officer is not responsible for any failure, malfunction or breakdown of the electronic system used during the e-procurement process.

16.5.8. The Bidder is required to upload documents related to his eligibility criteria and qualification information and Bill of Quantity duly filled in. It is not necessary for the part of the Bidder to up-load the drawings and the other Bid documents (after signing) while uploading his bid. It is assumed that the bidder has referred all the drawings and documents uploaded by the Officer Inviting the Bid.

16.5.9. The Bidder will not be able to submit his bid after expiry of the date and time of submission of bid (server time). The date and time of bid submission shall remain unaltered even if the specified date for the submission of bids declared as a holiday for the Officer Inviting the Bid.

16.6 SIGNING OF BID: The 'online bidder' shall digitally sign on all statements, documents, certificates uploaded by him, owing responsibility for their correctness / authenticity as per IT ACT 2000. If any of the information furnished by the bidder is found to be false / fabricated / bogus, his EMD/Bid Security shall stand forfeited and his registration in the portal shall be blocked and the bidder is liable to be blacklisted.

17. SECURITY OF BID SUBMISSION:

17.1 All bid uploaded by the Bidder to the portal will be encrypted.

17.2 The encrypted Bid can only be decrypted / opened by the authorized openers on or after the due date and time.

18. RESUBMISSION AND WITHDRAWAL OF BIDS:

18.1 Resubmission of bid by the bidders for any number of times before the final date and time of submission is allowed.

18.2 Resubmission of bid shall require uploading of all documents including price bid afresh.

18.3 If the bidder fails to submit his modified bids within the pre-defined time of receipt, the system shall consider only the last bid submitted.

18.4 The bidder should avoid submission of bid at the last moment to avoid system failure or malfunction of internet or traffic jam or power failure etc.

18.5 The Bidder can withdraw his bid before the closure date and time of receipt of the bid by uploading scanned copy of a letter addressing to the procurement Officer Publisher (Officer Inviting Tender) citing reasons for withdrawal. The system shall not allow any withdrawal after expiry of the closure time of the bid.

19. OPENING OF THE BID:

19.1 Bid opening date and time is specified during tender creation or can be extended through corrigendum. Bids cannot be opened before the specified date & time.

19.2 All bid openers have to log-on to the portal to decrypt the bid submitted by the bidders.

19.3 The bidders & guest users can view the summary of opening of bids from any system. Contractors are not required to be present during the bid opening at the opening location if they so desire.

19.4 In the event of the specified date of bid opening being declared a holiday for the Officer Inviting the Bid, the bids will be opened at the appointed time on the next working day.

19.5 Combined bid security for more than one work is not acceptable.

19.6 The electronically submitted bids may be permitted to be opened by the predefined Bid opening officer from their new location if they are transferred after the issue of Notice inviting Bid and before bid opening. Further, action on bid documents shall be taken by the new incumbent of the post.

19.7 In case of non-responsive tender the officer inviting tender should complete the e-Procurement process by uploading the official letter for cancelled / re-tender.

20. EVALUATION OF BID:

20.1 All the opened bids shall be downloaded and printed for taking up evaluation. The officer authorized to open the tender shall sign and number on each page of the documents downloaded and furnish a certificate that "the documents as available in the portal containing …. nos. of pages".

20.2 The bidder may be asked in writing / online (in their registered e-mail ids) to clarify on the uploaded documents provided in the Technical Bid, if necessary, with respect to any

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doubts or illegible documents. The Officer Inviting Tender may ask for any other document of historical nature during Technical Evaluation of the tender. Provided in all such cases, furnishing of any document in no way alters the Bidder's price bid. Non submission of legible documents may render the bid non-responsive. The authority inviting bid may reserve the right to accept any additional document.

20.3 The bidders will respond in not more than 7 days of issue of the clarification letter, failing which the bid of the bidder will be evaluated on its own merit.

20.4 The Technical evaluation of all the bids shall be carried out as per information furnished by Bidders.

20.5 The Procurement Officer-Evaluators; will evaluate bid and finalize list of responsive bidders.

20.6 The financial bids of the technically responsive bidders shall be opened on the due date of opening. The Procurement Officer-Openers shall log on to the system in sequence and open the financial bids.

20.6.1. The Financial Bid will be opened on the notified date & time in the presence of bidders or their authorized representative who wish to be present.

20.6.2. At the time of opening of "Financial Bid", bidders whose technical bids were found responsive will be opened.

20.6.3. The responsive bidders' name, bid prices, item wise rates, total amount of each item in case of item rate tender and percentage above or less in case of percentage rate tenders will be announced.

20.6.4. Procurement Officer-Openers shall sign on each page of the downloaded BoQ and the Comparative Statement and furnish a certificate to that respect.

20.6.5. Bidder can witness the principal activities and view the documents/summary reports for that particular work by logging on to the portal with his DSC from anywhere.

20.6.6. System provides an option to Procurement Officer Publisher for reconsidering the rejected bid with the approval of concerned Chief Engineer / Head of Department.

21. NEGOTIATION OF BIDS :

21.1 For examination, evaluation and comparison of bids, the officer inviting the bid may, at his discretion, as the lowest bidder for clarification of his rates including reduction of rate on negotiation and breakdown of unit rates.

22. NOTIFICATION OF AWARD AND SIGNING OF AGREEMENT:

22.1 The Employer/Engineer-in-Charge shall notify acceptance of the work prior to expiry of the validity period by cable, telex or facsimile or e-mail confirmed by registered letter. This Letter of Acceptance will state the sum that the Engineer-in-Charge will pay the contractor in consideration of execution & completion of the Works by the contractor as prescribed by the contract & the amount of Performance Security and Additional Performance Security required to be furnished. The issue of the letter of acceptance shall be treated as closure of the Bid process and commencement of the contract.

22.2 The Contractor after furnishing the required acceptable Performance Security & Additional Performance Security, "Letter to proceed" or "Work Order" shall be issued by the Engineer-in-Charge with copy thereof to the Procurement Officer –Publisher. The Procurement Officer-Publisher shall up load the summary and declare the process as complete.

22.3 If the L-1 bidder does not turn up for agreement after finalization of the tender, then he shall be debarred from participation in bidding for three years and action will be taken to blacklist the contractor. Besides the consortium / JV / firm where such an agency / firm

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already happens to be or is going to be a partner/member/proprietor, he/they shall neither be allowed for participation in bidding for three years nor his/their application will be considered for registration and action will be initiated to blacklist him / them. In that case, the L-2 bidder, if fulfils other required criteria, would be called for drawing agreement for execution of work subject to condition that the L-2 bidder negotiates at par with the rate quoted by the L-1 bidder, otherwise the tender will be cancelled.

23. BLOCKING OF PORTAL REGISTRATION:

23.1 If the Registration Certificate of the Contractor is cancelled / suspended by the registering authority/ blacklisted by the competent authority his portal registration shall be blocked automatically on receipt of information to that effect.

23.2 The portal registration blocked in the ground mentioned in the above Para-23.1 shall be unblocked automatically in receipt of revocation order of cancellation / suspension / blacklisting from the concerned authority.

23.3 The Officer Inviting Tender shall make due inquiry and issue show cause notice to the concerned contractor who in turn shall furnish his reply, if any, within a fortnight from the date of issue of show cause notice. Thereafter the Officer Inviting Tender is required to issue an intimation to the defaulting bidder about his unsatisfactory reply and recommend to the Chief Manager (Tech.) for blocking of portal registration within 10 days of intimation to the defaulting bidder regarding his unsatisfactory reply with intimation to the Registering Authority and concerned Chief Engineer/ Heads of Office if any of the following provisions are violated.

23.3.1. Fails to furnish original Technical / Financial (Tender Paper Cost, EMD/Bid Security) instruments before the designated officer within the stipulated date and time.

23.3.2. Backs out from the bid on any day after the last date of receipt of tender till expiry of the bid validity period.

23.3.3. Fails to execute the agreement within the stipulated date.

23.3.4. If any of the information furnished by the bidder is found to be false / fabricated / bogus. Accordingly, the Officer Inviting Tender shall recommend to the Chief Manager (Tech.), State Procurement Cell, Odisha for blocking of portal registration of bidder and simultaneously action shall also be initiated by OFFICER INVITING TENDER for blacklisting as per Appendix – XXXIV of OPWD Code, Volume-II.

24. GUIDELINES FOR UNBLOCKING OF PORTAL REGISTRATION:

24.1 UNBLOCKING OF PORTAL REGISTRATION:

Unblocking of portal registration of a contractor shall be done by a Committee consisting of the following members.

EIC (Civil)-cum-CPO,	-	Chairman
Engineer-in-Chief (WR)	-	Member
Concerned Chief Engineer	-	Member
Sr. Manager (Finance), SPC	-	Member
Officer Inviting Tender	-	Member
Chief Manager (Technical), SPC	-	Convener

24.2 The Chief Manager (Tech), State Procurement Cell will be the convener and he will maintain all records for this purpose. The Committee shall meet not less than once in a month if required & shall consider the recommendation of the officer inviting tender for unblocking of portal registration. The quorum of the meeting will be four.

CONTRACTOR

EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

24.3 The minimum period of blocking of Portal Registration shall in no case be less than 90 days. After blocking of Portal Registration, the Contractor whose Portal Registration has been blocked may file application to the concerned officer inviting tender showing sufficient ground for unblocking of his portal registration along with a Treasury Challan showing deposit of Rs. 10,000/- (Rupees ten thousand) only (non-refundable) under the head of accounts '0059-Public Works' as processing fees. The officer inviting tender shall forward the application filed by the contractor to the Chief Manager (Tech), State Procurement Cell.

24.4 On receipt of recommendation from the concerned Chief Engineer along with the copy of challan as mentioned above, the Chief Manager (Tech) being the member Convener of the Committee shall place in the case before the Committee for examination and taking a decision in this regard. After examination the Committee may recommend for unblocking of the portal registration of said contractor if the Committee is satisfied that the fault committed by the Contractor is either unintentional or done for the first time.

24.5 After scrutiny by the State Procurement Cell if it is found that the portal registration of a contractor has been blocked for the 2nd time the Chief Manager (Tech), SPC may not consider his case to be placed before the Committee and may advice the concerned officer inviting tender to issue show cause notice to the contractor asking him to explain as to why his portal registration shall not remain blocked. On receipt of show cause reply from the contractor the officer inviting tender shall examine the same & if considered proper he may report to the Chief Manager (Tech), SPC along with his views furnishing the copy of the show cause reply for placement of the same before the Committee for taking a decision in respect of blocking/ unblocking. If the Committee found that the contractor is in habit of committing such fault again and again intentionally the committee may advice the concerned officer inviting tender to initiate proceeding for blacklisting as per the existing rule.

1. These amendments shall take effect from the date of issue of the order.
2. This amendment is an addition to the existing provision and will be placed below Appendix-IX to OPWD Code, Vol-II.
3. Accordingly Officer Memorandum No.1027 dt.24.01.2009 stands modified.

This has been concurred in by the Finance Department vide their U.O.R. No.3-WF-I Dt.04.01.2013.

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EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

Government of Odisha
Works Department
***
Office Memorandum

File No.07556900042013 (Pt-IV) - 12366 /W, Dated. 8.11.2013

Sub:-Amendment of Codal / Contractual provisions.

After careful consideration Government have been pleased to make amendment to contractual and codal provisions for increasing the efficiency and transparency of Department dealing with infrastructure development of the State as per Annexure- I, II, III, IV, V, VI & VII .

1. These amendments shall take effect from the date of issue of the order.
2. Accordingly, relevant existing codal/ contractual provision stands modified with effect from the date of issue of this O.M.
3. This has been concurred in by Finance Department in their UOR No.157-WF-I dt.17.5.2012.

8/11/13
EIC - cum- Secretary to Government

Memo No. 12367 /W, Dated. 8.11.2013

Copy forwarded to P. S. to Hon'ble Chief Minister, Odisha for information and necessary action.

8/11/2013
FA - cum- Addl. Secretary to Government

Memo No. 12368 /W, Dated. 8.11.2013

Copy forwarded to OSD to Chief Secretary, Odisha/ P.S. to Development Commissioner- cum-Additional Chief Secretary, Odisha for information and necessary action.

8/11/2013
FA - cum- Addl. Secretary to Government

Memo No. 12369 /W, Dated. 8.11.2013

Copy forwarded to All Departments / Managing Director, OB & CC Ltd., Bhubaneswar / Managing Director, OCC Ltd., Bhubaneswar for information and necessary action.

8/11/2013
FA - cum- Addl. Secretary to Government

CONTRACTOR

EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

Memo No. 12370 /W, Dated. 8.11.2013

Copy forwarded to All Chief Engineers, Odisha / All Superintending Engineers / All executive Engineers (under Works Department) for information and wide circulation among subordinate offices.

FA - cum- Addl. Secretary to Government

Memo No. 12371 /W, Dated. 8.11.2013

Copy forwarded to the Accountant General (A&E), Odisha, Bhubaneswar/ Accountant General, Odisha, Puri Branch, Puri for information and necessary action.

FA - cum- Addl. Secretary to Government

Memo No. 12372 /W, Dated. 8.11.2013

Copy forwarded to the Head, State Portal Group, IT Centre, Ground Floor, North Annexe of Secretariat for information and necessary action.

He is requested to display it in the web-site of State Government.

FA - cum- Addl. Secretary to Government

Memo No. 12373 /W, Dated. 8.11.2013

Copy forwarded to the Director, Printing, Stationary & Publication, Orissa, Cuttack for information and necessary action.

He is requested to publish it in the next issue of Orissa Gazette.

FA - cum- Addl. Secretary to Government

Memo No. 12374 /W, Dated. 8.11.2013

Copy forwarded to A/C-I Section / A/C-II Section / Road Section / Plan Section / Building Section / Budget Section / N.Hs. Section / FC & AA Section / PPP Cell / EAP Cell, Works Department for information and necessary action.

FA - cum- Addl. Secretary to Government

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EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

Annexure- I

1) **Amendment to Para-3.4.16 (a) (vii) of OPWD Code, Vol-I by substitution**

Note- (vii) - For the purpose of estimate, the approved quarry lead is to be provided judiciously. Engineers in charge would be responsible for ensuring the quality of the materials supplied. The contractors would, however, be responsible for procurement of materials from authorised 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.

Annexure- II

2) **Amendment to Para-3.5.14 Note-I of OPWD Code, Vol-I by inclusion**

Note-I- If L1 bidder does not turn up for agreement after finalization of the tender, then he shall be debarred from participation in bidding for three years and action will be taken to blacklist the contractor. In that case, the L2 bidder, if fulfils, other required criteria would be called for drawing agreement for execution of work subject to the condition that L2 bidder negotiates at par with the rate quoted by the L1 bidder otherwise the tender will be cancelled .In case a contractor is black listed, it will be widely publicised and intimated to all departments of Government and also to Govt. of India agencies working in the state.

Annexure- III

3) **Amendment to Appendix- IX ,Clause-36 of OPWD Code, Vol-II by inclusion**

Clause No- 36- If the rate quoted by the bidder is less than 15% of the tendered amount, then such a bid shall be rejected and the tender shall be finalized basing on merits of rest bids. But if more than one bid is quoted at 14.99% (Decimals up to two numbers will be taken for all practical purposes) less than the estimated cost, the tender accepting authority will finalize the tender through a transparent lottery system, where all bidders/their authorised representatives, the concerned Executive Engineer and DAO will remain present.

DELETED

CONTRACTOR

EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

Annexure- IV

4) (A) Amendment to Para-3.5.5 (V) Note-II of OPWD Code, Vol-I by substitution

Note- (II) - When the bid amount is up to 10% less than the estimated cost, no additional performance security is required to be deposited. When the bid amount is less than the estimated cost by more than 10% and within 15%, in such an event, the successful bidder will deposit the additional performance security to the extent of 1.5 times of the differential cost of the bid amount and 5% of the estimated cost.

DELETED

(B)- Amendment to Para-3.5.5 (V) Note-III of OPWD Code, Vol-I by inclusion –

Note-III- For availing incentive clause in any project which is completed before the stipulated date of completion, subject to other stipulations it is mandatory on the part of the concerned Executive Engineer to report the actual date of completion of the project as soon as possible through fax or e-mail so that the report is received within 7 days of such completion by the concerned SE,CE & the Administrative Department. The Incentive for timely completion should be on a graduated scale of one percent to 10 percent of the contract value. Assessment of incentives may be worked out for earlier completion of work in all respect in the following scale.

DELETED

Before 30% of contract period =10% of Contract Value
Before 20 to30% of contract period=7.5% of Contract Value
Before 10 to 20% of contract period=5% of Contract Value
Before 5 to 10% of contract period=2.5% of Contract Value
Before 5% of contract period=1% of Contract Value

Annexure- V

5) Amendment to Para-3.2.8 Note-II of OPWD Code, Vol-I by inclusion

Note-II- In case of tender accepted below schedule of rate , the tender amount excluding centages shall be treated as sanctioned amount and allotment will be limited to that extent .Any deviation in scope of work affecting the agreement amount in such an agreement will be governed by the relevant provisions of OPWD Code.

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EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

Annexure- VI

6) **Amendment to Appendix- XXX ,(Bills) Clause 21 of OPWD Code, Vol-II & to the Clause-6 of F2 contract**

Bills- Clause -21- For works above values Rs 5.00 lakh in civil works and work value above Rs 1.00 lakh in electrical/PH works the J.E.s & A.E.s will be required to submit bill for each on going work on 20th or next working day of every month to the concerned EE. The E.E. on receipt of the bill will take steps for payment of the same by 30th or the next working day during the month.The E.E. in charge of the Division will furnish a certificate to the chief engineer with copy to the concerned SE that the bills for all on going months have been paid failing action will be initiated against the erring officer."

Annexure- VII

7) **Amendment to Para-3.5.18 Note-VIII of OPWD Code, Vol-I**

Note-VIII- Before acceptance of tender, the successful bidder will be required to submit a work programme and milestone basing on the financial achievement 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.

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EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

CHIEF ENGINEER, DRAINAGE
DIARY
No. 4187
CUTTACK 9/9/14

GOVERNMENT OF ODISHA
DEPARTMENT OF WATER RESOURCES

IIM-35/2014, No. 20444 /WR., Dated. 31/IX/14

2464
24.9.14

From
Sri N. R. Swain,
FA-Cum-Joint Secretary to Govt.

To
The Chief Engineer,
Drainage, Cuttack.

Sub:- Clarification in connection with bid quoted 15% less over the amount put to tender.

Ref:- DOWR letter No.14238 dated 12-6-2014 and your letter No.4319 dated 28-7-2014.

Sir,

With reference to the subject and letter cited above I am directed say that the matter was discussed in the codes revision committee meeting held on 3-5-2014 and 23-8-2014. The Chairman of the Committee clarified that bid quoted up to 14.99% less over the amount put to tender only shall be accepted.

In view of the above, you are directed to proceed as per the exact wording and meaning that comes out from the amended clause-36 of Appx-IX of OPWD code vol-II.

Yours faithfully,

03/09/14
FA-Cum-Joint Secretary

Memo No 4952 /dt 10/09/14
DW-I-M-16/14

Copy forwarded to All S.Es/E.Es Under this organisation for information and necessary action.

10/09
A.C.E, Drainage

CONTRACTOR

EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

Government of Odisha
Works Department
******

Office Memorandum

File No.07556900052014 - 16 /W, dated, 01/01/2015

Sub: - Acceptance of Single Tender.

After careful consideration Government have been pleased to make following modification to Notes- (iii) of Para-3.5.18 of O.P.W.D. Code, Volume-I & Rule-29 of Appendix-IX of O.P.W.D. Code, Volume-II for Acceptance of Single Tender in response to a Notice Inviting Tender.

Notes- (iii) of Para-3.5.18 – 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.

Rule-29 of Appendix-IX – when in response to a notice calling for tenders, only a single tender is received in the first time, the tender shall be cancelled without opening of the bid and fresh tender be invited publicly. If single tender is received, even after retendering then the approval of the next higher authority should be obtained, if the tender is otherwise in order and acceptable.

1. This shall take effect from the date of issue of this Office Memorandum.
2. This has been concurred in by the Finance Department vide their U.O.R. No.254-WF-I Dt.13.11.2014.

EIC - cum- Secretary to Government

Memo No. 17 /W, dated, 01/01/2015

Copy forwarded to P. S. to Hon'ble Chief Minister, Odisha for information and necessary action.

FA - cum- Addl. Secretary to Government

Memo NO 434 /W DW-I-M-16/15 dt 27/01/15 (P.T.O.)

Copy forwarded to all SE's & EE's under this Organisation Estimating Branch & T.O for information and necessary action.

ACE Drainage, Bh.

CONTRACTOR

EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

GOVERNMENT OF ODISHA
WORKS DEPARTMENT

OFFICE MEMORANDUM

No. 07554600032022- 1739 /W., Dated. 3-2-2023

Sub: Codal/ Contractual provisions regarding Price Adjustment in Works Contract

Codal/Contractual provisions regarding Price Adjustment in Works Contract was under active consideration of Government for some time past. After careful consideration, Government was pleased to make the codal/ contractual provisions regarding Price Adjustment clause due to increase or decrease in rate and price of Labour, Materials, Fuels and Lubricants and Plant and Machineries Spare Components vide Works Department O M No. 15847/W Dtd. 19.11.2019.

2. Now, in continuation of Works Department O M No. 15847/W dtd. 19.11.2019, Government have been pleased to make the following provisions in place of existing provision relating to "Schedule of Adjustment Data under Appendix to Bid"

[For all works, adjustment factor for Labour and POL shall be considered at the rate of 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. The cases where the original technically sanctioned estimate gets revised, the technical sanction to the revised estimate will be obtained from the competent authority as provided under Para 3.11.2 (b) of OPWD Code, Volume-I. Based on the revised technically sanctioned estimate, the Labour & the POL component shall be given the weightage of 5% each as provided in O M No.15847/W dated 19.11.2019 of Works Department and the weightage of 90% on steel, cement, bitumen, pipes, other materials and plant and machinery spare component shall be given as per the technically sanctioned revised estimate excluding the extra items. The revised weightage of "**Schedule of Adjustment Data**" based on revised technically sanctioned estimate shall be included as an **Addendum** to the agreement. The technical sanctioning authority shall be the competent authority for this purpose.]

This has been concurred in by Finance Department vide their OSWAS File No. FIN-WF1-MISC-0033-2022.

By order of the Governor

(Vir Vikram Yadav, IAS)
Principal Secretary to Government

Scanned by TapScanner

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EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

GOVERNMENT OF ODISHA

WORKS DEPARTMENT

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OFFICE MEMORANDUM

No. 07764600022025 17941 **/W., Bhubaneswar Dt.** 8.10.26

Sub:- Amendment of Codal & Contractual Provisions.

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 of 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 by 0.2% 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 (-)20% but not below (-)30%, 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% x (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 to perform 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 Department O.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**.

By order of the Governor

Principal Secretary to Government

Memo No. 17942 /W, dated 8.10.26

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

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

8/10/26.

EIC-cum-Special Secretary to Government

Memo No. 17943 /W., Dt. 8.10.26

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

EIC-cum-Special Secretary to Government

Memo No. 17944 /W., Dt. 8.10.26

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

EIC-cum-Special Secretary to Government

Memo No. 17945 /W., Dt. 8.10.26

Copy forwarded to the OSD to the Chief Secretary, Odisha, for the kind information of the Chief Secretary, Odisha.

EIC-cum-Special Secretary to Government

Memo No. 17946 /W., Dt. 8.10.26

Copy forwarded to Sr. P.S. to the DC-cum-ACS, Odisha, for the kind information of the DC-cum-ACS, Odisha.

EIC-cum-Special Secretary to Government

Memo No. 17947 /W., Dt. 8.10.26

Copy forwarded to Principal Accountant General (A&E), Odisha, Bhubaneswar/ Principal Accountant General (E & SR Audit), Odisha, Puri Branch, Puri for kind information and necessary action.

EIC-cum-Special Secretary to Government

Memo No. 17948 /W., Dt. 8.10.26

Copy forwarded to the P.S. to the Additional Chief Secretary, Home Department/ the P.S. to the Additional Chief Secretary, GA&PG Department / P.S. to the Additional Chief Secretary, Parliamentary Affairs Department /P.S. to the Additional Chief Secretary, Industries Department / P.S. to the Additional Chief Secretary, Steel & Mines Department / P.S. to the Additional Chief Secretary, Revenue & Disaster Management Department / P.S. to the Additional Chief Secretary, H & UD Department / P.S. to the Additional Chief Secretary, Energy Department for kind information of ACS, Home Department/ ACS, GA&PG Department /ACS, Parliamentary Affairs Department/ ACS, Industries Department /ACS, Steel & Mines Department/ ACS, Revenue & Disaster Management Department / ACS, H & UD Department/ ACS, Energy Department.

EIC-cum-Special Secretary to Government

Memo No. 17949 /W., Dt. 8.10.26

Copy forwarded to the P.S. to the Principal Secretary to Govt., Finance/Works/ Law/ C&T(T) /Forest, Environment and Climate Change Department / Department of Water Resources for kind information of the Principal Secretary, Finance/ Works/ Law/ C&T(T) / Department of Water Resources, respectively.

EIC-cum-Special Secretary to Government

Memo No. 17950 /W., Dt. 8.10.26

Copy forwarded to the DG, (RD&SS), MoRT&H, New Delhi for kind information.

EIC-cum-Special Secretary to Government

Memo No. 17951 /W., Dt. 8.10.26

Copy forwarded to the P.S. to the Commissioner-cum- Secretary to Govt., RD /PR&DW/ Tourism/ Department of Mission Shakti for kind information of the Commissioner-cum-Secretary, RD /PR&DW/ Tourism/ / Department of Mission Shakti, respectively.

EIC-cum-Special Secretary to Government

Memo No. 17952 /W., Dt. 8.10.26

Copy forwarded to all Departments for information and necessary action.

EIC-cum-Special Secretary to Government

Memo No. 17953 /W., Dt. 8.10.26

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

EIC-cum-Special Secretary to Government

Memo No. 17954 /W., Dt. 8.10.26

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

EIC-cum-Special Secretary to Government

Memo No. 17955 /W., Dt. 8.10.26

Copy forwarded to the FA-cum-Special Secretary to Government, Works Department for kind information and necessary action.

EIC-cum-Special Secretary to Government

Memo No. 17956 /W., Dt. 8.10.26

Copy forwarded to EIC(Civil-cum-Roads), Odisha /EIC, Water Resources, Odisha/ EIC, Rural Works, Odisha/ EIC (PH), H&UD Department/ EIC (RWSS) PR&DW Department/ EIC, DPQ, Odisha/ EIC, NHs, Odisha/ EIC-cum-Managing Director, OB & CC Ltd., Bhubaneswar, Odisha/ Chief Engineer, Roads-I & II, Odisha / Chief Engineer, Buildings-I & II, Odisha / Chief Engineer, NHs, Odisha/ Chief Engineer, Bridges, Odisha / Chief Engineer, P&IP, Odisha / Chief Engineer, RD &QP, Odisha /Chief Engineer, RW- I & II, Odisha / Chief Engineer, PH (Urban), Odisha / Chief Engineer, Electricity, Odisha / Managing Director, OCC Ltd., Bhubaneswar/ all State PSUs for kind information and necessary action.

EIC-cum-Special Secretary to Government

Memo No. 17957 /W., Dt. 8.10.26

Copy forwarded to DDG & State Informatics Officer. National Informatics Centre, Odisha State Centre, Bhubaneswar, Email- sio-ori@nic.in for information and necessary action.

EIC-cum-Special Secretary to Government

Memo No. 17958 /W., Dt. 8.10.26

Copy forwarded to the Chief Executive Officer (Administrative), Odisha Computer Application Centre (OCAC), Bhubaneswar, for information and necessary action.

EIC-cum-Special Secretary to Government

Memo No. 17959 /W., Dt. 8.10.26

Copy forwarded to all EICs/CEs/CCEs/ SEs/ EEs of the Works Department for kind information and necessary action.

EIC-cum-Special Secretary to Government

Memo No. 17960 /W., Dt. 8.10.26

Copy forwarded to Roads Section/ A/C-I Section /A/C-II Section/ Plan Section / Building Section / Budget Section / N.H. Section / FC & AA/FA Section, Works Department / OSWAS Control Room for information and necessary action.

EIC-cum-Special Secretary to Government

Office of the Engineer-in-Chief,
Water Resources, Odisha, Secha Sadan, Bhubaneswar.

Lr. No. Proc-CIRCULAR-01/2021(Part-I) 33525 Date: 15.10.26

From

Er. Niranjan Rout,
Engineer-in-Chief, Procurement.

To

The CE & BM, Mahanadi Kathajodi System, BBSR/ CE & BM, MBBS, Chandikhole/ CE & BM, Mahanadi Basin, Burla/ CE & BM, S&B Basin Laxmiposi/ CE & BM, Tel Basin, Bhawanipatana/ CE & BM, RBVN, Berhampur/ CE & BM, Indravati Kolab Basin, Bariniput, Koraput/ CE & BM, Baitarani Basin, Keonjhar/ CE & BM, Brahmani Basin, Samal/ CE, RRIP Dhenkanal/ CE, Upper Indravati Irrigation Project, Mukhiguda/ CE, Mechanical, BBSR/ CE, Survey & Investigation, BBSR/ CE, JICA Project, Sukinda/ CE, Megalift, BBSR/ CE, Drainage, Cuttack/ CE, Minor Irrigation, Bhubaneswar/ CE, Dam safety, BBSR/ CE, HH, GIS & CEM, BBSR/ CE, Quality Assurance, BBSR/ CCE, Lower Indra Irrigation Project, Nuapada/ CCE, Anandapur Barrage Project, Salapada/ CCE, Deo Irrigation Project, Karanjia/ CCE, Kanupur Irrigation Project, Basudevpur/ CCE, Potteru Irrigation Project, Balimela/ CCE, Lower Suktel Irrigation Project, Bolangir/ CCE, Brutanga & Hadua Irrigation Project, Daspalla.

Sub: Initiation of Appropriate Action against Bidders Quoting Abnormally Low Bids–regarding.

Sir,

With reference to the subject cited above, it has been observed that certain bidders quote abnormally low rates for various works but fail to furnish satisfactory justification and detailed analysis in support of their quoted bids. Consequently, such bids cannot be processed further, resulting in cancellation of tenders, avoidable delays in the tendering process and financial implications for the Department.

Further, it is observed that no appropriate action has been initiated against such bidders and no information in this regard has been furnished by your good office.

In view of the above, you are requested to initiate appropriate action against such bidders and submit proposals, wherever warranted, to the competent authority for consideration and necessary action.

Yours faithfully,

15.10.2026

Engineer-in-Chief, Procurement.

Memo No. 33526 / Dated. 15.10.26

Copy submitted to the Principal Secretary to Govt., DoWR, Rajiv Bhawan, BBSR for kind information.

15/10/2026

Engineer-in-Chief, Procurement.

CONTRACTOR

EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

SECTION – 6

TECHNICAL SPECIFICATION

1. GENERAL INFORMATION

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DRAINAGE DIVISION, KHORDHA

1.1 Description of work to be executed

In order to overcome the drainage problem, the following works are proposed **"Improvement of Dahuka Drainage Channel under Nayagarh Block of Nayagarh Constituency".**

1.2 Location of Work site:

The site is located in **Nayagada Block of Nayagada District**.

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 average annual rainfall in the area is 1488 mm. Mean monthly rainfall during the rainy season varies from 166 to 322 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 42 ^{0}C and the minimum temperature is 10.6 ^{0}C. Relative humidity generally varies from 62 to 85%.

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 Post, Telegraph and Telephones

2.1 Source of fund D.I.P.

1.0 GENERAL SPECIFICATION

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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. A statement of relevant BIS is applicable to this contest is enclosed.

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
3.	Portland Slag Cement. (Third revision)	455-1976
4.	Method for physical tests for hydraulic cement (Reaffirmed 1980).	4031-1968
5.	Method of Chemical analysis for hydraulic cement (First revision).	4032-1985
6.	Rapid hardening Portland cement.	8041-1978
7.	Hydrophobic Portland cement.	8043-1978
8.	High Strength ordinary Portland cement.	8112-1976
(II)	**AGGREGATES**	
1.	Specification for coarse and fine Aggregates from natural source for concrete.	383-1970
2.	Specification for sand for masonry mortars.	2116-1965
3.	Method of Tests for aggregates for concrete.	2385-1969 (Part I to Part VIV)
4.	Standard sand for testing of cement (First revision) with amendment 1 and 2 Reaffirmed 1980.	650-1966
5.	Methods for sampling of aggregates for concrete.	2430 -1969
6.	Method of test for determining aggregates impact value of soft coarse aggregates.	5640-1970
(III)	**STEEL**	
1.	Code of practice for bending and fixing of bars.	2502-1963
2.	Specification for cold worked steel deformed bars for concrete reinforcement.	786-1979
3.	Code of practice for welding of MS Bars used for reinforced concrete construction.	2751-1966
4.	Code for practice for use of Metal are welding for general construction of mild steel.	818-1989
5.	Deformed bars for concrete reinforcement hot rolled mild steel and medium tensile steel (Revised).	1139-1966
6.	Recommendations for detailing of reinforcement in Reinforced concreted works.	5525-1969

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7.	Specification for Mild Steel and medium tensile steel Bars for Concrete reinforcement.	432-1966 (Part I)
8.	Code for practice for safety and health requirement in Electric and Gas welding and cutting operations.	818-1968
9.	Code for practice for fire precautions in welding and cutting operation.	3016-1965
10.	Measurement of building and Civil Engineering works, method part VIII steel work and iron work.	1200-1974 (Part VIII)
11.	Code of procedure for manual or metal ARC and welding of Mild steel.	823-1964
12.	Specification for filler rods and wires for gas welding.	1278-1972
13.	Recommendations for welding cold worked steel bars for Reinforced concrete construction.	9417-1979
14.	Hard drawn steel wire fabrics for concrete reinforcement.	1566-1982
(IV)	**CONCRETE**	
1.	Method of Measurement of building and Civil Engineer. works Part-II cement concrete works.	1200-1968 (Part-II)
2.	Code of practice for plain and reinforced concrete.	456-2000
3.	Specification for pre cast concrete coping blocks.	5751-1969
4.	Methods of tests for strength of concrete.	516-1959
5.	Code of practice for laying in situ cement concrete lining on drains.	3873-1993
6.	Specification for Admixtures for concrete.	9103-1979
7.	Method of Test for Autoclaved cellular concrete products.	6441-1972-73 (Part-I to IX)
8.	Method of Sampling and Analysis of concrete.	1199-1959
9.	Specification of Batch type concrete mixtures.	1791-1963
10.	General requirements for Concrete Vibrators immersion type.	2505-1980
11.	Specification for concrete vibrating tables.	2514-1963
12.	Method of test for permeability of cement mortar & concrete.	3085-1965
13.	Specification for fly ash for use as pozzolana as admixture for Concrete.	3812-1981 (Part-II)
14.	Specification for Portable swing weigh batch for concrete (single and double bucket type). 2722-1964	
15.	Code of practice for installation of joints in concrete pavements.	6509-1972
16.	Code of practice for general construction of plain and reinforced concrete for dams and other massive structures.	457-1957

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17.	General requirement for concrete vibrator screed board type (First revision).	2506-1985
18.	Code of practice for concrete structures for shortage of liquids. (Part-1 to 4)	3370
19.	Code of practice for use of immersion vibrator for consolidating concrete (First revision).	3558-1983
20.	Method for testing performance of batch type concrete mixer.	4634-1968
21.	From vibrators for concrete.	4656-1968
22.	Concrete batching and mixing plant.	4925-1968
23.	Ready mixed concrete (First revision).	4926-1976
24.	Code of practice for sealing joints in concrete lining on drains.	5256-1992
25.	Vibrating plate compactor.	5889-1970
26.	Concrete transit mixer and agitator.	5892-1970
27.	Concrete pavers.	7245-1974
28.	Concrete slump test apparatus.	7320-1974
29.	Method of making curing and determining compressive strength of accelerated cured concrete test specimen.	9013-1978

(V) <u>EARTH WORK</u>

1.	Method of Measurement of building and Civil Engineering Works Part I, Earthwork.	1200-1969 (Part-I)
2.	Safety code for piling and other deep foundations.	5121-1969
3.	Code of practice for Design installation, observation and Maintenance of uplift pressure pipes for Hydraulic structures on permeable foundation.	6532-1972
4.	Safety code for excavation works.	3764-1966
5.	Code of practice for protection of slope for Reservoir embankment.	8237-1985
6.	Code of practice for earth work on drains.	4701-1982
7.	Guidelines for lining of drains in expansive soils.	9451-19
8.	Method of test for soils Part-II Determination of water concrete.	2720-1973 (Part-II)
9.	Method of test for soils Determination of water content dry density relation using light compaction.	2720-1974 (Part-VII)
10.	Method of test for soils determination of dry density of soils in place by the sand replacement method.	2720-1974 (Part-XXVIII)
11.	Method of test for soils determination of dry density of soils in place by the core cutter method.	2720-1975 (Part-XXIX)
12.	Classification and identification of soils for general.	1498-1970

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13.	Safety code for blasting and related drilling operation with Amendment No. I (Reaffirmed 1978).	4081-1967
14.	Portable Pneumatic drilling machine (First revision).	5441-1986
15.	General requirement for black hold drilling rigs.	7209-1974
16.	Safety code for working with construction machinery.	7293-1974
17.	Code of practice for stability analysis of earth dams.	7894-1975
18.	Guidelines for design of under seepage control measures for earth and rock fill dams.	8414-1977
19.	Filtration media sand and gravel.	8419-1977 (Part-I)
20.	Guidelines for design of large earth and rock fill dams.	8826-1978
21.	Under drainage arrangements of lined drains.	4558-1995
22.	Precast cement concrete stables for drain lining.	3868-1966
23.	Methods of tests of soils.	2720 (Part-1 to X)
24.	Ammonium nitrate for explosive.	4668-1967
25.	Method of test for commercial blasting explosives and accessories.	6609 (Part-1 to V)
26.	Detonators.	7632-1975
27.	Method of load test on soils (Second revision).	1888-1982
28.	Method for standard penetration test for soil (first revision).	2131-1981
29.	Glossing of terms and symbolic relating to soil engineering.	2809-1972
30.	Method of sampling and preparation of stabilized soils for testing.	4332 (Part-I of 1967)
31.	Test in over burden.	5529 (Part-1 of 1969)

(VI) <u>OTHER SUBJECTS</u>

1.	Safety code for scaffolds and ladders part I scaffolds.	3696-1966
2.	Safety code for scaffolds and ladders Part 2 ladders.	3696-1966 (Part-II)
3.	Recommendation s on stacking and storage of construction materials at site.	4082-1977
4.	Plywood for general purposes (Second revision amendment 1 to 3).	303-1975
5.	Test Sieves.	460-1985
6.	Code practice for under drainage of lined drains (2nd revision).	4558-1995
7.	Code of for practice for in situ permeability test.	5529(Part-1 & 2)
8.	Structural steel (Standard quality) (with amendment No.1 to 3).	IS: 226-1975
9.	Hard drawn steel wires (Third revision).	IS: 432-1982 (Part-II)
10.	Concrete pipes (with and without reinforcement) (2nd revision).	IS: 458-1971

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11.	Code of practice for laying of concrete pipes.	IS: 783-1959
12.	Specification for mild steel tubes, tubular and other wrought Steel fittings Part-I mild steel tubes (fourth revision) (With Amendments No. 1 to 5).	IS:1239-1979
13.	Hard drawn steel wire fabric for concrete reinforcement (Second revision)..	IS: 1566-1982
14.	Asbestos cement pressure pipe (Second revision).	IS: 1592-1980
15.	Preformed filler for expansion test in concrete payment and structures (non extruding and resilient type).	IS: 1838-1961
16.	Cast iron detachable joints for use with asbestos cement pressure pipes.	IS:8794-1978
17.	Structural steel (Fusion welding quality) (Second revision).	IS: 2062-1980
18.	Code of practice for laying of cast iron pipe (With amendment No. I).	IS: 3114-1965
19.	Methods of testing for concrete pipes.	IS 3597-1966
20.	Rubber sealing rings for gas mains water mains and sewers.	IS: 5382-1969
21.	Centrifugally cast (spun) iron low pressure pipes for water gas and sewage (First revision).	IS: 6163-1978
22.	Code of practice for laying of asbestos cement pressure pipes.	IS: 6530-1972
23.	Cast iron detachable joints for use with asbestos cement pressure pipes.	IS: 8794-1978
24.	Other Publications: Ministry of shipping and transport Specification for Road and Bridge works No. 7900	

(VII) <u>STONE PITCHING AND LAUNCHING APRON</u>

1.	Methods of test for determination of strength properties of natural building stone.	IS: 1121-1975 (Part-1 to 4)
2.	Method of test determination of true specific gravity of natural building stone (First revision).	IS: 1122-1974
3.	Method of identification of natural building stone (Ist Revision).	IS: 1123-1975
4.	Method of test for determination of water absorption apparent specific gravity and porosity of natural building stone (Ist revision).	IS: 1124-1974
5.	Method of test for determination of weathering of natural building stones (First revision).	IS: 1125-1974
6.	Method of test for determination of durability of natural building stone (First revision).	IS: 1126-1974
7.	Recommendations for dimensions and workmanship of natural	IS: 1127-1970

	building stones for masonry work (First revision).	
8.	Recommendation of dressing of natural building stone (1st. revision).	IS: 1129-1972
9.	Sand for plaster (First revision).	IS: 1542-1977
10.	Code of practice for construction of stone masonry.	IS: 1597-1967
11.	Rubble stone masonry.	IS: 1597-1967 (Part 1to II)
12.	Method for determination of resistance to wear by abrasion of natural building stones (First revision).	IS: 1706-1972

(VIII) <u>ROAD WORK</u>

1.	Paving bitumen (revised) (with Amendment No.1).	IS: 73-1961
2.	Cut back bitumen (Revised).	IS: 217-1982
3.	Glossary of terms relating to bitumen and tar (2nd revision).	IS:454-1961
4.	Digboi type cut back bitumen (revised).	IS: 454-1961
5.	Distributors for hot tar and bitumen (first revision).	IS: 2093-1974
6.	Heaters for tar and bitumen (first revision).	IS: 2094-1974
7.	Hot asphalt mixing plants (with amendment No.1).	IS: 3066-1965
8.	Bitumen emulsion for roads (anionic type).	IS: 3117-1965
9.	Asphalt pavers' finisher (first revision) (with amendment No.1).	IS: 3251-1965
10.	Bitumen drums.	IS: 3575-1977
11.	Recommendations on stacking and storage of construction materials at site (first revision).	IS: 4082-1977
12.	Bitumen mastic for bridge decking and roads.	IS: 5317-1969
13.	Method of test for determining aggregates impact value of soft coarse aggregates.	IS: 5640-1970
14.	Safety code for construction involving use of hot bituminous materials.	IS: 5916-1970
15.	Method of test for determination of stripping value of road aggregates.	IS: 6241-1971
16.	Coarse aggregates for water bound macadam (first revision)	IS: 6579-1981
17.	Adhesive, bitumen emulsion.	IS: 7393-1974
18.	Code of practice for road gullies.	IS: 774-1975
19.	Bitumen emulsion for roads (Cationic type).	IS: 8887-1976
20.	Methods for testing tar and bituminous materials.	IS: 9381-1976
21.	Method for testing tar and bituminous materials Determination of effect of heat and air by thin film over test.	IS: 9382-1979

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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.

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 Executive Engineer will 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 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 Construction of coffer dam, dewatering of any water, that may accumulate in the areas required for carrying out the items under schedule of quantities, includes the initial dewatering of the pond formed after the formation of coffer dam or any type of cross bound and all seepage that may accumulate in the area before of during construction.

2.3.7 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 on the 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, Nayagada.**

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/ Deputy Executive Engineer of the Department as well as staff of A.R.O./ Superintending Engineer of **Quality Control Division, Nayagada** 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 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 Executive Engineer of **Quality Control Division, Nayagada**, 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, Khordha**. The contractor must however satisfy himself those materials as per required specifications and quantity is 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 Organization or higher authorities if required.

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 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 pillar/stone 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 from 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 a perfectly 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 to include 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 damage 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 15m 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 7.50 M.

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 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 rehandling 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 cannot 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 Executive 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 Executive 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 cannot 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. 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 resorted to till completion of work. No separate payment shall be made for dewatering by pumping or by any other method.

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. This cross section 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 that 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 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 pumping and dewatering, 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 bottom 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 DRILLING AND BLASTING:

4.10.1. GENERAL

Blasting where required shall be permitted only when proper precaution have been taken for the protection of persons and property in accordance with I.S. 4081 – 1967 (Indian Standard Specification for safety Code for blasting and related drilling operations). While carrying out excavation, adequate precautions in accordance with I.S. 3761-1966 (Indian Standard Specifications for safety Code for excavation work) shall be taken.

All contractors who execute blasting operations in connection with works for purpose of quarrying stones, road construction, excavating foundations, well sinking or for any other purpose shall observe the rules and precautions as per standard norms and any further additional instructions which may be given by the Engineer-in-charge.

4.10.2. PERSONNEL:

Excavation by blasting shall be permitted only under the personal supervision of competent and licensed persons and trained workmen employed by the contractor at his cost. All supervisors and workmen in charge of work of handling, storage and blasting shall be adequately insured by the contractor.

The storage of explosives shall be in charge of a very reliable person of the contractor men. The contractor shall make sure that his supervisor workmen are fully conversant with all the rules to be observed in storing, handling and use of explosives. It shall be assured that the supervisor in-charge is thoroughly acquainted with the details of the handling and the blasting operations.

4.10.3. STORAGE OF EXPLOSIVE:

The contractor shall build at his cost a magazine for storing the explosives and portable magazine for carrying the explosives to work spot from the magazine or one storage magazine to be built near the site of the work on which explosives are to be used.

The explosives, detonators, and fuse coils shall each be separately stored. All required relevant records for above purpose shall be maintained by the contractor as per approved Government norms at the cost of contractor and as directed by the Engineer-in-charge.

4.10.4 TRANSPORT AND STORING OF EXPLOSIVE:

For the transport of the explosive and detonators between the store and site, closed and strong containers made of soft materials such as timber, zinc, copper, leather shall be used. Explosive and detonators shall be carried in separate boxes. For the conveyance primer special container shall be used.

The boxes and containers used shall be kept closed. Explosives shall be stored and used chronologically to ensure the one received earlier being used first. A make3 up house shall be provided at each working place in which cartridge will be mad up by competent and licensed men as required for the work. The makeup house shall be separated from to other buildings. Only electric storage battery lamps will be used in this house.

No smoking shall be allowed in the makeup house or generally while dealing with explosives.

No child under 16 years of age and person who is in a state of introduction, shall be employed on the loading, unloading or transport of explosive or be employed in or allowed to enter in premises where explosives to are handled and / or stored.

4.10.5. DISPOSAL OF DETERIORATED EXPLOSIVES:

All deteriorated explosives shall be disposed off in an approved manner the quantity of the deteriorated explosives to be disp9osed off shall be intimated to the Engineer prior to its disposal.

4.10.6 PREPARATION OF PRIMERS:

The primers shall not be prepared near open flames or fire. The work preparation of primers shall always be entrusted to the same personnel. Primers shall be used as early as possible after they are ready.

4.10.7 CHARGING OF HOLES:

The work of charging of holes shall not commence before all the drilling work at them site is completed and the contractor's supervision be satisfied himself to the effect by actual inspection. While charging, open lamps shall be kept away. For charging with powered explosives, a naked flame shall not be allowed. Only wooden tamping rods, without any kind of metal on the road shall be allowed to be used. The tamping rods shall have cylindrical ends. Bore hole must be of such size that the cartridges can easily pass down them; they shall not be however be too big.

Only one cartridge shall be inserted at a time and gently pressed into the hole with the tamping roads. The sand, clay or other tamping materials used for filling the holes completely shall not be tampered too hard.

4.10.8. BLASTING:

Blasting shall be carried out during fixed hours of the day which shall have the approval of the Engineer-in-charge. The hours once fixed shall not be altered without prior, written approval of the Engineer-in-charge.

The site of blasting operations shall be prominently demarcated by red danger flags. The order of fire shall be given only by the Contractor's supervision in charge of the work and his order shall be given by only after giving the warning signal three times, so as to enable all the labour, watchmen, etc to reach safe shelters.

All the roads and foot paths leading to the blasting area shall be watched. Road closing barriers should be provided to close the traffic on these roads at least 400 meters away when the firing is to take place.

In special cases, suitable extra precautions shall be taken. The Engineer-in-charge may however permit blasting for underground excavation, without restriction of fixed time, provided that he is satisfied that proper precaution are taken to give sufficient warning t all

concerned and that work of other agencies on the site is not hampered. For lighting the fuse, a lamp with strong flame such as carbide lamp shall be used.

The Contractor's Supervisor shall watch the required time for the firing of the fuse and shall see that all the workmen are under safe shelters in good time.

4.10.9 ELECTRICAL FIRING:

Only the contractor's Supervisor in charge shall posses key of the exploder and short firing accessories and he shall keep it always with himself, special apparatus shall be used as a source of current for the blasting operations. Power lines shall not be tapped for the purpose.

The detonators shall be checked before use. For blast in series only detonators of the same manufacture of the same group of electrical resistance shall be used.

Such of electrical lines as could constitute danger for the work of charging shall be removed from the site.

The firing cables shall have a proper, insulating cover so as to avoid short circuiting due to contract with water, metallic parts of rock.

The use of the earth as a return line shall not be permitted.

The firing cables shall be connected to source of current only when nobody is in the area of blasting. Before, firing, the circuit shall be checked by a suitable apparatus. After firing whether with or without an actual blast the contact between the firing cables and the source of current shall be cutoff before any one is allowed to leave the shelter.

During storms charging with electrical detonators shall be suspended. The charges already placed in the holes shall be blasted as quickly as possible but taking all the safety precautions and giving necessary warning signals. If this is not possible the sites shall be abandoned till the storm has passed.

4.10.10 PREACAUTIONS AFTER BLASTING:

After the blast, the contractor's supervisor must carefully, inspect the work and satisfy himself that all the charges have exploded. After the blast is taken place in underground works, workmen shall not be allowed to go to the place till all the toxic gases are evacuated from the face.

4.10.11 MISFIRES:

If it is suspected that part of the blast has failed to fire and delayed, sufficient time shall be allowed to elapse before entering the danger zone. When fuse and blasting caps are used a safe time should allow and then the contractor's supervisor alone shall leave the shelter to see the misfire.

None of the drillers are to work nearer this hole under one of the two following operations have been carried out by the supervisor.

Either (i) the supervisor should very carefully (when the tamping is of camp clay) extract the tamping with a wooden scraper or jet of water or compressed air (using pipe of soft materials and withdraw the fuse with the primer and detonator attached after which a fresh primer and detonator with fuse should be placed in this hole and fired out or (ii) the hole may be cleared of 300mm of capping and the direction then be ascertained by placing a stick in the hole. Another hole may be drilled at least 225mm away and parallel to it. This hole should then be charged and fired. The balance of the cartridge and detonator found in the muck shall be removed.

Before leaving this work, the contractor's supervisor should inform the supervisor of the relieving shift of any case of misfires and should point out the position with Red Cross denoting the same, also stating what action if any, he has taken in the matter. A register of misfires and their location and how they were dealt with shall be maintained by the contractor.

The contractor's supervisor should also at once report at the contractor's office all cases of misfires, the cause of the same and what steps were taken in connection there with.

The name of the day and night shift supervisors of the contractor must be noted daily in the contractor's office. If misfire has been found to be due to a defective detonator, or dynamite, the whole quantity of box from which the defective article was taken must be returned to the contractor's office for inspection, and shall be disposed off.

Blasting operation, when considered necessary shall be resorted to only with the written permission of the Engineer-in-charge. Prior inspection shall be carried out for the safety and stability of the public and property. Blasting operations in the proximity of overhead power lines, communication lines, utility lines or other structures shall not be carried on until the operator or the owner or both of such lines have been notified and precautionary measures deemed necessary have been taken.

Any damage to the neighboring buildings, properties, standing crops, and life due to blasting shall be made good by the contractor at his cost.

4.11 CONSTRUCTION / RAISING / STRENGTHENING OF EMBANKMENT

4.11.1 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

4.11.2 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.

4.11.3 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.

4.11.4 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.

4.11.5 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.

4.11.6 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 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.

4.11.7 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.

4.11.8 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.

4.11.9 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.

4.11.10. 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.

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, texure, 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 meter of relevant item in the bill of quantities.

5.2 COARSE AGGREGATES FOR CONCRETE:

5.2.1 GENERAL

For the purposes of these specifications, the term “Coarse Aggregate” designate clean well graded aggregates most of which is retained on 4.75 mm. I.S. Sieve and containing only so much finer materials as permitted for various types described under clause 2.2. of IS 383-1970 Coarse Aggregate for concrete shall consist of uncrushed stone, or crushed stone and partially uncrushed and crushed stone.

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

Coarse aggregates as delivered to the batching plant shall generally have uniform and stable moisture content. In case of variations, clause 9.2.3 of IS 456-2000 shall govern during batching.

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

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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.

5.2.2.1 LOS ANGLES ABRASION TEST.

The abrasion value of aggregates when tested in accordance with the method specified in IS 2386 (Part IV) using Los Angles machine shall not exceed 30% for Aggregates to be used in concrete for wearing surface and 50% for aggregates to be used in other concrete.

5.2.2.2 AGGREGATE CRUSHING STRENGTH TEST.

Aggregates crushing value, when determined in accordance with IS 2386 (Part IV) 1963 shall not exceed 45% for aggregates used for concrete other than wearing surface and 30% for wearing surfaces. As an alternative to the crushing strength test aggregates impact value shall be found out with the method specified in IS 2386 (Part IV) 1963. The aggregates impact value shall not exceed 45% by weight for aggregates used for concrete for other than wearing surfaces and 30% by weight for concrete for wearing surface such as runways roads and pavements.

5.2.2.3 SOUNDNESS TEST.

The coarse aggregates to be used for all concrete works shall pass a sodium or magnesium sulphate accelerated soundness test specified IS 2386 (Part V) 1963 and the average loss or weight after 5 cycles shall not exceed the limits specified in clause 3.6 of IS 383 – 1970.

5.2.2.4 SPECIFIC GRAVITY:

The coarse aggregates shall have specific gravity of 2.60 minimum.

5.2.2.5 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 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 course 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

5.4.1 Cement shall confirm to clause 4 of IS 456-2000 for the purpose of specifications cement used shall be any of the following with the prior approval of the Engineer-in-charge.

a. Ordinary or low heat Portland cement conforming to IS 269-1976.

b. Rapid hardening Portland cement conforming to IS 8041-1978.

c. Portland slag cement conforming to IS 455-1976.

d. Portland pozzolana cement conforming to is 1489-1976.

e. High strength ordinary Portland cement conforming to IS 8112-1976.

f. Hydrophobic cement conforming to IS 8043-1978.

The provisions of this paragraph apply to cement for use in cast in place concrete required under these specifications. Portland cement required for items such as concrete pipes, pre-cast concrete structural members and other precast concrete products for grout and mortar and for other items provided for under appropriate paragraph of these specifications covering items for which such Portland cement is required.

The contractor shall make his own arrangements for the procurement of cement to required specifications required for the work. Transportation from the place of supply to the batching plant shall be in weather tight rail cars, trucks, conveyors and other means which will protect the cement completely from exposure to moisture. Immediately upon receipt at the jobsite, bulk cement shall store in dry, weather tight, properly ventilated bins until the cement is batched. The bins shall be emptied and cleaned by the contractor when so directed by the Engineer-in-charge. However, the intervals between required cleaning will normally be not less than 6 months. Each other shipment of bagged cement shall be stored separately so that it may readily be distinguished from other shipment and shall be stored in a dry enclosed area protected from moisture. Storage of materials shall be as described in IS 4082-1977 (IS recommendation on staking and storage of construction materials at site) To prevent under aging of bagged cement after delivery. The contractor shall use bags of cement in the chronological order in which they were delivered to the job site. All storage facilities shall be subject to approval of the Engineer-in-charge.

5.4.2 ACCEPTANCE OF CEMENT.

Portland cement shall be supplied by the contractor according to clause 10.1 of IS 269-1976 of the following brands.

OCL, ACC, Ultratech, Ramco, Dalmia

5.4.3 ACCEPTANCE OF POZZOLANA:

Pozzolana added to the concrete as an admixture shall be sampled and tested as per IS 9103-1979

5.4.4 RECOVERY OF COST OF CEMENT IN WASTED CONCRETE ETC:

The cost of cement used in wasted concrete in replacement of damaged or defective concrete and extra concrete required as a result of over excavation intentionally performed by the contractor's shall be borne by the contractor himself. No extra payment shall be made to the contractors for such additional quantity.

5.5 ADMIXTURES:

The contractor shall use Air entraining admixtures as directed by the Engineer. Admixtures shall be of uniform consistency and quality and shall be maintained at the job site at uniform strength of solution. Admixtures shall be batched separately in liquid form in containers capable of measuring at one time the full quantity of each admixture required for each batch. Chemical admixtures which harm the quality and strength of concrete shall not be used in the concrete.

5.6 WATER:

The water used in making and curing of concrete mortar and grout shall be free from objectionably quantities of silt, organic matter, injurious amounts of oils, acids, salts and other impurities etc. as per IS specification No.456-2000.

The Engineer-in-charge will determine whether or not such quantities of impurities are objectionable.

Such determination will unusually be made by comparison of compressive strength water requirement, time of set and other properties of concrete made with distilled or very clean water and concrete made with the water proposed for use. Permissible limits for solids when tested in accordance with IS 3025-1964 shall be as tabulated below.

PERMISSIBLE LIMITS FOR SOLIDS IN WATER.

1. Organic Maximum permissible limit 200 mg. /ltr.
2. Inorganic 300 mg. /ltr.
3. Sulphate (as 504) 500 mg. /ltr.
4. Chlorides (as CL) 2000 mg. /ltr for plain concrete work and 1000 mg/ltr for RCC work.
5. Suspended matter 2000 mg. /ltr.

The PH value of water shall generally be not less than 6 (six)

If any water to be used in concrete mortar or grout is suspected by the Engineer-in-charge of exceeding the permissible limits for solids, samples, of water shall be obtained and tested by the Engineer-in-charge in accordance with IS 3025-1964

5.7 SAND FOR FILLING

5.7.1 GENERAL

The term sand is used to designate aggregate most of which passes 4.75 millimeter IS . Sieve and contains only so much coarser material as permitted in clause 4.3 of IS 383-1970. Sand shall be predominantly natural sand which may be supplemented with crushed sand to make up deficiencies in the natural sand grading.

All sand shall be furnished by the contractor from any approved sources specified in the contract. Sand as delivered to the batching plant shall have 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-in-charge according to weather conditions (IS 456-2000)

5.7.2 QUALITY:

The sand shall consist of clean, dense durable uncoated rock fragments as per IS 383-1979.Sand may be rejected if it fails to meet any of the following quality requirements.

(i) ORGANIC IMPURTIES IN SAND:

Colour no darker than the specified standard in clause 6.2.2. of IS 2386 Part II 1963 (Indian Standard method of test for aggregates of concrete Part II estimation of deleterious materials and organic impurities)

Sand shall be screened before use. If sand brought to site is not clean it must be washed clean in water. Fine draft sand or sea sand or sand containing saline impurities shall on no account to be used SODIUM SULPHATE TEST FOR SOUNDNESS.

The sand to be used shall pass Sodium or magnesium Sulphate accelerated test as specified in IS 2386(Part-V) 1963 for limiting loss on weight.

(ii) SPECIFIC GRAVITY:

The sand to be used shall have minimum specific gravity of 2.4.]

(iii) DELETERIOUS SUBSTANCE:

The amount of deleterious substances in sand shall not exceed maximum permissible limits prescribed in table 1 clause 3.2.1 of IS 383-1970 (Indian Standard Specification for coarse and fine aggregates form natural source for concrete) when tested in accordance with IS 2386-1963.

5.7.3 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

5.8 REINFORCEMENT BAR

5.8.1 The contractor shall make his own arrangement for procurement of steel of required specification of Steel Authority of India Limited for the work. Transportation from the place of supply to work site and all incidental charges will be borne by the contractor.
Reinforcing bars shall be placed in the concrete as shown in the drawings or as directed. For concrete drain lining the reinforcement rods as provided for in the drawing shall be placed.
For anchoring the concrete drain lining to the hard rock provision of anchor road is made in the drawing and contractor shall place these anchor rods to the spacing and depth shown in the drawings.
Testing charge of Reinforcement will be borne by the contractor.

5.8.2 MATERIALS:

Unless shown otherwise on the drawings the reinforcement to be used shall be High Yield strength deformed bars of grade FE 415 conforming to IS 1786-1985 specification for high yield strength deformed steel bars and wire for concrete reinforcement.

5.8.3 PLACING:

Reinforcement shall be bent and fixed in accordance with the procedure specified in IS 2502 – 1963 (code of practice for bending and fixing of bars for concrete reinforcement). All reinforcement shall be placed and maintained in the position shown in the drawing splices shall be located where shown in the drawing provided that the location of the splice may altered subject to written approval of the Engineer-in-charge.

Subject to the written approval the Engineer-in-charge, the contractor may for his convenience, splice bars at additional locations other than those shown on the drawings. In order to meet design and space limitation on placing some bent bars may exceed usual clearance cutting and bending of such bars from stock lengths may be required at the site.

Unless otherwise prescribed, placement dimensions shall be to the center line of the bars. Reinforcement will be inspected for compliance with requirement as to size, shape, length, splicing.

Before reinforcement is embedded in concrete the surface of the bars shall be cleaned of heavy flaky Rusk, loose scale, dirt grease or other foreign substances which in the opinion of the Engineer-in-charge are objectionable. Heavy flaky rust that can be removed by firm rubbing with bar lap or equivalent treatment in considered objectionable.

As specified in clause 11.3 of IS 456-2000 unless otherwise specified by the Engineer-in-charge reinforcement shall be placed with the following tolerances.

a. For effective depth 200 mm or less $\pm$ 10 mm

b. For effective depth more than 200 mm $\pm$ 15 mm

The cover in no case be reduced by more than one third of specified cover or 5 mm whichever is less.

Reinforcement shall be securely held in position so that it will not be displaced during the placing of the concrete and special care shall be exercised to prevent any disturbances of the reinforcement in concrete that has already been placed. Welding of bars shall be done as directed by the Engineer-in-charge and in

conformity with the requirements of clause 11.4 of IS 456-2000. Concrete cover shall be as shown on the drawings.

5.8.4 REINFORCEMENT DRAWINGS:

The Engineer-in-charge will supply drawings of reinforcement details and bar bending schedules for adoption.

5.8.5 MEASUREMENT AND PAYMENT:

Measurement for payment of reinforcement bars will be based on the weight of the bars placed in the concrete in accordance with the drawings supplied by the Engineer-in-charge when conformance with these specifications drawings has been determined at the time of embedment. Except as otherwise provided below payment for furnishing and placing reinforcing bars will be made at the unit price bid in the bill of quantities for furnishing and placing reinforcement bars whose unit price shall include the cost of reinforcing bars attaching wire, cutting, bending, cleaning securing, providing chair, ties, overlap if any and maintaining in position reinforcing bars as shown in the drawings.

The total weight of bars placed as reinforcement in concrete shall be arrived at by adding the products of lengths each size and mass per meter (vide Table 1 and Para 6.2.1 of IR 1786-1985) of that size of rod as shown in the drawing(without chair , ties and overlap).

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, dewatering 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 & dewatering 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 and dewatering 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 and dewatering 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 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 neighbouring 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, 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 anywhere 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 provide 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. In case of long stoppage of work suitable depression should be left to a depth of one or two course for proper laying and effective bondage.

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, dewatering, 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.

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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 and dewatering if required and all other incidental charges etc. for satisfactory completion of the respective item of work.

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 and dewatering 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 and dewatering 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 and dewatering 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 and dewatering 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 and dewatering 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 & downgraded aggregates			With 20mm & downgraded 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

In case of actual consumption of cement, as per direction of Engineer-in-charge on recommendation of design mix by Quality Control Organization 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 mixer.

(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-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 form work 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 throughout 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.

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, pre measured 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 day's work should be left vertical only at location as approved by authorized 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. for	4 plus one additional sample every 50 cum. or part thereof.

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.

7.11.2.4 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 aggregates.

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 Foot Bridge and traffic island, coffer dam and removal of the same, dewatering 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, will be entertained.

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 hamp 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, dewatering 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 downstream 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 horizontals 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.

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

(viii) by excavating tanks

(ix) from land acquired temporarily outside road land

(x) from soil mounds resulting from 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 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 extended 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.

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 been thoroughly 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 KHRboos & 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 such clods 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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9.5.6 COMPACTION CONTROL

9.5.7 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).

9.5.8 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.

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 stricter, 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 supervening & 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.

10.0 STANDARD SPECIFICATION & CODE OF PRACTICE FOR WATER BOUND MACADAM

INTRODUCTION: The standard is a code of practice intended to indicate what is considered to be a good practice for the construction of water bound macadam & surface treated water bound macadam.

11.1 DESCRIPTION

Water bound macadam shall consist of clean crushed coarse aggregate mechanically interlocked by rolling & voids thereof filled with screenings & binding material with the assistance of water laid on a prepared sub-base, base or existing payment as the case may be water bound macadam may be used as sub-base, base coarse or surfacing course. In each case, it shall be constructed in accordance with the specification given & below in conformity with the lines, grades & cross sections shown on the drawing or as otherwise directed.

11.2 MATERIALS

11.2.1 Coarse aggregate General Requirements.

11.2.2 Coarse aggregate shall be either crushed or broken stone, crushed slag, over burnt metal or naturally occurring aggregate such a kankar or literate or requisite quality as stated here in after. The aggregate shall conform to the physical requirements set forth in Table-1.

11.2.3 Crushed or broken stone.

Crushed or broken stone shall be hard, durable & generally free from flat, elongated soft & disintegrated particles. It shall also not have excess or dirt or other objectionable matter.

11.2.4 **CRUSHED SLAG :** Crushed slag shall be manufactured from air-cooled blast furnaces slag. It shall be angular shape, reasonably uniform in quality & density, & generally free from any thin, elongated & soft pieces, dirt or other objectionable matter. Crushed slag shall not weigh less than 1120 kg. ccm & the percentage of glossy materials in it shall not be in excess of 20%. Water absorption (IS:2386 part-III) of slag shall not exceed 10%.

11.2.5 **OVER BURNT BRICK METAL:** Brick metal shall be made out of over burnt bricks of bats & be free dust & other foreign matter.

11.2.6 **KANKAR :** Kankar shall be tough, having a blue almost opalescent fracture. It shall not contain any clay cavities between nodules.

11.2.7 **LATERITE :** Laterite shall be hard, compact, heavy & of dark colour. Light coloured sandy laterites as also those containing a good bit on clay shall not be utilized.

11.2.8 COARSE AGGREGATE: SIZE & GRADING REQUIREMENTS

11.2.9 As far as possible coarse aggregates shall conform to one of the grading given in Table-2. Grading 1 is more suitable for sub-base course, but it is not tenable for a compacted layer thickness or less than 90mm.

11.2.10 The size of aggregate to be used in a given case would depend on the type of aggregate available & compacted thickness of the layer. The use of grading-1 shall however, be restricted to sub-base courses only.

11.2.11 For crushable type aggregate like brick metal, kankar & laterite, the grading given in Table-2 are not so relevant & need not be strictly enforced but the material should generally be within the size range indicated.

11.2.12 Table-2: SIZE & GRADING REQUIREMENT OF COURSE AGGREGATE FOR W.B.M.

Granding No.	Size of screenings	Sieve Designation (IS:460)	Percent by weight Passing the Service
1	90mm. to 45mm.	125 mm. 90 mm. 63 mm. 45 mm. 22.4 mm.	100 90 – 100 25 – 60 0 – 15 0 – 5
2	63mm. to 45mm.	90 mm. 63 mm. 53 mm. 45 mm. 22.4 mm.	100 90 – 100 25 – 75 0 – 15 0 – 5
3	53mm. to 22.4m.	63 mm. 53 mm. 45 mm. 22.4 mm. 11.2 mm.	100 95 – 100 65 – 90 0 – 10 0 – 5

11.3 SCREENINGS :

11.3.1 Screening to fill voids in the coarse aggregate shall generally be of the same materials as the coarse aggregates. However, from economic considerations, predominantly non-plastic material such as kankar nodules, moorum or gravel (other than river borne rounded aggregate) may also be utilized for this purpose

provided that the liquid limit & plasticity index of such material is below 20 & 6 respectively & the fraction passing 57 micron sieve does not exceed 10%

11.3.2 As far as possible, screenings shall conform to the grading shown in Table-3. Screenings of type A in Table 3 shall be used in conjunction with coarse aggregate of grading-II. With coarse aggregate of grading-2 either type A or type B screenings may be used. For screenings like moorum & gravel the grading given in Table-3 shall not be regarded as binding. Type B screenings shall be used with coarse aggregate.

11.3.3 The use of screenings may be dispensed with in the case of crushable type coarse aggregate such as brick metal, kankar & laterite.

11.3.4 TABLE -3: GRADING REQUIREMENTS OF SCREENINGS FOR W.B.M.

Grading Classification	Size of screenings	Sieve Designation (IS :460)	Percent by weight Passing the Service
A	13.2 mm.	13.2 mm. 11.2 mm. 5.6 mm. 180 micron	100 95 - 100 15 - 35 0 - 10
B	11.2 mm.	11.2 mm. 5.6 mm. 180 micron	100 10 - 100 15 - 35

11.3.5 BINDING MATERIALS: Binding materials to prevent reveling of water bound macadam shall consist of the fine-grained materials possessing P.I. value of 49 when the WBM is to be used as a surfacing course & upto 6 when the WBM is being adopted as a sub-base/ base course with bituminous surfacing. It lime stone formations are available nearby lime stone dust or kankar nodules may be usefully employed for this purpose.

11.3.6 Application of binding material may not be necessary where the screening consist of crushable type material like moorum or gravel. However, for WBM used as a surfacing course, where the P.I of crushable type screening is less than 4, application of a small amount of binding material having P.I. of 4 to 9 would be required at the top. The quantity of screening could be reduced slightly on this account.

11.3.7 QUANTITIES OF MATERIAL: Approximate quantities, of coarse aggregate & screening required for 100 mm. compacted thickness of WBM. Sub-base course are shown in Table-4, likewise rough quantities of materials for WBM base of surfacing course for a compacted thickness 75 mm. are given in Table-5.

11.3.8 The quantity of binding material where it is to be used (see para 12.3.5) will depend on the type of screenings & function of WBM. Generally, the quantity required for 75 impacted thickness will be 0.06 to 0.09 ccm per 10 mm. in the case of WBM sub-base.

TABLE-4 APPROXIMATE QUANTITIES OF COURSE AGGREGATES & SCREENINGS REQUIRED FOR 100 MM. COMPACTED THICKNESS OF W.B.M. SUB-BASE COARSE FOR 10 MM.

Coarse Aggregates			Screenings			
Classification	Size range	Loose quantity	Stone screenings		Crushable type such as moorum or gravel	
			Grading/ Classification & Size	Loose Qnty.	Grading/ Classification & Size	Loose Qnty.
1	2	3	4	5	6	7
Grading	90 to 45 mm.	1.21 to 1.49 ccm	Type A 13.2 mm.	0.27 to 0.30 ccm	Not uniform	0.30 to 0.32 ccm

TABLE-5 APPROXIMATE QUANTITIES OF COURSE AGGREGATES & SCREENINGS REQUIRED FOR 75 MM. COMPACTED THICKNESS OF W.B.M. SUB-BASE COARSE/ SURFACING COURSE FOR 10 MM.

Coarse Aggregates			Screenings				
Classification	Size range	Loose quantity	Stone screenings		Crushable type such as moorum or gravel **		
			Grading/ classification & size	For WBM sub-base / base course	For WBM surfacing course *	Grading/ classification & size	All cases
1	2	3	4	5	6	7	8
Grading-2	63 to 45 mm.	0.92 to 1.07 ccm	Type A 13.2 mm.	2.12 to 0.15 ccm	0.11 to 0.17 ccm	Not uniform	0.22 to 0.24 ccm
-do-	-do-	-do-	Type B 11.2 mm.	0.20 to 0.22 ccm	0.24 to 0.26 ccm	-do-	-do-
Grading-3	53 to 22.4 mm.	-do-	-do-	0.18 to 0.21 ccm	0.22 to 0.24 ccm	-do-	-do-

* Quantities in col. 6 are 80% of those in col 5 as larger quantity of binding material will need to be used when the WBM is to act as a surfacing course.

** Base course & 0.10 to 0.15 ccm/ 10 ccm when the WBM is to function as a surfacing course. For 100 mm. thickness the quantity needed respectively will be 0.08 to 0.10 ccm/ 10 ccm. & 0.12 to 0.16 ccm/ 10 mm.

The above-mentioned quantities should be taken as guide only for estimation of quantities for construction etc. & not for the purpose of payment which should be made as per actual.

11.4 CONSTRUCTION PROCEDURE

11.4.1 **PREPARATION OF FOUNDATION OF RECEIVING THE WBM COURSE:** The sub-grade, sub-base to receive the water bound macadam course shall be prepared to the required grade & camber & cleaned all dust, dirt & other extraneous matter. Any rust or soft yielding places that have appeared due to improper drainage service or under traffic or other reasons shall be corrected & rolled until firm.

11.4.2 Where the water bound macadam is to be laid on existing un-surfaced road, the surface shall be scarified & re-shaped to the required grade & camber as necessary. Weak place shall be strengthened corrugations removed & depressions & pot holes made good with suitable material before spreading the coarse aggregate for WBM.

11.4.3 Where existing road surface is black topped, 50 mm. x 50 mm. furrows shall be cut in the existing surface at 1 mtr. Intervals at 45 degrees to centre line of the carriage way before proceeding with the laying of coarse aggregates.

11.4.4 In all cases the foundation shall be kept well drained during the construction operations.

11.4.5 **PROVISION OF LATERAL CONFINEMENT OF AGGREGATE:** Before starting with WBM construction, necessary arrangements shall be made for the lateral confinement of aggregates. One method is to construct side shoulder in advance to a thickness corresponding to the compacted layer of the WBM coarse. After shoulders are ready, their inside edge may be trimmed vertical & the included area cleaned of all spoiled material there by setting the stage for spread of coarse aggregates. The practice of construction WBM in a trench section, excavated in the finished formation must be completely avoided.

11.4.6 **SPREADING COARSE AGGREGATE:** The coarse aggregates shall be spread uniformly & evenly upon the prepared base in required quantities from premature stack piles along the side of the road or directly from vehicles. In no case shall these be dumped in heaps directly on the area where are to be laid nor shall their hauling over a partly completed base be permitted. The aggregates shall be spread to proper profile by using templates placed across the road about 6 mtr. apart. Where possible approved mechanical device shall be used to spread the aggregates uniformly so as to minimize the need for manipulation by hand.

11.4.7 The WBM course shall normally be constructed in layers of not more than 75 mm. compacted thickness. However, for aggregates of grading table-2, the compacted thickness of layer may go up to 100 mm. Each layer shall be tested by depth blocks. No segregations of large & fine practices shall be allowed in the coarse aggregates as spreading shall be of uniform gradation with no pockets of fine materials.

11.4.8 The coarse aggregate shall not normally be spread in length exceeding three days average work ahead of rolling & binding the proceeding section.

11.5 ROLLING

11.5.1 After the laying of coarse aggregate, there shall be compacted to full width by rolling with either three-wheel power roller of 6 to 10 tones capacity or an equivalent vibratory roller. The weight of the roller shall depend on the type of the aggregates.

11.5.2 The rolling shall begin from edges with roller running forward & backward until the edges have been compacted. The roller shall then progress gradually form the edges towards the centre parallel to the centre line of the road, uniformly lapping preceding rear wheel track by one half width. Rolling shall be discontinued when the aggregates are partially compacted with sufficient voids space in time to permit application of screenings. However, where screenings are not to be applied, as in the case of crushable aggregates like brick metal, laterite & kankar, compaction shall be continued until the aggregates are thoroughly keyed or interlocked with no

creeping of stones ahead of the roller. Slight sprinkling of water may be done during rolling if necessary.

11.5.3 On super elevated portion of the road, rolling shall commence from the lower edge & progress gradually towards the upper edge of the pavement.

11.5.4 Rolling shall not be done when the sub-grade is soft or yielding nor when it causes a wave like motion in the base course/sub-grade. If irregularities develop during rolling which exceeds 10 mm. when tested with a 3 mtr. straight edge the surface shall be loosened & aggregates added or removed as required before rolling again so as to achieve uniform surface conforming to the desired cross section & grade. The surface shall also be checked transversely the template for camber & any irregularities corrected in the manner described above. In no case shall the used of screenings to make up depressions be permitted.

11.6 APPLICATION OF SCREENINGS

11.6.1 After coarse aggregates have been rolled as para 12.5 screenings to fill the interstices shall be applied gradually over the surface. Dry rolling shall be done when the screening is being spread so that the jarring effect or roller causes them to settle into the voids of the coarse aggregates. The screenings shall not be dumped in piles but applied uniformly in successive thin layers either by the spreading motion on hand shovels, mechanical spreaders or directly from the trucks playing over the base course to spread screenings that shall be equipped with pneumatic tires & so operated as not to disturb the coarse aggregates.

11.6.2 The screenings shall be applied at a slow rate in three or more applications as necessary. This shall be accompanied by rolling an brooming either by mechanical brooms/ hand brooms or both than may be used. In no case shall the screening be applied so fast & thick as to form cakes or ridges on the surface making the filling of voids difficult or preventing the direct bearing of roller on the coarse aggregates. The spreading rolling & brooming of screening shall be taken up on sections which can be completed within one day's operation. Damp & wet screenings shall not be used in any circumstances.

11.7 SPRINKLING & GROUTING

11.7.1 After application of screenings the surface shall be copiously sprinkled with water swept & rolled. Hand brooms shall be used to sweep the screening into the voids & distribute them evenly. The sprinkling, sweeping the rolling operations shall be continued & additional screenings applied where necessary until the coarse aggregate are well bound & firmly set & a grout has been formed of screenings. Care shall be taken that the base or sub-grade does not get damage due to addition of excessive quantities of water during the construction.

11.8 APPLICATION OF BINDING MATERIAL

11.8.1 After the application of screenings as per paras 12.6 & 12.7 binding materials where it is required to be used (see para above) shall be applied at the uniform & slow rate in two or more successive thin layer. After each application of binding material, the surface shall be copiously sprinkled with water & resulting slurry swept in with hand brooms, mechanical brooms or both so as to fill the voids properly. This shall be followed by rolling with a 6-to-10-ton roller during which water shall be applied to the wheels to wash down the binding material that may get stuck to them. The spreading of binding material, sprinkling of water sweeping with brooms & rolling shall continue until the slurry of binding material an water forms and wave ahead of the wheels of moving roller.

11.9 SETTING & DRYING

11.9.1 After final compaction of the course, the road shall be allowed to cure overnight next morning the hungry spots shall be filled with screening or binding materials lightly sprinkled with water if necessary & rolled. No traffic shall be allowed till the macadam sets.

11.9.2 In case of water bound macadam base course to be provided with bituminous surfacing, the latter shall be laid only after the WBM course completely dry & before allowing any traffic.

11.10 PLAYING OF CONSTRUCTION TRAFFIC

11.10.1 In general construction traffic may ply over compacted portion of the WBM course provided move over its full width avoiding any rutting or uneven compaction. However, Engineer-in-Charge shall have full authority to stop the passage of construction traffic when in his opinion this is leading to excessive damage.

11.11 SURFACE EVENNESS OF WBM COURSE COMPLETED

The surface evenness of complete WBM course in longitudinal & transverse directions shall be within the tolerances indicated in Table-6

TABLE – 6PERMITTED TOLERANCES OF SURFACES EVENNESS FOR WBM COURSE

Sl.No.	Size range of coarse aggregates	Longitudinal profile (Maximum permissible undulation when measured with a 3 mtr. straight edge)	Cross profile (Maximum permissible variation from specific profile when measured with a camber template)
1	40 to 90 mm.	15 mm.	10 mm.
2	25 to 50 mm. or 40 to 63 mm.	12mm. 12mm.	8 mm. 8 mm.

11.12.1 The longitudinal profile shall be checked with 3 mtr. long straight edge at the middle of each traffic lane along a line parallel to the centre line of the road. The transverse profile shall be checked with a series of three camber boards at intervals of 10 mtr.

11.13 RECTIFICATION OF DEFECTIVE CONSTRUCTION

Where the surface irregularity of the WBM course exceeds the tolerance given in Table-6, where the course is otherwise defective due to sub-grade soil mixing with the aggregates, the layer to its full thickness shall be scarified over the affected area, reshaped with added material or removed the replaced with freshed materials as applicable & recomputed in accordance with para 12.5. The depressions be filled up with screenings or binding materials

11.14 CONSTRUCTION OF WBM NARROW WIDTHS

Where the WBM course is to be constructed in narrow widths for widening an existing pavement, the following sequences of operations should be adopted.

(i) The existing shoulder should be excavated to their full depth & width upto the sub-grade soil except where the widening the widening specification envisages laying of stabilized soil sub-base using in situ operations in which case same should be removed only upto the sub-base level.

(ii) Before proceeding with laying of WBM course, shoulders be rebuilt in layer in reduced width depending on the extent of widening. The compacted thickness of each layer should correspond to the compacted layer of WBM course to be laid adjacent to it. After compaction the inside edges of shoulder should be trimmed vertical & the included area cleared of all spilled materials and

(iii) The construction of WBM layer should then follow the usual manner.

11.15 MAINTENANCE OF WBM WEARING COURSE.

11.16 The successful performance of WBM as a surfacing course depends to a large extent on wearing maintenance. Maintenance measures for this can be considered under three heads, periodic patching of pot holes along with removal of ruts & depression, blinding of the surface the surface renewal.

11.17 **PATCHING POT-HOLES & RUTS**: - Pot holes, ruts & other depression should be drained of water & cut to regular shape with vertical sides. All the loose & disintegrated materials shall be removed & the exposed surface swept clean. The holes, depression shall then be filled with salvaged coarse aggregates mixed with sufficient quantity of fresh aggregates & re-compacted as normal. W.B.M. Operations described in para 12.5 so that the patched area merge with the adjoining surface. Where the area so treated is small, hand rammers may be used for compaction instead of rollers.

11.18 **BLINDING OF SURFACE: -** Blinding of the surface shall be resorted to periodically as soon as the blinding material applied has been eroded away due to traffic or weather action & the surface has started showing signs of disintegration. Blinding operations shall consist of application of blinding material in this layers & grouting in accordance with the procedure given in previous para.

11.19 SURFACE REVEWAL

WBM wearing course shall be renewal when the surface is worn out, corrugated & badly damaged or has profusions of pot-holes & depression which cannot be treated economically with patching or blinding operation.

11.19.1 For renewal, the existing surface shall be scarified to a depth of 75 mm. & the resulting materials removed to beams for screening to salvage the useable coarse aggregates. The exposed pavement shall be scarified against at high spots so as to ensure proper grade & camber. The salvaged coarse aggregates are mixed with sufficient quantity of fresh aggregates. Usually between one half to one third of the quantity of salvaged aggregates shall be used for construction of new WBM course in accordance with para 11.17.

11.20 RECONSTRUCTION DAMAGED MACADAM

If any time sub-grade material should get mixed with the base course materials, the mixture shall be removed and the sub-grade shaped & compacted. The materials removed shall then be placed with clean aggregate, which shall be rolled until satisfactory compaction is achieved. If any irregularities develop in the sub-grade during or after rolling of the sub-course, they shall be corrected by lessening the surface & removing or adding coarse aggregates as may be require, after which the entire area shall be rolled, screenings & water applied & rolling continued until the repaired based in compacted to uniform surface. The finished surface shall have no variation greater than 12 mm. (1/2 in) from 3 mtr. (10 ft.) long straight edge laid parallel to the centre line of the road & be true to the typical cross section.

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11.21 MULTIPLE LAYERED COURSE

When it is necessary to construct to course in more than one layer to conform to the lines, grades & cross sections indicated on the plans, or as directed by the Engineer-in-Charge, each layer shall be constructed as described above. The same degree of requirement shall be made in forming the surface of all component layers & the smoothness & uniformity of the surface of each layer shall conform closely to the requirements for surface to the final layer.

11.22 PROTECTION

In general, hauling equipment may be routed over completed portion of the WBM course, provided such equipment is routed over the full width of the course avoiding rutting or uneven compaction. However, Engineer-in-Charge have full & specific authority to stop all hauling over completed or partially completed course when, in his opinion such hauling is causing excessive damage.

During the placing, spreading & compacting of coarse aggregate & screenings, care shall be exercised to prevent the incorporation of sub-grade, sub-base or shoulder material into these macadam materials.

N.B: * Plasticity index not more than 9 in base of WBM & 6 in case of surface treated WBM.

11.23 PROFILE MARKING

11.24 **Marking of alignment: -** Centre line of the alignment should be laid out according to the sanctioned plan with the help of ranging rods, flags or theodolite. Permanent brick pillars 10” x 10” should be fixed 660 ft. apart on one side of the alignment at a constant distance of about 50 to 75 ft. away from the centre line depending upon the land width. These pillars would then form a line parallel to the centre line of the alignment but side shifted by about 50 to 75 ft. These pillars shall show the formation level of the earth work bank & the change of the alignment as per sanctioned plan & longitudinal sections. These shall be legibly marked.

11.25 **Marking the profile:** The profile should be marked at intervals not exceeding 200 or so except at curves where closer profile shall be necessary. The toe line of the embankment should be fixed first. These can be calculated on the basis of the slope (1:2 or 1:3) & the height of the embankment as per sanctioned plan at the particular section. Two sal bullahs or KHRboo piles well embedded in the ground should be fixed at the toe lines & top of the poles should be kept in one level with the help of leveling instruments. These poles should have alternate 6” thickness printed black & white to show the layer or consolidated earth to be done. Such sets of poles should be fixed at distances not exceeding 20 ft. along the alignment.

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SECTION – 7

DRAWINGS CAN BE SEEN IN THE OFFICE OF THE EXECUTIVE ENGINEER, DRAINAGE DIVISION, KHORDHA DURING OFFICE HOURS

(FROM 28.10.2026 TO 11.11.2026)

CONTRACTOR

EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

SECTION-8

FORMS

CONTRACTOR

EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

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.

CONTRACTOR

(OR)
RELATIONSHIP DECLARATION

List of Relatives of the tender serving in Water Resources Department.

Sl No.	Nameoftherelatives	Rank	Place of present posting with office / Division / Department
1	2	3	4

1.
2.
3.
4.
5.

CONTRACTOR

CONTRACTOR

EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

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.

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DRAINAGE DIVISION, KHORDHA

7. Number of years of experience

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

CONTRACTOR

EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

FORM – C

AFFIDAVIT

I, Sri…….……Aged……..year,

Son/ Daughter/ Wife of Sri…….. at present residing

At……. P.O……..P.S……..Dist……..

Pin……. do here by solemnly affirm as follows.

i) That, I / We posses 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, Khordha, Dist –Khordha, Odisha for execution of "Improvement of Dahuka Drainage Channel under Nayagarh Block of Nayagarh Constituency'' in response to E-procurement Notice No.ACEDC-BBSR-09/2026-27 vide BID IDENTIFICATION NO. ACEDC-BBSR/DD-KHR-28/2026-27.

ii) I am the authorized signatory on behalf of contractor for the tender for the work mentioned above.

iii) I am swearing this affidavit that all tender documents and accompanying papers those being submitted by me before the **Executive Engineer, Drainage Division, Khordha** including E.M.D. in any shape are all authentic and bonafied documents in the eyes of the law of the land.

That the fact 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
* * *Mention name of works for which bid is being submitted.

CONTRACTOR

EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

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 ……. Class Degree/Diploma Engineer Contractor is valid up to **…… .

I am submitting tenders before the **Executive Engineer, Drainage Division, Khordha**, Odisha for the work **"Improvement of Dahuka Drainage Channel under Nayagarh Block of Nayagarh Constituency"** in response to **e-procurement notice no**. **ACEDC-BBSR-09/2026-27 vide BID IDENTIFICATION NO. ACEDC-BBSR/DD-KHR-28/2026-27.**

I am the authorized signatory on behalf of the contractor for the tender for the work mentioned above.

(ii) That, I being Engineer Degree/Diploma Holder Contractor, I am entitled to avail exemption 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, Khordha, 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

CONTRACTOR

EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

CHECK LIST

SL. NO.		DOCUMENTS	SUBMITTED OR NOT
1.	Form A	No relation Certificate	Yes/No
2.	Form B	STRUCTURE AND ORGANISATION	Yes/No
3.	Form C	AFFIDAVIT	Yes/No
4.	Form D	AFFIDAVIT For Availing EMD Exemption **(For Engineering Contractor)**	Yes/No
5.		Valid Registration Certificate	Yes/No
6.		Active GSTIN	Yes/No
7.		Active PAN	Yes/No

Signature of Contractor /
Authorized Signatory

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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DRAINAGE DIVISION, KHORDHA

SECTION-9

BILL OF QUANTITIES

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EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

GOVERNMENT OF ODISHA
DEPARTMENT OF WATER RESOURCES

E- Procurement Notice No.ACEDC-BBSR-09/2026-27

BID IDENTIFICATION NO.

ACEDC-BBSR/DD-KHR-28/2026-27

TENDER DOCUMENT
(PRICE BID)
(COVER-II)

FOR THE WORK

IMPROVEMENT OF DAHUKA DRAINAGE CHANNEL UNDER NAYAGARH BLOCK OF NAYAGARH CONSTITUENCY.

ADDITIONAL CHIEFENGINEER
DRAINAGE CIRCLE, BHUBANESWAR

BILL OF QUANTITIES

CONTRACTOR

EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA

TENDER INVITING AUTHORITY: **ADDITIONAL CHIEF ENGINEER, DRAINAGE CIRCLE, BHUBANESWAR**

NAME OF WORK: **Improvement of Dahuka Drainage Channel under Nayagarh Block of Nayagarh Constituency.**

BID IDENTIFICATION NO.: **ACEDC-BBSR/DD-KHR-28/2026-27**

NAME OF THE BIDDER :

BILL OF QUANTITY

Sl. No.	Description of work	Quantity	Unit	Rate	Amount Rs. P
				in Rs	
01.	Excavation in both wet and dry condition by mechanical means of all kinds of soil including stony earth, gravel & moorum etc. inter spread with boulders up to 1/2 cum size with all leads, lifts, delifts, handling and rehandling etc. complete including trimming of slopes & bed to design section & depositing the excavated materials away on both side of the drain including spreading, leveling the earth in layers not exceeding 22.5 cm including hire & running charges of all machineries, T& P, cess etc. complete as per direction of the Engineer-in-charge. (Measurement will be recorded in level section only)	884506.680	1 Cum	43.20	38210688.58
02.	Excavation of foundation by mechanical means in all kinds of soil with initial lead, lift including rough dressing and leveling the bed and sides of foundation and disposal of the excavated materials with all leads, lifts and delfts & breaking clods to maximum 5cm to 7cm & laying in layers not exceeding 0.30m in depth including dewatering, shoring and shuttering, cess etc. complete as per direction of the Engineer-in-charge.	2142.575	1 Cum	42.70	91487.95
03.	Filling in foundation and plinth with sand well watered and rammed etc. complete including all cost per 1Cum as as per	66.160	1 Cum	1050.46	69498.43

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DRAINAGE DIVISION, KHORDHA

	direction of the Engineer-in-charge.				
04.	Random rubble hard granite stone masonry of approved quality from approved quarry in sand grouted in foundation & plinth with all leads, lifts & delfts & well watered and rammed in foundation trench including cost, conveyance, royalty, loading and unloading of all materials with cess, T&P, etc complete as per direction of the Engineer-in-charge.	58.824	1 Cum	3929.11	231125.97
05.	Cement concrete M-15 grade with crusher broken hard granite chips of size 40mm & downgraded of approved quality form approved quarry, mixing by concrete mixer and placing manually in proper position, with all leads, lifts and delifts, compacting with vibrators including cost, conveyance, royalty, loading and unloading of all materials, curing, cess, T&P, etc. complete as per direction of the Engineer-in-charge.	38.700	1 Cum	5959.04	230614.85
06.	Cement concrete M-25 grade with crusher broken hard granite chips of size 20mm & downgraded of approved quality from approved quarry mixing by concrete mixer and placing manually, with all leads, lifts and delifts, compacting properly, including cost, conveyance, royalty, loading and unloading of all materials, curing, cess, T&P, etc. complete as per direction of the Engineer-in-charge.	278.400	1 Cum	7213.87	2008341.41
07.	Supplying, straightening, cutting, bending & binding and tying the grills of HYSD bars of approved quality and placing in position including cost, conveyance of HYSD bars and binding wire 18 to 20 gauge, loading, unloading, cess, T&P, etc. complete as per direction of Engineer-in-Charge.	165.091	1 Qntl.	7829.30	1292546.97
08.	Rigid & smooth centering and shuttering for R.C.C. work including false work and dismantling them after casting including cost, conveyance of all materials, cess, labour, T&P, etc.				

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DRAINAGE DIVISION, KHORDHA

	complete as per direction of the Engineer –in –Charge.				
08.01.	R.C.C foundation and plinth band, footing bases of columns, mass concrete, precast slabs etc.	340.450	1 Sqm	250.56	85303.15
08.02.	R.C.C walls & fins including attached pillasters.	570.400	1 Sqm	1095.55	624901.72
09.	Providing weep holes in brick masonry/ plain/ Reinforced concrete abutment, wing wall/return wall with 100mm dia AC pipe, extending through the full width of the structure with slope of 1V:20H towards drawing face complete as per drawing including cost, conveyance, royalty, loading and unloading of all materials, curing, cess, T&P, etc. complete as per direction of the Engineer-in-charge.	144.000	1 Rmt.	112.85	16250.40
10.	Rough stone dry packing in aprons and revetments with H.G. crosser broken stones of 30 cm & above size of approved quality from approved quarry placing in proper line and level with all leads, lifts and delfts, including cost, conveyance, royalty, loading and unloading of all materials, Cess, T&P, etc. complete as per direction of the Engineer-in-charge.	175.000	1 Cum	2456.17	429829.75
11.	Cement concrete (1:3:6) with crusher broken hard granite chips of size 4 cm of approved quality form approved quarry, mixing by concrete mixer and placing manually in proper position, with all leads, lifts and delifts, compacting with vibrators including cost, conveyance, royalty, loading and unloading of all materials, curing, cess, T&P, etc. complete as per direction of the Engineer-in-charge.	41.190	1 Cum	6599.18	271820.22
12.	Providing rigid & smooth centering and shuttering with the box type steel shuttering plates with keys for intermediate construction joints in rafts of weirs barrages and dam block including cost of all materials, labour, T&P, cess, etc complete as directed by the Engineer-in-charge.	825.100	1 Sqm.	285.00	235153.50

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13.	Cement concrete (1:2:4) with crusher broken hard granite chips of size 12 mm of approved quality form approved quarry, mixing by concrete mixer and placing manually in proper position, with all leads, lifts and delifts, compacting with vibrators including cost, conveyance, royalty, loading and unloading of all materials, curing, cess, T&P, etc. complete as per direction of the Engineer-in-charge.	199.920	1 Cum	8347.32	1668796.21
14.	Filling in foundation & plinth with excavated materials well watered and rammed with all leads, lifts & delfts including T&P, cess, etc. complete as per direction of the Engineer-in-charge.	857.000	1 Cum	23.70	20310.90
	(Fourteen Items) only			**Rs.**	4,54,86,670.01
				Say Rs.	**4,54,86,670.00**

(Rupees Four Crore Fifty Four lakhs Eighty Six Thousand Six Hundred Seventy) only

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 14(Fourteen) items only.

Sd/
Additional Chief Engineer
Drainage Circle, Bhubaneswar

CONTRACTOR

EXECUTIVE ENGINEER
DRAINAGE DIVISION, KHORDHA