

**GOVERNMENT OF TELANGANA
NIZAMPET MUNICIPAL CORPORATION**

TENDER DOCUMENT

[Cost of works upto Rs.50 Lakhs]

TENDERER

MUNICIPAL COMMISSIONER

INSTRUCTIONS TO TENDERERS

Name of work: **Door to Door Propagation and awareness of Segregation of wet and dry waste by Swachh Dhoot under Capacity Building Skill Development and Knowledge Management in Nizampet Municipal Corporation under SBM 2.0 Funds 2024-25**

Terms & Conditions:

1. The Commissioner, NIZAMPETMUNICIPAL CORPORATION invites bids for the above work during the period, for which dates and time specified in the NIT and will be opened by the Commissioner, NIZAMPETMUNICIPAL CORPORATION or his nominee at his office on the date and time mentioned in the NIT.
2. The intending Tenders would be required to enroll themselves on the e-procurement market place at www.e-procurement.gov.in.
3. The tenders should be in the prescribed form invited on e-procurement by the Commissioner, NIZAMPETMUNICIPAL CORPORATION (As specified in NIT) that can be downloaded at free of cost from the website www.e-Procurement.gov.in.
4. The dates stipulated in the tender notice are firm and under any circumstances they will not be relaxed unless officially extended.
5. The Tenderer should upload scanned copies of registration and other documents and submit originals of EMD by way of DD and copies of all uploaded documents before prescribed date to the tender inviting authority. Contractor should produce the originals of all documents for verification if asked for by the Competent Authority within (3) days.
6. The Tender opening Authority will not consider any tender received after expiry of date and time fixed (As specified in NIT) for receipt of tenders.
7. Tenderers shall furnish declaration that they have not been blacklisted in any department in TELANGANA. Any wrong declaration in this regard which comes to notice at a later date will disqualify them and the tenders so received will be rejected and the Tenderer black listed.
8. Successful Tenderer shall pay the Corpus fund to APTS @ 0.04% on ECV in the form of DD payable at Hyderabad and drawn in favour of APTS, Hyderabad to sustain e-procurement initiatives, research and development of software application for automation for process in user departments.
9. The successful Tenderer is expected to providing man power within the time period specified in the NIT.
10. The tenderer of work shall lift the garbage every day from his allotted areas. If any contravention is noticed during the course of inspection by the Municipal authorities or their authorized agents an equal contract amount of penalty for that day will be collected and the contract will be cancelled.

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11. The Contractor shall lift the garbage yard by arranging tarpaulin /polythene cover on the top of garbage vehicle.
12. The town garbage shall be lifted to earmarked yard only i.e., NIZAMPETMUNICIPAL CORPORATION dumping yard with debris etc.
13. The tenderer shall have cell phone compulsorily.
14. The garbage shall be lifted according to the instructions of the Municipal Commissioner /his staff of subordinates.
15. The EMD in shape of DD in favour of Municipal Commissioner, NIZAMPET shall be enclose.
16. The tenderer shall be personally responsible for any accidents occurred to the workers during their performance of duties of Sanitation. He is also responsible for payment of any benefits of Insurance as per the Labour Act in case of such accidents to workers.
17. The tenderer shall pay the contract wages to the workers before 5th of every month for the preceding month wages and submit acquaintance rolls copy through the sanitary Inspector to the office bill section, otherwise the penalty @ Rs.500/- per day will be levied and collected.
18. The estimates of contract are inclusive of P.F. & E.S.I rates payable to workers.
19. The supply of labourers shall be capable of handling sanitation work.
20. **The tenderer should have labour registration Previous experience preferable .**
21. **The contractor shall pay the wages to the labourers as per Minimum wages Act.**
22. **The tenders shall have P.F. & E.S.I Registration. Account number within a period of one month after allotment.**
23. **The tenderers shall furnish list of workers to be supplied with all details within a week after execution of agreement to the Municipal Commissioner, NIZAMPET.**
24. **Tender will be allotted to contractor who quotes minimum service charges i.e., between 2% to 5% for supply of labour on payment of minimum wages as fixed by the Government.**
25. **The tenderer shall provide a valid labour license Certificate, and they should have latest Income Tax Certificate.**
26. As per the instructions of the Commissioner & Director of Municipal Administration, issued vide circular Roc. No. 1994/2007/M3-1 Dated: 28.03.2013with a condition that **“Contract can be terminated at any time after 2 months without any notice”**

INSTRUCTIONS TO TENDERERS

A – GENERAL

Name of work: **Door to Door Propagation and awareness of Segregation of wet and dry waste by Swachh Dhoot under Capacity Building Skill Development and Knowledge Management in Nizampet Municipal Corporation under SBM 2.0 Funds 2024-25**

1.

The Superintending Engineer (As specified in NIT) concerned invites bids for the above work during the period, for which dates and time specified in the NIT and will be opened by the Superintending Engineer concerned or his nominee at his office on the date and time mentioned in the NIT.

- a. The intending bidders would be required to enroll themselves on the 'e'procurement market place at www.e-Procurement.gov.in.
- b. The tenders should be in the prescribed form invited on e-procurement by the SE(PH), West Circle (As specified in NIT) that can be downloaded at free of cost from the website www.e-Procurement.gov.in.
- c. The dates stipulated in the tender notice are firm and under any circumstances they will not be relaxed unless officially extended.
- d. The Tenderer should upload scanned copies of registration and other documents and submit originals of EMD by way of DD and copies of all uploaded documents before prescribed date to the tender inviting authority. Contractor should produce the originals of all documents for verification if asked for by the Competent Authority.
- e. The Tender opening Authority will not consider any tender received after expiry of date and time fixed (As specified in NIT) for receipt of tenders.
- f. Tenderers shall furnish declaration that they have not been blacklisted in any department in TELANGANA. Any wrong declaration in this regard which comes to notice at a later date will disqualify them and the tenders so received will be rejected.
- g. The successful tenderer is expected to complete the work within the time period specified in the NIT.

27. Firms Eligible to Tender:

- a. The Firms who
 - i) possess the valid registration in the class and category mentioned in the NIT and satisfy all the conditions therein .
 - ii) are not blacklisted or debarred or suspended by the Government for what ever the reason, prohibiting them not to continue in the contracting business
 - iii) have complied with the eligibility criteria specified in the NIT.

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are the eligible tenderers.

b. Firms Ineligible to Tender:

- i) A retired officer of the Govt. of AP or Govt. of India executing works is disqualified from tendering for a period of two years from the date of retirement without the prior permission of the Government.
- ii) The Tenderer who has employed any retired officer as mentioned above shall be considered as an ineligible tenderer.
- iii) The contractor himself or any of his employees is found to be Gazetted Officer who retired from Government Service and had not obtained permission from the Government for accepting the contractor's employment within a period of 2 years from the date of his retirement.
- iv) The Contractor or any of his employees is found at any time after award of contract, to be such a person who had not obtained the permission of the Government as aforesaid before submission of the tender or engagement in the Contractor's service.
- v) Contractor shall not be eligible to tender for works in the division / circle where any of his near relatives are employed in the rank of Assistant Engineer or Assistant Executive Engineers and above on the Engineering side and Divisional Accounts Officer and above on the administrative side. The Contractor shall intimate the names of persons who are working with him in any capacity or are subsequently employed. He shall also furnish a list of Gazetted /Non-Gazetted, State Government Employees related to him. Failure to furnish such information tenderer is liable to be removed from the list of approved contractors and his contract is liable for cancellation.

Note: Near relatives include

1. Sons, step sons, daughters, and step daughters.
2. Son-in-law, and daughter-in-law.
3. Brother-in-law, and sister-in-law.
4. Brothers and Sisters.
5. Father and Mother.
6. Wife / Husband.
7. Father-in-law and Mother-in-law
8. Nephews, nieces, uncle and aunties
9. Cousins and
10. Any person residing with or dependent on the contractor.

28. Qualification data of the Tenderers

- a. The tenderer shall furnish the following particulars in the formats provided online and supported documentary evidence shall be uploaded.

a) Attested copies of documents relating to the Registration of the firm, Registration as Civil Contractor, Partnership deed, Articles of Association.

Note: The Partnership firms, which are registered as Contractors shall intimate the change in partnership deed, if any, as per GO Ms No.58, I & CAD, dt.23.4.2002 within one month of such change. Failure to notify the change to the registration authority in time will entail the firms to forfeit their registration and their tender will be rejected. The intimation of change of partners if any and the acceptance by the Registration authority may be enclosed.

b. Even though the tenderers meet the above qualifying criteria, they are liable to be disqualified / debarred / suspended / blacklisted if they have

- Furnished false / fabricated particulars in the forms, statements and /annexures submitted in proof of the qualification requirements and/or
- Not turned up for entering into agreement, when called upon.
- record of poor progress such as abandoning the work, not properly completing the contract, inordinate delays in completion, litigation history or financial failures etc. and/or
- participated in the previous bidding for the same work and had quoted unreasonably high tender percentage and
- even while execution of the work, if found that the work was awarded to the Contractor based on false / fake certificates of experience, the Contractor will be blacklisted and work will be taken over invoking clause 61 of PS to APSS.

a) If the percentage quoted by a tenderer is found to be either abnormally high or with in the permissible ceiling limits prescribed but under collusion or due to unethical practices adopted at the time of tendering process, such tenders shall be rejected.

b) A tenderer submitting a Tender which the tender accepting authority considers excessive and or indicative of insufficient knowledge of current prices or definite attempt of profiteering will render himself liable to be debarred permanently from tendering or for such period as the tender accepting authority may decide. The tenderer overall percentage should be based on the controlled prices for the materials, if any, fixed by the Government or the reasonable prices permissible for the tenderer to charge a private purchaser under the provisions of clause-6 of the hoarding and profiteering prevention ordinance of 1943 as amended from time to time and on similar principle in regard to labour supervision on the construction.

29. One Tender per Tenderer:

- a. Each Tenderer shall submit only one Tender for the work. A Tenderer who submits more than one Tender will cause disqualification of all the Tenders submitted by the Tenderer.

30. Cost of Tendering

- a. The Tenderer shall bear all costs associated with the preparation and submission of his Tender and the tender inviting authority will in no case be responsible and liable for those costs.

31. Site Visit.

- a. The Tenderer, at the Tenderer's own responsibility and risk is advised to visit and examine the Site of Work and its surroundings and obtain all information that may be necessary for preparing the Tender for entering into a contract, for construction of the work. The costs of visiting the site shall be at the Tenderer's own expense.

B. TENDER DOCUMENT

32. Contents of Tender document.

- a. One set of Tender document, comprises of the following:

Technical bid

- 1) Notice Inviting Tenders (NIT)
- 2) Instruction to Tenderers
- 3) Forms of Tender and qualification information
- 4) Conditions of Contract.
- 5) Specifications.
- 6) Drawings.
- 7) Forms of Securities. i.e., EMD, Additional Security etc.

Price bid

Bill of Quantities and Price bid.

33. Clarification on Tender Documents

- a. A prospective Tenderer requiring any clarification on Tender documents may contact the Tender Inviting Officer at the address indicated in the NIT. The Tender Inviting Officer will also respond to any request for clarification, received through post.

34. Amendment to Tender Documents

- a. Before the last date for submission of Tenders, the Tender Inviting Officer may modify any of the Contents of the Tender Notice, Tender documents by issuing amendment / Addendum.
- b. Any addendum/amendments issued by the Tender Inviting Officer shall be part of the Tender Document and it shall either be communicated in writing to all the purchasers of the Tender documents or notified in the News Papers in which NIT was published.
- c. To give prospective Tenderers reasonable time to take an addendum into account in preparing their bids, the Tender Inviting Officer may extend if necessary, the last date for submission of tenders.

C. PREPARATION OF TENDERS.

35. Language of the Tender.

- a. All documents relating to the tender shall be in the English Language only.

36. Documents comprising of the Tender.

- a. The tender comprise the following.
 - (a) Technical Bid , and drawings. [both are available online at www.e-Procurement.gov.in].
 - (b) Qualification information and supporting documents [to be uploaded by the tenderer].
 - (c) Price bid containing bill of quantities (Schedule –A) and the Bid offer. [both are available online at www.e-Procurement.gov.in].

37. Bid Offer:

- a. Bill of Quantities called Schedule “A” and the bid offer accompanies the tender document as Volume.II. It shall be explicitly understood that the Tender Inviting Officer does not accept any responsibility for the correctness or completeness of this schedule ‘A’ and this schedule ‘A’ is liable to alterations by omissions, deductions or additions at the discretion of the Superintending Engineer or as set forth in the conditions of the contract. The Schedule “A” shall contain the items of work indicated as part– I and LS provisions as part–II. The percentage quoted by the contractor shall be applicable only to part –I. However, the provisions contained in the part –II will be operable basing on the conditions provided in the Tender Document. The tenderers will have to state clearly their willingness to execute the work at certain specific percentage of excess or less or at par of the ECV indicated in Part-I at the space provided therein in Schedule ‘A’. The L.S. amounts indicated in part-II are maximum reimbursable amounts. The tenderer should however quote his lumpsum tender based on this schedule of quantities. He should quote his offer as a overall tender percentage. The over all tender percentage should be written both in words and figures. The bid offers i.e., percentage shall be written both in figures and words legibly and free from errors.
- b. The Schedule –A (or Price-bid) contains not only the quantities but also the rates worked out by the Department and the amount for each item and total value of the estimated contract. The tenderer should workout his own rates keeping in view the work, site conditions and quote his overall tender percentage with which he intends to execute the work.
- c. The bid offer shall be for the whole work and not for individual items / part of the work.

- d. The tendered contract amount as computed based on overall tender percentage is subject to variation during the performance of the Contract in accordance with variation in quantities etc.

38. Validity of Tenders:

- a. Tenders shall remain valid for a period of not less than three months from the last date for receipt of Tender specified in NIT.
- b. During the above mentioned period no plea by the tenderer for any sort of modification of the tender based upon or arising out of any alleged misunderstanding of misconceptions or mistake or for any reason will be entertained.
- c. In exceptional circumstances, prior to expiry of the original time limit, the Tender Inviting Officer may request the bidders to extend the period of validity for a specified additional period. Such request to the Tenderers shall be made in writing. A Tenderer may refuse the request without forfeiting his E.M.D. A Tenderer agreeing to the request will not be permitted to modify his Tender, but will be required to extend the validity of his E.M.D. for a period of the extension.

39. Earnest Money Deposit

- a. The Tenderer shall furnish, Earnest Money Deposit equivalent to 1% of ECV along with the tender. (As specified in NIT).

The balance EMD @ 1½% of ECV / TCN which ever is higher shall be paid at the time of concluding Agreement by the successful Tenderer. This EMD can be in the form of :

- a) a bank demand draft on any scheduled bank / Nationalised bank.
 - b. The earnest money deposited by the successful tenderer will not carry any interest and it will be dealt with as provided in the conditions stipulated in the tender. The E.M.D. shall be forfeited.
- (a) if the Tenderer withdraws the Tender during the validity period of Tender.
(b) in the case of a successful Tenderer, if he fails to sign the Agreement for whatever the reason.

D. SUBMISSION OF TENDERS.

40. Submission of Tenders:

- a. The Tenderers who are desirous of participating in 'e'procurement shall submit their bids in the Standard formats prescribed in the Tender documents, displayed at 'e'market place. The tenderers should upload the scanned copies in support of their Technical bids. The bidders shall sign on all the

statements, documents, certificates, uploaded by him, owning responsibility for their correctness / authenticity.

The bidder shall submit his response through bid submission to the tender on e-Procurement platform at www.e-Procurement.gov.in by following the procedure given below. The bidder would be required to register on the e-procurement market place www.e-Procurement.gov.in or <https://tender.e-Procurement.gov.in> and submit their bids online. No offline bids shall be entertained by the Tender Inviting Authority.

The bidders shall submit their eligibility and qualification documents, Technical bid, Financial bid etc., in the standard formats prescribed in the Tender documents, displayed in e-Procurement web site. The bidders shall upload the scanned copies of all the relevant certificates, documents etc., in support of their eligibility criteria/technical bids in the e-Procurement web site. The bidder shall sign on the statements, documents, certificates, uploaded by him, owning responsibility for their correctness/ authenticity.

1. Registration with e-Procurement platform:

For registration and online bid submission bidders may contact HELP DESK of M/s C1 India Pvt., Ltd., www.e-Procurement.gov.in or <https://tender.e-Procurement.gov.in>.

2. Digital Certificate authentication:

The bidder shall authenticate the bid with his Digital Certificate for submitting the bid electronically on e-Procurement platform and the bids not authenticated by digital certificate of the bidder will not be accepted on the e-Procurement platform.

All the bidders need to obtain Digital Certificates from APTS:
For obtaining Digital Signature Certificate, Please Contact:

TELANGANA Technology Services Limited
BRKR Bhavan, B-Block
Tank bund Road
Hyderabad-500022
Phone: +91-40-23220305
Fax: +91-40-23228057

3. Submission of Hard copies:

After submission of bid online, the bidders are requested to submit the originals of DD/BG towards EMD, DDs towards transaction fee, bid processing fee to the Tender Inviting Authority before opening of the price bid and other uploaded documents at the time of concluding agreement. The bidder shall invariably furnish the original DD/BG to the tender inviting authority before opening price bid either personally or through courier or by post and the receipt of the same within the stipulated time shall be the responsibility of bidder. The department shall not take any responsibility for any delay or non-receipt. If any of the documents furnished by the bidder is found to be false/fabricated/bogus, the bidder is liable for black listing, forfeiture of the EMD, cancellation of work and criminal prosecution.

The bidder is requested to get a confirmed acknowledgement from the Tender Inviting Authority as a proof of Hardcopies submission to avoid any discrepancy. The bidder has to attach the required documents after uploading the same as required by Tender Inviting Authority in its tender conditions.

4. Deactivation of Bidders:

The bidders found defaulting in submission of hard copies of original DD/BG for EMD /Transaction fee to the Tender Inviting Authority on or before the tender stipulated time for Price Bid Opening and other uploaded documents before concluding the agreement will be suspended / disqualified from participating in tenders on e-Procurement platform for a period of 12 months from date of bid submission as per G.O Ms No 245 I&CAD Dept. dated 30-12-2005 and GO Ms No 155 I&CAD Dept. dated 23-08-2006 besides forfeiture of EMD. Other conditions as per tender document are applicable.

5. Payment Of Transaction Fee and EMD:

It is mandatory for all the participating bidders to pay electronically the Transaction fee to M/s C1 India Pvt. Ltd, through "Payment Gateway Service on E-Procurement platform ". The Electronic Payment Gateway accepts all Master and Visa cards issued by any bank and Direct Debit facility / Net Banking of ICICI Bank, HDFC to facilitate the transaction. This is in compliance as per G.O Ms No 13 IT & C Dept, dated 5-7-2006. A service tax of 12.24 % + Bank Charges for Credit Card Transaction of 1.85% on the transaction Amount payable to C1 India Pvt, Ltd. Shall be applicable.

6. Tender Document:

The bidder is requested to download the tender document and read all the terms and conditions mentioned in the tender Document and seek clarification if in doubt from the Tender Inviting Authority. Any offline bid submission clause in the tender document shall not be considered.

The bidder has to keep track of any changes by viewing the addendum / Corrigendum's issued by the Tender Inviting Authority on time-to- time basis in the E-Procurement platform. The Department calling for tenders shall not be responsible for any claims/problems arising out of this.

7. Bid Submission Acknowledgement:

The user should complete all the processes and steps required for bid submission. The successful bid submission can be ascertained once acknowledgement is given by the system through bid submission number after completing all the process and steps. GOAP and C1 India is not responsible for incomplete bid submission by users. Users may also note that the incomplete bids will not be saved by the system and are not available for the Tender Inviting Authority for processing.

- b. The Department will not hold any risk and responsibility for the loss in transit during uploading of the scanned document, for the invisibility of the scanned document online, and any other problem(s) encountered by the Tenderers while submitting his bids online.
- c. The following certificates, documents etc., are to be scanned and uploaded on to the 'e'procurement platform at www.e-Procurement.gov.in.
- a) Copy of contractors registration certificate under appropriate class with Government of TELANGANA

- b) The availability of Key / critical construction / quality control equipment in Statement - V.
 - c) The availability of Key personnel in Statement - VI.
 - d) Any other document required as per NIT.(Experience certificate etc.)
- d. Any other condition regarding receipt of tenders in conventional method appearing in Tender document may be treated as Non-applicable.

41. Last date / time for Submission of the Tenders.

- a. Tenders must be submitted online not later than the date and time specified in NIT.
- b. The tender inviting authority may extend the dates for issue and receipt of Tenders by issuing an amendment in which case all rights and obligations of the tender inviting authority and the Tenderers will remain same as previously.

42. Late Tenders.

- a. Tenders will not be received after the last date / time prescribed in NIT.

43. Modification to the Tender.

- a. Tenderers can modify their Tender percentage online before the last date/time prescribed in NIT.
- b. No Tender shall be modified after the last date /time of submission of Tenders.
- c. In Modification Tenderer may offer, 'only discounts' to the percentage of the Tender percentage they quoted in the original Tender submitted prior to the last date and time specified for submission of Tenders.

E. TENDER OPENING AND EVALUATION

44. Tender opening

- a. The bids will be opened online by the Municipal Commissioner, NIZAMPET at the time and date as specified in the tender documents. All the Statements, documents, certificates, Demand Draft uploaded by the Tenders will be verified and downloaded, for technical evaluation. The clarifications, particulars, if any, required from the bidders, will be obtained either online or in the conventional method by addressing the bidders.

45. Clarification on the Technical Bid.

- a. The tender opening authority may call upon any tenderer for clarification on the statements, documentary proof relating to the technical bid. The request for clarification and response thereto shall be in writing and it shall be only on the qualification information uploaded online by the tenderer. The clarification called for from the tenderers shall be furnished within the stipulated time, which shall not be more than a week.
- b. The tenderer if so desirous, shall agree in writing to furnish the clarification called for within the stipulated time and, for disqualification and rejection of his tender in the event of failure to do so.

46. Examination of technical Bids and Determination of Responsiveness

- a. The Municipal Commissioner, NIZAMPET will evaluate whether each Tenderer is satisfying the eligibility criteria prescribed in the tender document and declares them as a qualified Tenderer.
- b. If the technical bid of a Tenderer is not satisfying any of the eligibility criteria it will be rejected by the Municipal Commissioner. However, the tender accepting authority detects any error in the evaluation of Tenders by the tender accepting authority while returning the tenders may direct the tender inviting authority as the case may be, to re-evaluate the tenders.
- c. If any alteration is made by the tenderer in the tender documents, the conditions of the contract, the drawings, specifications or statements / formats or quantities the tender will be rejected.

47. Price Bid Opening:

- a. At the specified date and time, the price bids of all the bidders will be opened online by the Municipal Commissioner and the result will be displayed on the 'e'market place which can be seen by all the bidders who participated in the Tenders.
- b. Tenders shall be scrutinised in accordance with the conditions stipulated in the Tender document. In case of any discrepancy of non-adherence Conditions the Tender accepting authority shall communicate the same which will be binding both on the tender Opening authority and the Tenderer. In case of any

ambiguity, the decision taken by the Tender Accepting Authority on tenders shall be final.

48. Evaluation and Comparison of Price Bids

- a. The Municipal Commissioner, NIZAMPET will evaluate and compare the price bids of all the qualified Tenderers.
- b. Selection of Tenderer among the lowest & equally quoted tenderers will be in the following orders:
 - a) The tenderer whose bid capacity is higher will be selected.
 - b) In case the bid capacity is also same the tenderer whose annual turnover is more will be preferred.
 - c) Even if the criteria incidentally become the same, the turnover on similar works and thereafter machinery available for the work and then the clean track record will be considered for selection.

49. Discrepancy in Tender percentage quoted.

- a. In case of any discrepancy between the overall tender percentage quoted in words and figures, the percentage quoted in words shall prevail.

50. Process to be Confidential.

- a. Information relating to the examination, clarification, evaluation and comparison of Tenders and recommendations for the award of a contract shall not be disclosed to Tenderers or any other persons not officially concerned with such process until the award to the successful Tenderer has been announced by the tender accepting authority. Any effort by a Tenderer to influence the processing of Tenders or award decisions may result in the rejection of his Tender.
- b. No Tenderer shall contact the SE(PH), West Circle, Hyderabad or any authority concerned with finalisation of tenders on any matter relating to its Tender from the time of the Tender opening to the time the Contract is awarded. If the Tenderer wishes to bring additional information to the notice of the SE(PH), West Circle, Hyderabad, it should do so in writing.
- c. Before recommending / accepting the tender, the tender recommending / accepting authority shall verify the correctness of certificates submitted to meet the eligibility criteria and specifically experience. The authenticated agreements of previous works executed by the lowest tenderer shall be called for.

F. AWARD OF CONTRACT

51. Award Criteria

- a. The Municipal Commissioner, NIZAMPET will award or recommend to the Competent tender accepting authority for award of the contract to the Tenderer who is found Technically qualified as per the Tender conditions and whose price bid is lowest.
- b. The tender accepting authority reserves the right to accept or reject any Tender or all tenders and to cancel the Tendering process, at any time prior to the award of Contract, without thereby incurring any liability to the affected Tenderer or Tenderers or any obligation to inform the affected Tenderer or Tenderers of the reasons for such action.

52. Notification of Award and Signing of Agreement.

- a. The Tenderer whose Tender has been accepted will be notified of the award of the work by the tender inviting authority, prior to expiration of the Tender validity period by registered letter. This letter (hereinafter and in the Conditions of Contract called "Letter of Acceptance") will indicate the sum that the Government 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 Amount").
- b. When a tender is to be accepted the concerned tenderer shall attend the office of the tender inviting authority concerned on the date fixed in the Letter of acceptance. Upon intimation being given by the tender inviting authority, of acceptance of his tender, the tenderers shall make payment of the balance E.M.D., and additional security deposit wherever needed by way of Demand Draft or required validity period and sign an agreement in the form prescribed by the department for the due fulfillment of the contract. Failure to attend the tender inviting authority office on the date fixed, in the written intimation, to enter into the required agreement shall entail forfeiture of the Earnest Money deposited. The written agreement to be entered into between the contractor and the Government/MUNICIPAL CORPORATION shall be the foundation of the rights and obligations of both the parties and the contract shall not be deemed to be complete until the agreement has first been signed by the contractor and then by the proper officer authorised to enter into contract on behalf of the Government/MUNICIPAL CORPORATION.

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- c. The successful tenderer has to sign an agreement within a period of 15 days from the date of receipt of communication of acceptance of his tender. On failure to do so his tender will be cancelled duly forfeiting the E.M.D., paid by him without issuing any further notice and action will be initiated for black listing the tenderer.

53. Corrupt or Fraudulent Practices

- a. The Government/MUNICIPAL CORPORATION require that the bidders / suppliers / contractors under Government/MUNICIPAL CORPORATION financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, the Government/MUNICIPAL CORPORATION.
 - (a) define for the purposes of the provision, the terms set forth below as follows:
 - (i) "corrupt practices" means the offering, giving, receiving or soliciting of any thing of value to influence the action of a Government/MUNICIPAL CORPORATION official in procurement process or in contract execution: and
 - (ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Government and includes collusive practice among Tenderers (prior to or after Tender submission) designed to establish in Tender prices at artificial non-competitive levels and to deprive the Government of the benefits of free and open competition.
 - (b) Will reject a proposal for award if it determines that the Tenderer recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question.
 - (c) Will blacklist / or debar a firm, either indefinitely or for a stated period of time, if at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing a Government Contract.
 - (d) Further more, Tenderers shall be aware of the provisions stated in the General Conditions of Contract.

QUALIFICATION INFORMATION

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QUALIFICATION INFORMATION

Annexure -I

CHECKLIST TO ACOMPANY THE TENDER

S.No	Description	Submitted	Page No. (see Note below)
1	2	3	4
1	Copy of Contractors valid Registration under appropriate Class with Government of TELANGANA/MUNICIPAL CORPORATION (for bidders who are not manufacturers of VT pumps)	Yes / No	
2	Copy of latest Income Tax clearance certificate.	Yes / No	
3	Copies of Commercial Tax, / VAT Registration and latest Commercial Tax clearance certificate.	Yes / No	
4	Availability of critical equipment in Statement -I.	Yes / No	
5	Availability of Key personnel in Statement-II	Yes / No	
6	List of certificates enclosed	Yes / No	
7	Declaration regarding black listing etc.,	Yes / No	

Notes:-

1. All the statements copies of the certificates, documents etc., shall be given page numbers on the right corner of each certificate, which will be indicated in column (4) against each item. The statements furnished shall be in the formats appended to the tender document.
- 2) The information shall be filled-in by the Tenderer in the checklist and statements I to VII, for the purposes of verification as well as evaluation of the tenderer's Compliance to the qualification criteria as provided in the Tender document.

DECLARATION

I / WE have gone through carefully all the Tender conditions and solemnly declare that I / we will abide by any penal action such as disqualification or black listing or determination of contract or any other action deemed fit, taken by, the Department against us, if it is found that the statements, documents, certificates produced by us are false / fabricated.

I / WE hereby declare that, I / WE have not been blacklisted / debarred / Suspended / demoted in any department in TELANGANA or in any State due to any reasons.

Signature of the Tenderer

STATEMENT - I

Availability of Critical Equipment

The tenderer should furnish the information required below, regarding the availability of the equipment, required for construction / quality control.

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Sl. No.	Details of Equipment	Number required	Number		
			Owned	Leased	To be procured
1	2	3	4	5	6

Signature of the Tenderer

A declaration regarding the equipment owned shall be produced by the Tenderer on a non-judicial stamp paper of Rs..... as below;

DECLARATION

“I do hereby solemnly affirm and declare that I /we own the following equipment for using on the subject work and also declare that I / We will abide by any action such as disqualification or determination of Contract or blacklisting or any action deemed fit, if the department detects at any stage that I/we do not possess the equipment listed below.

Sl. No.	Details of each Equipment	Year of purchase	Regn. Number	Capacity	Any other data.	Is it in working condition
1	2	3	4	5	6	7

STATEMENT – II.

Availability of Key Personnel

Qualification and experience of Key Personnel proposed to be deployed for execution of the Contract.

Sl. No	Name	Designation	Qualification	Total Experience	Working with the Tenderer since.
1	2	3	4	5	6

Signature of the Tenderer

STATEMENT - III

Information on litigation history in which Tenderer is the Petitioner.

S. No	Case No. / Year	Court where filed.	Subject Matter / Prayer in the case.	Respondents i.e., SE / CE	Present Stage.
1	2	3	4	5	6

Signature of the Tenderer

TENDERER

MUNICIPAL COMMISSIONER

CONDITIONS OF CONTRACT

TENDERER

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TENDER

Covering Letter

[To be submitted along with Original EMD]

Date:

To
**The Municipal Commissioner,
NIZAMPET MUNICIPAL CORPORATION,
NIZAMPET.**

Sir,

I / We do hereby tender and if this tender be accepted, under take to execute the following work **Door to Door Propagation and awareness of Segregation of wet and dry waste by Swachh Dhoot under Capacity Building Skill Development and Knowledge Management in Nizampet Municipal Corporation under SBM 2.0 Funds 2024-25**

as shown in the drawings and described in the specifications deposited in the office of the SE(PH), West Circle, Hyderabad with such variations by way of alterations or additions to, and omissions from the said works and method of payment as provided for in the "conditions of the contract" for the sum of Rupees

.....
..... **or such other sum as may be arrived under the clause of the standard preliminary specifications relating to "Payment on lump-sum basis or by final measurement at unit rates"**

I/WE have also quoted percentage excess or less on E.C.V., in Schedule 'A' Part-I, annexed (in words and figures) for which I/We agree to execute the work when the lumpsum payment under the terms of the agreement is varied by payment on measurement quantities.

I/WE have quoted Percentage excess or less on E.C.V., in Schedule 'A' Part – I both in words & figures. In case of any discrepancy between the Percentage excess or less on E.C.V., in words and figures, the rates quoted words only shall prevail.

I/WE agreed to keep the offer in this tender valid a period of Three month(s) mentioned in the tender notice and not to modify the whole or any part of it for any reason within above period. If the tender is withdrawn by me/us for any reasons whatsoever, the earnest money paid by me/us will be forfeited to Government

I/WE hereby distinctly and expressly, declare and acknowledge that, before the submission of my/our tender I/We have carefully followed the instructions in the tender notice and have read the A.P.S.S. and the preliminary specifications therein and the A.P.S.S. addenda volume and that I/We have made such examination of the contract documents and the plans, specifications and quantities and of the location where the said work is to be done, and such

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investigation of the work required to be done, and in regard to the material required to be furnished as to enable me/us to thoroughly understand the intention of same and the requirements, covenants, agreements, stipulations and restrictions contained in the contract, and in the said plans and specifications and distinctly agree that I/We will not hereafter make any claim or demand upon the Government/Municipal based upon or arising out of any alleged misunderstanding or misconception /or mistake on my/or our part of the said requirement, covenants, agreements, stipulations, restrictions and conditions.

I/WE enclosed to my/our application for tender a crossed demand draft (No.....dated:..... ..) for Rs.....as earnest money not to bear interest.

I/WE shall not assign the contractor or sublet any portion of the same. In case if it becomes necessary such subletting with the permission of the Executive Engineer/ tender inviting authority shall be limited to (1) Labour contract, (2) Material contract, (3) Transport contract and (4) Engaging specialists for special item of work enjoined in A.P.S.S.

IF MY/OUR tender is not accepted the sum shall be returned to me/us on application when intimation is sent to me/us of rejection or at the expiration of three months from last date of receipt of this tender, whichever is earlier. If my/our tender is accepted the earnest money shall be retained by the Government/MUNICIPAL CORPORATION as security for the due fulfillment of this contract. If upon written intimation to me/us by the tender inviting authority Office, I/We fail to attend the said office on the date herein fixed or if upon intimation being given to me/us by the Superintending /Executive Engineer or acceptance of my/our tender, and if I/We fail to make the additional security deposit or to enter into the required agreement as defined in condition-3 of the tender notice, then I/We agree the forfeiture of the earnest money. Any notice required to be served on me/us here under shall be sufficiently served on me/us if delivered to me/us hereunder shall be sufficiently served on me/us if delivered to me/us personally or forwarded to me/us by post to (registered or ordinary) or left at my/our address given herein. Such notice shall if sent by post be deemed to have been served on me/us at the time wherein due course of post it would be delivered at the address to which it is sent.

I/WE fully understand that the written agreement to be entered into between me/us and Government/MUNICIPAL CORPORATION shall be the foundation of the rights of the both the parties and the contract shall not be deemed to be complete until the agreement has first been signed by me/us and then by the proper officer authorised to enter into contract on behalf of Government.

I/WE agree to pay the Transaction fee at 0.04% on Estimated Contract value of the work through a Demand Draft drawn in favour of APTS, Hyderabad at the time of conclusion of Agreement.

I AM/WE ARE professionally qualified an my/our qualifications are given below:

Name	Qualified
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I/WE will employ the following technical staff for supervising the work and will see that one of them is always at site during working hours, personally checking all items of works and pay extra attention to such works as required special attention (eg) Reinforced concrete work.

Name of members of technical staff proposed to be employed	Qualification.
--	----------------

I / WE declare that I/WE agree to recover the salaries of the technical staff actually engaged on the work by the department, from the work bills, if I/We fail to employ technical staff as per the tender condition.

TENDERERS / CONTRACTOR'S CERTIFICATE.

- (1) I/WE hereby declare that I/We have perused in detail and examined closely the TELANGANA Standard Specifications, all clauses of the preliminary specifications with all amendments and have either examined all the standards specifications or will examine all the standard specifications for items for which I/We tender, before I/We submit such tender and agree to be bound and comply with all such specifications for this agreement which I/We execute in the PH & ME Department.
- (2) I/WE certify that I/We have inspected the site of the work before quoting my Percentage excess or less on ECV, I /We have satisfied about the quality, availability and transport facilities for stones sand and other materials.
- (3) I/WE am/are prepared to furnish detailed data in support of all my quoted rates, if and when called upon to do so without any reservations.
- (4) I/WE hereby declare that I/We will pay an additional security deposit in terms of conditions, the difference between 75% of ECV and my/out tender amount, in case if my / our offer is less than (-)25%.
- (5) I/WE hereby declare that I am/we are accepting to reject my tender in terms of condition, if my /our offer is more than 5% of ECV.
- (6) I/WE hereby declare that I/We will not claim any price escalation.

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- (7) I/WE hereby declare that I am/We are accepting for the defect liability period as 24 months (After completion of work) instead of 6 ;months under clause 28 of APSS.
- (8) a) I/WE declare that I/WE will procure the required construction materials including earth and use for the work after approval of the Engineer-in-Charge. The responsibility for arranging and obtaining the land for borrowing or exploitation in any other way shall rest with me/us for the materials for construction, I/WE shall ensure smooth and un-interrupted supply of materials.
- b) I/WE declare that the responsibility for arranging and obtaining the land for disposal of spoil/soil not useful for construction purposes shall rest with me/us.
- c) I/WE declare that I/WE shall not claim any compensation or any payment for the land so arranged for disposal of soil and the land for borrow area. My/our quoted percentage excess or less ECV., are inclusive of the land so arranged and I/We will hand over the land so arranged for disposal of soil to; the department after completion of work.
- (9) I/WE declare that I/WE will abide for settlement of disputes as per the tender conditions.

DECLARATION OF THE TENDERER.

- 1) I/WE have not been black listed in any department in TELANGANA due to any reasons.
- 2) I/WE have not been demoted to the next lower category for not filing the tenders after buying the tender schedules in a whole year and my/our registration has not been cancelled for a similar default in two consecutive years.
- 3) I/WE agree to disqualify me/us for any wrong declaration in respect of the above and to summarily reject my/our tender.

Address of the Tenderer :

Phone No.:

Fax No.:

CONTRACTOR.

TENDERER

MUNICIPAL COMMISSIONER

CONDITIONS OF CONTRACT

A. GENERAL

1. Interpretation:

- 1.1 In interpreting these Conditions of Contract, singular also means plural, male also means female, and vice-versa. Headings have no significance. Words have their normal meaning under the language of the contract unless specifically defined. The Engineers-in-charge will provide instructions clarifying queries about the conditions of Contract.
- 1.2 The documents forming the Contract shall be interpreted in the following order of priority:
- 1) Agreement
 - 2) Letter of Acceptance, notice to proceed with the works
 - 3) Contractor's Tender (Technical bid)
 - 4) Conditions of contract
 - 5) Specifications
 - 6) Drawings
 - 7) Bill of quantities (Price-bid)
 - 8) Any other document listed as forming part of the Contract.

2. Engineer-in-Charge's Decisions:

- 2.1 Except where otherwise specifically stated, the Engineer-in-charge will decide the contractual matters between the Department and the Contractor in the role representing the Department.

3. Delegation:

- 3.1 The Engineer-in-charge may delegate any of his duties and responsibilities to other officers and may Cancel any delegation by an official order issued.

4. Communications:

- 6.1 Communications between parties, which are referred to in the conditions, are effective only when in writing. A notice shall be effective only when it is delivered (in terms of Indian Contract Act)

5. Other Contractors:

- 8.1 The Contractor shall cooperate and share the Site with other contractors, Public authorities, utilities, and the Department. The Contractor shall also provide facilities and services for them as directed by the Engineer-in-charge.

6. Personnel:

- 6.1 The Contractor shall employ the required Key Personnel named in the Schedule of Key Personnel to carry out the functions stated in the Schedule or other personnel approved by the Engineer-in-charge. The Engineer-in-charge will approve any proposed replacement of Key Personnel only if their qualifications, abilities, and relevant experience are substantially equal to or better than those of the personnel listed in the Schedule.
- 6.2 Failure to employ the required technical personnel by the contractor the following amounts will be recovered from the contractor over and above the provision made in part two of schedule-A from the contractors bills.
- 6.3 The technical personnel should be on full time and available at site whenever required by Engineer in Charge to take instructions.
- 6.4 The names of the technical personnel to be employed by the contractor should be furnished in the statement enclosed separately.
- 6.5 In case the contractor is already having more than one work on hand and has undertaken more than one work at the same time, he should employ separate technical personnel on each work.
- 6.6 If the contractor fails to employ technical personnel the work will be suspended or department will engage a technical personnel and recover the cost thereof from the contractor.
- 6.7 If the Engineer-in-charge asks the Contractor to remove a person who is a member of Contractor's staff or his work force stating the reasons the Contractor shall ensure that the person leaves the site forthwith and has no further connection with the work in the contract.

7. Contractor's Risks:

- 7.1 All risks of loss of or damage to physical property and of personnel injury and death, which arise during and in consequence of the performance of the Contract are the responsibility of the Contractor.

8. Insurance:

- 8.1 The Contractor shall provide, in the joint names of the Department and the contractor, insurance cover from the Start Date to the end of the Defects Liability Period i.e., 24 months after completion for the following events which are due to the Contractor's risks.
- a) loss of or damage to the Works, Plant and Materials;
 - b) loss of or damage to the Equipment;
 - c) loss of or damage of property in connection with the Contract; and
 - d) personal injury or death of persons employed for construction.
- 8.2 Policies and certificates of insurance shall be delivered by the Contractor to the SE(PH), West Circle, Hyderabad at the time of concluding Agreement. All such

insurance shall provide for compensation to be payable to rectify the loss or damage incurred.

- i) The contractor shall furnish insurance policy in force in accordance with proposal furnished in the Tender and approved by the Department for concluding the agreement.
- ii) The contractor shall also pay regularly the subsequent insurance premia and produce necessary receipt to the Engineer-in-Charge, well in advance.
- iii) In case of failure to act in the above said manner the department will pay the premium and the same will be recovered from the Contractors payments.

8.3 Alterations to the terms of insurance shall not be made without the approval of the Engineer-in-Charge.

9. Site Inspections:

9.1 The contractor should inspect the site and also proposed quarries of choice for materials source of water and quote his percentage including quarrying, conveyance and all other charges etc.

9.2 The responsibility for arranging the land for borrow area rests with the Contractor and no separate payment will be made for procurement or otherwise. The contractor's quoted percentage will be inclusive of land cost.

10. Contractor to Construct the Works:

10.1 The Contractor shall construct and Commission the Work in accordance with the specifications and Drawings.

11. Diversion of streams / Vagus / Drains.

11.1 The contractor shall at all times carry out construction of cross drainage works in a manner creating least interference to the natural flow of water while consistent with the satisfactory execution of work. A temporary diversion shall be formed by the contractor at his cost where necessary. No extra payment shall be made for this work.

11.2 No separate payment for bailing out sub-soils, water drainage or locked up rain water for diversion, shoring, foundations, bailing of pumping water either from excavation of soils from foundations or such other incidental will be paid. The percentage to be quoted by the contractor are for the finished item of work in situ and including all the incidental charges. The borrow pits are also to be de-watered by the contractor himself at his expense, if that should be found necessary.

11.3 The work of diversion arrangements should be carefully planned and prepared by the contractor and forwarded to the Executive Engineer technically substantiating the proposals and approval of the Executive Engineer obtained for execution.

- 11.4 The contractor has to arrange for bailing out water, protection to the work in progress and the portion of works already completed and safety measures for men and materials and all necessary arrangements to complete the work.
- 11.5 All the arrangements so required should be carried out and maintained at the cost of the contractor and no separate or additional payments is admissible..
- 11.6 Coffers Dams.
Necessary coffer dams and ring bunds have to be constructed at the cost of contractor and same are to be removed after the completion of the work. The contractor has to quote his percentage keeping the above in view.

12. Power Supply.

- 12.1 The contractor shall make his own arrangements for obtaining power from the Electricity dept., at his own cost. The contractor will pay the bills of Electricity Department for the cost of power consumed by him.
- 12.2 The contractor shall satisfy all the conditions and rules required as per Indian Electricity Act 1910 and under Rule-45(I) of the Indian Electricity Rules, 1956 as amended from time to time and other pertinent rules.
- 12.3 The power shall be used for bonafide Departmental work only.

13. Temporary Diversions (Works on Highways)

- 13.1 The contractor shall at all times carryout work on the highway in a manner creating least interference to the flow of traffic while consistent with the satisfactory execution of the same. For all works involving improvements to the existing highway, the contractor shall in accordance with the directions of the Engineer-in-charge provide and maintain during the execution of the work a passage for traffic, either along a part of the existing carriage way under improvement or along a temporary diversion constructed close to the highway.
- 13.2 If in the opinion of the Engineer-in-Charge, it is not possible to pass the traffic on part width of the carriage-way for any reason, a temporary diversion close to the highway shall be constructed as directed. It shall be paved with the materials such as hard morum, gravel and stone, metal to the specified thickness as directed by the Engineer-in-Charge. In all cases, the alignment, gradients and surface type of the diversion including its junctions, shall be approved by the Engineer-in-charge before the highway is closed to traffic.
- 13.3 The contractor shall take all necessary measures for the safety of traffic during construction and provide erect and maintain such barricades, including signs, markings, flags lights and information and protection of traffic approaching or passing through the section of the highway under improvement. Before taking up any construction, an agreed phased programme for the diversion of traffic on the highway shall be drawn up in consultation with the Engineer-in-charge.

13.4 The barricades erected on either side of the carriage way portion of the carriage way closed to traffic, shall be of strong design to resist violation and painted with alternative black and white stripe. Red lanterns or warnings lights of similar type shall be mounted on the barricades at night and kept lit throughout from sunset to sunrise.

14. Ramps:

Ramps required during execution may be formed wherever necessary and same are to be removed after completion of the work. No separate payment will be made for this purpose.

15. Monsoon Damages:

Damages due to rain or flood either in cutting or in banks shall have to be made good by the contractor till the work is handed over to the Department. The responsibility of de-silting and making good the damages due to rain or flood rests with the contractor. No extra payment 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.

16. The works to be Completed by the Intended Completion Date:

16.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the programme submitted by the Contractor, as updated with the approval of the Engineer-in-Charge, and complete the work by the Intended Completion Date.

17. Safety:

17.1 The Contractor shall be responsible for the safety of all activities on the Site.

18. Discoveries:

18.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site is the property of the Government. The Contractor is to notify the Engineer-in-charge of such discoveries and carry out the Engineer-in-Charge's instructions for dealing with them.

19. Possession of the Site.

19.1 The Department shall give possession of the site to the Contractor. If possession of a part site is given, the Department will ensure that the part site so handed over is amenable to carryout the work at site by the Contractor.

20. Access to the Site:

20.1 The Contractor shall provide the Engineer-in-Charge and any person authorised by the Engineer-in-Charge, access to the site and to any place where work in connection with the Contract is being carried out or is intended to be carried out.

21. Instructions:

21.1 The Contractor shall carry out all instructions of the Engineer-in-charge and comply with all the applicable local laws where the Site is located.

22. Settlement of disputes:

22.1 If any dispute of difference of any kind whatsoever arises between the department and the Contractor in connection with, or arising out of the Contract, whether during the progress of the works or after their completion and whether before or after the termination, abandonment or breach of the Contract, it shall in the first place, be referred to and settled by the Engineer-in-charge who shall, within a period of thirty days after being requested by the Contractor to do so, give written notice of his decision to the Contractor. Upon receipt of the written notice of the decision of the Engineer-in-Charge the Contractor shall promptly proceed without delay to comply with such notice of decision.

22.2 If the Engineer-in-Charge fails to give notice of his decision in writing within a period of thirty days after being requested or if the Contractor is dissatisfied with the notice of the decision of the Engineer-in-Charge, the Contractor may within thirty days after receiving the notice of decision appeal to the Department who shall offer an opportunity to the contractor to be heard and to offer evidence in support of his appeal, the Department shall give notice of his decision within a period of thirty days after the Contractor has given the said evidence in support of his appeal, subject to arbitration, as hereinafter provided. Such decision of the Department in respect of every matter so referred shall be final and binding upon the Contractor and shall forthwith be given effect to by the Contractor, who shall proceed with the execution of the works with all due diligence whether he requires arbitration as hereinafter provided, or not. If the Department has given written notice of his decision to the Contractor and no claim to arbitration, has been communicated to him by the Contractor within a period of thirty days from receipt of such notice the said decision shall remain final and binding upon the Contractor. If the Department fail to give notice of his decision, as aforesaid within a period of thirty days after being requested as aforesaid, or if the Contractor be dissatisfied with any such decision, then and in any such case the contractor within thirty days after the expiration of the first named period of thirty days as the case may be, require that the matter or matters in dispute be referred to arbitration as detailed below:-

SETTLEMENT OF CLAIMS:

Settlement of claims for Rs.50,000/- and below by Arbitration.

All disputes or difference arising of or relating to the Contract shall be referred to the adjudication as follows:

- a) Claims upto a value of Rupees 10,000/-
- Superintending Engineer
- b) Claims above Rs.10,000/- and upto Rupees 50,000/-
- Another Chief Engineer,

The arbitration shall be conducted in accordance with the provisions of Indian Arbitration and Conciliation Act 1996 or any statutory modification thereof.

The arbitrator shall state his reasons in passing the award.

Claims above Rs.50,000/-.

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All claims of above Rs.50,000/- are to be settled by a Civil Court of competent jurisdiction by way of Civil suit and not by arbitration.

A reference for adjudication under this clauses shall be made by the contractor within six months from the date of intimating the contractor of the preparation of final bill or his having accepted payment which ever is earlier.

B. TIME FOR COMPLETION

23. Program:

- 23.1 The total period of completion is (as specified in the NIT) from the date of entering with agreement to proceed including rainy season. Keeping in view, the schedule for handing over of site given in condition 11.2 below, the work should be programmed such as to achieve the mile-stones as in "Rate of progress statement" enclosed.
- 23.2 The attention of the tenderer is directed to the contract requirement at the time of beginning of the work, the rate of progress and the dates for the whole work and its several parts as per milestones. The following rate of progress and proportionate value of work done from time to time as will be indicated by the Executive Municipal Certificate for the value of work done and completion of mile-stones will be required. Date of commencement of their programme will be the date for concluding agreement.
- 23.3 After signing the agreement, the contractor shall forthwith begin the work, shall regularly and continuously proceed with them.
- 23.4 Rate of progress :
- i) Work programme of achieving the milestones (Statement).
 - ii) Site. Schedule of programme of handing over Site to the Contractor. (Statement).
- 23.5 The contractor shall commence the works on site within the period specified under condition 11.1 to 11.3 above after the receipt by him of a written order to this effect from the Municipal authority and shall proceed with the same with due expedition and without delay, except as may be expressly sanctioned or ordered by the Municipal Authority, or be wholly beyond the contractor's control.
- 23.6 Save in so far as the contractor may prescribe, the extent of portions of the site of which the contractor is to be given possession from time to time and the order in which such portions shall be made available to him and, Subject to any requirement in the contract as to the order in which the works shall be executed, the Commissioner will, with the Engineer-in-Charge's written order to commence the works, give to the contractor possession of so much of the site as may be required to enable the contractor to commence proceed with the execution of the works in accordance with the programme if any, and otherwise in accordance with such reasonable proposals of the contractor as he shall by written notice to the Commissioner, make and will from time to time

as the works proceed, give to the contractor possession of such further portions of the site as may be required to enable the contractor to proceed with the execution of the works with due dispatch in accordance with the said programme or proposals as the case maybe ; if the contractor suffers delay or incurs cost from failure on the part of the Commissioner to give possession in accordance with the terms of this clause, the Commissioner shall grant an extension of time for the completion of works.

23.7 The contractor shall bear all costs and charges for special or temporary way leases required by him in connection with access to the site. The contractor shall also provide at his own cost any additional accommodation outside the site required by him for the purposes of the work.

23.8 Subject to any requirement in the contract as to completion of any section of the works before completion of the whole of the works shall be completed in accordance with provisions of clauses in the Schedule within the time stated in the contract calculated from the last day of the period named in the statement to the tender as that within which the works are to be commenced or such extended time as may be allowed.

23.9 Delays and extension of time:

No claim for compensation on account of delays or hindrances to the work from any cause whatever shall lie, except as hereafter defined. Reasonable extension of time will be proposed by the Executive Engineer to SE(PH), West Circle, Hyderabad to sanction the extension, for unavoidable delays, such as may result from causes, which in the opinion of the Executive Engineer, are undoubtedly beyond the control of the contractor.

In the event of the Engineer-in-Charge failing to issue necessary instructions and thereby causing delay and hindrance to the contractor, the latter shall have the right to claim an assessment of such delay by the MUNICIPAL CORPORATION whose decision will be final and binding. The contractor shall lodge in writing with the Engineer-in-Charge a statement of claim for any delay or hindrance referred to above, within fourteen days from its commencement, otherwise no extension of time will be allowed.

Whenever authorized alterations or additions made during the progress of the work are of such a nature in the opinion of the Engineer-in-Charge as to justify an extension of time in consequence thereof, such extension will be granted by the SE(PH), West Circle, Hyderabad based on Executive Engineer's recommendations when ordering such alterations or additions.

24. Construction Programme:

24.1 The Contractor shall furnish within one month of the order of the work a programme showing the sequence in which he proposed to carry out the work, monthly progress expected to be achieved, also indicating date of procurement of materials plant and machinery. The schedule should be such that it is practicable to achieve completion of the whole work within the time limit fixed and in keeping with the Mile stone programme specified and shall

obtain the approval of the Engineer-in-charge. Further rate of the progress as in the program shall be kept up to date. In case it is subsequently found necessary to alter this program, the contractor shall submit sufficiently in advance the revised program incorporating necessary modifications and get the same approved by the Engineer-in-charge. No revised program shall be operative without approval of Engineer-in-charge.

24.2 The Commissioner shall have all times the right, without any way violating this contract, or forming grounds for any claim, to alter the order of progress of the works or any part thereof and the contractor shall after receiving such directions proceed in the order directed. The contractor shall also report the progress to the Commissioner within 7 days of the Engineer-in-Charge's direction to alter the order of progress of works.

24.3 The Contractor shall give written notice to the Engineer-in-Charge whenever planning or progress of the works is likely to be delayed or disrupted unless any further drawings or order including a direction, instruction or approval is issued by the Engineer-in-Charge within a reasonable time. The notice shall include details of the drawing or order required and of why and by when it is required and of any delay or disruption likely to be suffered if it is late.

25. Speed of Work:

25.1 The Contractor shall at all times maintain the progress of work to conform to the latest operative progress schedule approved by the Engineer-in-Charge. The contractor should furnish progress report indicating the programme and progress once in a month. The Engineer-in-Charge may at any time in writing direct the contractor to slow down any part or whole of the work for any reason (which shall not be questioned) whatsoever, and the contractor shall comply with such orders of the Engineer-in-Charge. The compliance of such orders shall not entitle the contractor to any claim of compensation. Such orders of the Engineer-in-Charge for slowing down the work will however be duly taken into account while granting extension of time if asked by the contractor for which no extra payment will be entertained.

25.2 Delays in Commencement or progress or neglect of work and forfeiture of earnest money, Security deposit and withheld amounts:

If, at any time, the Engineer-in-Charge shall be of the opinion that the Contractor is delaying Commencement of the work or violating any of the provisions of the Contractor is neglecting or delaying the progress of the work as defined by the tabular statement. "Rate of progress" in the Articles of Agreement", he shall so advise the Contractors in writing and at the same time demand compliance in accordance with conditions of Tender notice. If the Contractor neglects to comply with such demand within seven days after receipt of such notice, it shall then or at any time there after, be lawful for the Engineer-in-Charge to take suitable action in accordance with Clause.60 of APSS.

26. Suspension of works by the Contractor:

- 26.1 If the Contractor shall suspend the works, or sublet the work without sanction of the Engineer-in-Charge, or in the opinion of the Engineer-in-Charge shall neglect or fail to proceed with due diligence in the performance of his part of the Contract as laid down in the Schedule rate of progress, or if he shall continue to default or repeat such default in the respects mentioned in clause.27 of the APSS Engineer-in-Charge shall take action in accordance with Clause 61 of APSS.
- 26.2 If the Contractor stops work for 28 days and the Stoppage has not been authorised by the Engineer-in-Charge the Contract will be terminated under Clause 61 of APSS.
- 26.3 If the Contractor has delayed the completion of works the Contract will be Terminated under Clause.61 of APSS.

27. Extension of the Intended Completion Date:

- 27.1 The Executive Engineer shall recommend for extension, in accordance with the Government orders inforce, the Intended Completion Date if a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date.
- 27.2** The Engineer-in-Charge shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Engineer for a decision upon the effect of a Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

28. Delays Ordered by the Engineer-in-Charge:

- 28.1 The Engineer-in-Charge may instruct the Contractor to delay the start or progress of any activity within the Work.

29. Early Warning:

- 29.1 The contractor is to warn the Engineer-in-Charge at the earliest opportunity of specific likely future events or circumstances that may adversely affect the Execution of Works.
- 29.2 The Contractor shall cooperate with the Engineer-in-Charge in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Engineer-in-Charge.

30. Management Meetings:

- 30.1 The Engineer-in-Charge may require the Contractor to attend a management meeting. The business of a management meeting shall be to review the

programme for remaining work and to deal with matters raised in accordance with the early warning procedure.

C. QUALITY CONTROL

31. Identifying Defects:

31.1 The Engineer-in-Charge shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Engineer-in-Charge may instruct the Contractor to verify the Defect and to uncover and test any work that the Engineer considers may be a Defect.

32. Tests:

32.1 If the Engineer-in-Charge instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the Contractor shall pay for the test and any samples.

33. Correction of Defects:

33.1 The Engineer-in-Charge shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins on Completion. The defects liability period shall be extended for as long as defects remain to be corrected by the Contractor.

33.2 Every time notice of a Defect is given, the Contractor shall correct the notified defect within the length of time specified by the Engineer-in-Charge's notice.

34. Uncorrected Defects:

34.1 If the contractor has not corrected the defect within the time specified in the Engineer-in-Charge's notice, the Engineer-in-Charge will assess the cost of having the defect corrected and the contractor will pay this amount.

34.2 The Engineer-in-Charge may also introduce check lists which shall be kept in Bound registers by the construction supervision staff. The contractor may be required to fill up these lists in the first instance and shall be subsequently checked by the Construction / Quality Control engineers.

35. Quality Control:

In addition to the normal inspection by the regular staff in-charge of the Construction of work, the work will also be inspected by the Executive Engineer

/Superintending Engineer Quality control Circle or by the State or District level Vigilance Cell Unit and Third Party Quality Control is mandatory the charges for which are to be borne by the Urban Local Bodies (MUNICIPAL CORPORATION), the instruction from Government and ENC (PH) should be followed scrupulously in this regard. If any sub-standard work or excess payments are noticed with reference to measurement books etc., during inspection, action will be taken based on their observations and these will be effected by the Engineer-in-Charge of the execution of the work.

D. Cost Control

36. Bill of Quantities:

- 36.1 The Bill Quantities shall contain items for the construction work to be done by the Contractor.
- 36.2 The Contractor is paid for the quantity of the work done at the estimate rate in the Bill of Quantities for each item plus or minus Tender percentage.

37. Changes in the Quantities:

- 37.1 The contractor is bound to execute all supplemental works that are found essential, incidental and inevitable during execution of main work.
- 37.2 The payment of rates for such supplemental items of work will be regulated as under;

Supplemental items directly deducible from similar items in the original agreement.

- 37.2.1 The rates shall be derived by adding to or subtracting from the agreement rate of such similar item the cost of the difference in the quantity of materials labour between the new items and similar items in the agreement worked out with reference to the Standard Schedule of Rates adopted in the sanctioned estimate with which the tenders are accepted plus or minus over all tender percentage.
- 37.2.2 (a) Similar items but the rates of which cannot be directly deduced from the original agreement.
- (b) Purely new items which do not correspond to any item in the agreement.
- 37.2.3 The rates of all such items shall be Estimated Rates plus or minus overall Tender premium.

38. Extra Items:

- 38.1 Extra items of work shall not vitiate the contract. The contractor shall be bound to execute extra items of work as directed by the Engineer-in-Charge. The rates

for extra items shall be worked out by the Engineer-in-Charge as per the conditions of the Contract and the same are binding on the Contractor.

38.2 The contractor shall before the 15th day of each month, submit in writing to the Engineer-in-Charge a statement of extra items if any that they have executed during the preceding month failing which the contractor shall not be entitled to claim any.

38.3 Entrustment of additional items:

38.3.1 Entrustment of the additional items contingent on the main work will be authorised by the officers upto the monetary limits upto which they themselves are competent to accept items in the original agreement so long as the total amounts upto which they are competent to accept in an original agreement rates for such items shall be worked out in accordance with the procedure (I) For all items of work in excess of the quantities shown in the Bill of Quantities of the Tenders, the rate payable for such items shall be estimate rates for the items (+) or (-) over all tender percentage accepted by the competent authority.

38.3.2 Entrustment of either the additional or supplemental items shall be subject to the provisions of the agreement entered into by a Competent Authority after the tender is accepted. The estimate technical sanctioned authority approves the rate for the items / variation in quantity in the current agreement. The items shall not be ordered by an officer on his own responsibility if the revised estimate or deviation statement providing for the same requires the sanction of higher authority.

Note: It may be noted that the term Estimate Rate used above means the rate in the sanctioned estimate with which the tenders are accepted, or if no such rates is available in the estimate, the rate derived will be with reference to the Standard Schedule of Rates adopted in the sanctioned estimate with which tenders are accepted.

39. Cash flow forecasts:

39.1 When the program is updated, the contractor is to provide the Engineer-in-charge with an updated cash flow forecast.

40. Payment Certificates:

40.1 The Contractor shall submit to the Engineer-in-charge monthly statements of the estimated value of the work completed less the cumulative amount certified previously.

40.2 The Engineer-in-charge shall check the Contractor's monthly statement within 14 days.

40.3 The value of work executed shall be determined by the Engineer-in-charge.

40.4 The value of work executed shall comprise the value of the quantities of the items in the Bill of Quantities completed.

40.5 The Engineer-in-charge may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

41. Payments:

41.1 Payment for the work done by the contractor will be made for the finished work based on the measurements recorded in measurement books by any officer of the department not lower in rank than a Assistant Engineer and check measured by any officer not lower in rank than a Deputy Executive Engineer. The measurement shall be recorded at various stages of the work done and also after work is completed. The contractor shall be present at the time of recording of each set of measurement and their check measurement and accept them then and there so as to avoid disputes at a later stage. If the contractor is not available at the workspot at the time of recording measurements or check measurements the particulars of measurements shall be signed by the authorised agent of contractor based on which the contractor shall accept the set of measurements without any further dispute. If for any reason the contractor's authorised agent is also not available at site when the department decides to suspend the work recording of measurements in the absence of the contractor or his authorised representative the department shall not entertain any claim from the contractor for any loss incurred by him on this account. The Contractor shall however note that the Department cannot indefinitely wait for recording the measurement due to the absence of the Contractor and his authorised agent and check measure them even in the absence of the contractor.

41.2 The actual volume of stone and aggregates shall be computed after deducing the following percentages from the volume computed by stack measurements.

S. No	Standard size of aggregate and stone	Percentage reduction in volume computed by stack measurements to arrive at the volume to be paid for
1.	Stone	40
2.	40 mm and 25 mm	10
3.	20 mm, 12 mm, 10 mm & 6 mm	5
4.	Fine aggregate	Nil
5.	Gravel	20

[Note: The above Table may be modified depending on the type of work.]

Unless otherwise directed, measurements shall not be taken until sufficient materials for use on work have been collected and stacked. Immediately after measurement, the stack shall be marked by white wash or other means as directed by the Engineer-in-charge.

41.3 Payments and Certificates:

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- 41.3.1 Payments shall be adjusted for recovery of advance payments, liquidated damages in terms of tender conditions and security deposit for the due fulfillment of the contract. Payment will be made to the Contractor under the certificate to be issued at reasonably frequent intervals by the Engineer-in-Charge, and intermediate payment will be the sum equal to 92½% of the value of work done as so certified and balance of 7½% will be withheld and retained as security for the due fulfillment of the contractor under the certificate to be issued by the Engineer-in-Charge. On completion of the entire works the contractor will receive the final payment of all the moneys due or payable to him under or by virtue of the contract except earnest money deposit retained as security and a sum equal to 2½ percent of the total value of the work done. The amount withheld from the final bill will be retained under deposits and paid to the contractor together with the earnest money deposit retained as security after a period of 24 months as all defects shall have been made good according to the true intent and meaning there of.
- 41.3.2 In case of over payments or wrong payment if any made to the contractor due to wrong interpretation of the provisions of the contract, APSS or Contract conditions etc., such unauthorised payment will be deducted in the subsequent bills or final bill for the work or from the bills under any other contracts with the Government/ MUNICIPAL CORPORATION or at any time there after from the deposits available with the Government/MUNICIPAL CORPORATION.
- 41.3.3 Any recovery or recoveries advised by the Government Department either state or central, due to non-fulfillment of any contract entered into with them by the contractor shall be recovered from any bill or deposits of the contractor.
- 41.3.4 No claim shall be entertained, if the same is not represented in writing to the Engineer-in-Charge within 15 days of its occurrence.
- 41.3.5 The contractor is not eligible for any compensation for inevitable delay in handing over the site or for any other reason. In such case, suitable extensions of time will be granted after considering the merits of the case.
- 41.4 Intermediate Payments:
- 41.4.1 For intermediate Stage of work, only part rates as fixed by the Engineer-in-Charge will be paid.
- 41.4.2 Part rates shall be worked out for the work done portion based on the actual operations involved keeping in view the value of the balance work to be done, to avoid unintended benefit to the Contractor in initial Stage.
- 41.4.3 Full rate shall be paid when the work is completed to the full profile as noted in the drawings.
- 41.4.4 For earthwork in cutting, 10% of the quantity will be with-held for intermediate payments and the same will be released after completing the work to the profiles as per drawings and disposal of the spoil material at the specified places and handing over the balance useful stone. For this purpose a length of 25 mts. will be taken as a Unit.

- 41.4.5 For earth work, embankment formation work, 10% of the quantity will be withheld for intermediate payments and the same will be released after completing the bund to the profiles as per drawings including trimming of side slopes and all other works contingent to the bund profile. For this purpose, 25 mts of length will be taken as a Unit.
- 41.4.6 For the structure works either with masonry or concrete where the height of structure is more than three meters, the quantities executed in the lower level will be withheld at the rate of one percent for every three meters height, if the balance height of the structure work is more than three meters in being over the executed level and the same will be released only after the entire work is completed as certified by the Engineer-in-Charge.
- 41.4.7 For C.M. & C.D. works and for lining works, spread over more than 2 Km. In length 5 percent of the concrete and Masonry quantities will be withheld and the same will be released after completion of all C.M. & C.D. works and lining for the entire length certified by the Engineer-in-Charge.
- 41.4.8 Where payment is intended for aggregates by Bill of Quantities item based on stack measurements, 10% of the quantity measured will be withheld. No payment or advance will be made for unfixed materials when the rates are for finished work in site.

42. Interest on Money due to the Contractor:

- 42.1 No omission by the Executive Engineer or the sub-divisional officer to pay the amount due upon certificates shall vitiate or make void the contract, nor shall the contractor be entitled to interest upon any guarantee fund or payments in arrear, nor upon any balance which may, on the final settlement of his accounts, found to be due to him.

43. Certificate of Completion of works:

- 43.1 Certificate of Completion of works:
- 43.1.1 When the whole of the work has been completed and has satisfactorily passed any final test that may be prescribed by the Contract, the Contractor may give a notice to that effect to the Engineer-in-Charge accompanied by an undertaking to carry out any rectification work during the period of maintenance, such notice and undertaking shall be in writing and shall be deemed to be a request by the Contractor for the Engineer-in-Charge to issue a Certificate of completion in respect of the Works. The Engineer-in-Charge shall, within twenty one days of the date of delivery of such notice either issue to the Contractor, a certificate of completion stating the date on which, in his opinion, the works were completed in accordance with the Contract or give instructions in writing to the Contractor specifying all the Works which, in the Engineer-in-Charge's opinion, required to be done by the Contractor before the issue of such Certificate. The Engineer-in-Charge shall also notify the Contractor of any defects in the Works affecting completion that may appear after such instructions and before completion of the Works specified there in. The Contractor shall be entitled to receive such Certificate of the Completion within

twenty one days of completion to the satisfaction of the Engineer-in-Charge of the Works so specified and making good of any defects so notified.

43.1.2 Similarly, the Contractor may request and the Engineer-in-Charge shall issue a Certificate of Completion in respect of:

- a) Any section of the Permanent works in respect of which a separate time for completion is provided in the Contract, and
- b) Any substantial part of the Permanent Works which has been both completed to the satisfaction of the Engineer-in-Charge and occupied or used by the Department.

43.1.3 If any part of the Permanent Works shall have been completed and shall have satisfactorily passed any final test that may be prescribed by the Contract, the Engineer-in-Charge may issue such certificate, and the Contractor shall be deemed to have undertaken to complete any outstanding work in that part of the Works during the period of Maintenance.

E. FINISHING THE CONTRACT

44. Completion:

44.1 The Contractor shall request the Engineer-in-Charge to issue a Certificate of completion of the Works and the Engineer-in-Charge will do so upon deciding that the work is completed.

45. Taking Over:

45.1 The Department shall takes over the Site and the Works within seven days of the Engineer-in-Charge issuing a certificate of Completion.

46. Final Account:

54.1 The Contractor shall supply to the Engineer-in-Charge a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Engineer-in-Charge shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within 56 days of receiving the Contractor's account if it is correct and complete. If it is not, the Engineer-in-Charge shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the final Account is still unsatisfactory after it has been resubmitted, the Engineer-in-Charge shall decide on the amount payable to the Contractor and issue a payment certificate with in 56 days of receiving the Contractor's revised account.

47. Termination:

47.1 The Department may terminate the Contract if the contractor causes a fundamental breach of the Contract.

- 47.2 Fundamental breaches of Contract include, but shall not be limited to the following.
- a) The Contractor stops work for 28 days when no stoppage of work is shown on the current program and the stoppage has not been authorised by the Engineer-in-Charge.
 - b) The Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation.
 - c) The Engineer-in-Charge gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer-in-Charge; and
 - d) The Contractor does not maintain a security which is required and
 - e) The Contractor has delayed the completion of works by the number of days for which the maximum amount of liquidated damages can be paid as defined.
 - f) If the contractor, in the judgment of the Department has engaged in corrupt or fraudulent practices in competing for or in the executing the contract.

For the purpose of this paragraph: "corrupt practice" means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution. "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment to the Government/MUNICIPAL CORPORATION and includes collusive practice among Tenderers (prior to or after Tender submission) designed to establish Tender prices at artificial non-competitive levels and to deprive the Government/MUNICIPAL CORPORATION of the benefits of free and open competition.

- 47.3 Notwithstanding the above the Department may terminate the contract for convenience.
- 47.4 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secured leave the Site as soon as reasonably possible.

48. Payment upon Termination:

- 48.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Engineer-in-Charge shall issue a certificate for the value of the work done less advance payments received upon the date of the issue of the certificate, less other recoveries due in terms of the Contract, less taxes due to be deducted at source as per applicable law and less the percentage to apply to the work not completed. Additional Liquidated Damages shall not apply. If the total amount due to the Department exceeds any payment due to the Contractor the difference shall be a debt payable to the Department.

49. Property:

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49.1 All materials on the Site, Plant, Equipment, Temporary Works and Works are deemed to be the property of the Department if the Contract is terminated because of Contractor's default.

50. Release from Performance:

50.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Department or the Contractor the Engineer-in-Charge shall certify that the contract has been frustrated. The Contractor shall make the site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all works carried out before receiving it and for any work carried out afterwards to which commitment was made.

F. SPECIAL CONDITIONS

51. Water Supply:

The Contractor has to make his own arrangements for water required for the work and to the colonies and work sites, which are to be established by the Contractor.

52. Electrical Power:

The Contractors will have to make their own arrangements for drawing electric power from the nearest power line after obtaining permission from the TELANGANA State Electricity Board at his own cost. In case of failure of electricity, the Contractor has to make alternative arrangements for supply of electricity by Diesel Generator sets of suitable capacity at place of work. If the supply is arranged by the Department, necessary Tariff rates shall have to be paid based on the prevailing rates.

The contractor will pay the bills of Electricity Board for the cost of power consumed by him.

The contractor shall satisfy all the conditions and rules required as per Indian Electricity Act 1910 and under rule -45(l) of the Indian Electricity Rules, 1956 as amended from time to time and other pertinent rules.

The power shall be used for bonafide Departmental works only.

52.1 Electric Power for Domestic Supply:

a) The contractor has to make his own arrangements for the supply of electric power for domestic purposes and the charges for this purpose have to be paid by him at the rates as fixed by the TELANGANA State Electricity Board from time to time.

b) The contractor will have to make his own arrangements to lay and maintain the necessary distribution lines and wiring for the camp at his own cost. The layout and the methods of laying the lines and wiring shall have the prior approval of the Engineer-in-Charge. All camp area shall

be properly electrified. All lines, streets, approaches for the camp etc., shall be sufficiently lighted for the safety of staff and labour of the contractor, at the cost of the Contractor and it will be subject to the approval of the Engineer-in-Charge.

53. Land:

53.1 Land for Contractor's use:

The contractor will be permitted to use Government/MUNICIPAL CORPORATION land for execution of work. The contractor shall have to make his own arrangements for acquiring and clearing the site, leveling, providing drainage and other facilities for labour staff colonies, site office, work-shop or stores and for related activities. The Contractor shall apply to the Department within a reasonable time after the award of the contract and at least 30 days in advance of its use, the details of land required by him for the work at site and the land required for his camp and should any private land which has not been acquired, be required by the contractor for his use. The same may be acquired by the contractor at his own cost by private negotiations and no claim shall be admissible to him on this account.

The Engineer-in-Charge reserves the right to refuse permission for use of any government//Municipal land for which no claim or compensation shall be admissible to the contractor. The contractor shall, however, not be required to pay cost or any rent for the Government land given to him.

53.2 Surrender of Occupied Land:

- a) The Government/Municipal land as here in before mentioned shall be surrendered to the Engineer-in-Charge within seven days, after issue of completion certificate. Also no land shall be held by the contractor longer than the Engineer-in-Charge shall deem necessary and the contractor shall on the receipt of due notice from the Engineer-in-Charge, vacate and surrender the land which the Engineer-in-Charge may certify as no longer required by the Contractor for the purpose of the work.
- b) The contractor shall make good to the satisfaction of the Engineer-in-Charge any damage to areas, which he has to return or to other property or land handed over to him for purpose of this work. Temporary structures may be erected by the contractor for storage sheds, offices, residences etc., for non-commercial use, with the permission of the Executive Engineer/Engineer-in-Charge on the land handed over to him at his own cost. At the completion of the work these structures shall be dismantled site cleared and handed over to the Executive Engineer/Engineer-in-Charge. The land required for providing amenities will be given free of cost from Government lands Municipal land if available otherwise the contractor shall have to make his own arrangements.

53.3 Contractor not to dispose off Spoil etc. :-

The contractor shall not dispose off or remove except for the purpose of fulfillment of this contract, sand, stone, clay ballast, earth, trees and shrubs or other materials obtained in the excavation made or lying on the site of the work, and all such materials and produce shall remain property of the

Government/MUNICIPAL CORPORATION. The Department may upon request from the contractor, or if so stipulated in the conditions of the contract allow the contractor to use any of the above materials for the works either free of cost or after payment as may be specifically mentioned or considered necessary during the execution of the work.

54. Roads:

In addition to existing public roads and roads Constructed by Government/MUNICIPAL CORPORATION, if any, in work area all additional approach roads inside work area and camp required by the Contractor shall be constructed and maintained by him at his own cost. The layout design, construction and maintenance etc. of the roads shall be subject to the approval of the Engineer-in-Charge. The contractor shall permit the use of these roads by the Government/MUNICIPAL CORPORATION free of charge.

It is possible that work at, or in the vicinity of the work site will be performed by the Government/MUNICIPAL CORPORATION or by other contractors engaged in work for the Government/MUNICIPAL CORPORATION during the contract period. The contractor shall without charge permit the government/MUNICIPAL CORPORATION and such other contractor and other workmen to use the access facilities including roads and other facilities, constructed and acquired by the contractor for use in the performance of the works.

The contractor's heavy construction traffic or tracked equipment shall not traverse any public roads or bridges unless the contractor has made arrangement with the authority concerned. In case contractor's heavy construction traffic or tracked equipment is not allowed to traverse any public roads or bridges and the contractor is required to make some alternative arrangements, no claim on this account shall be entertained.

The contractor is cautioned to take necessary precautions in transportation of construction materials to avoid accidents.

55. Payment for Camp Construction:

No payment will be made to the contractor for construction, operation and maintenance of camp and other camp facilities and the entire cost of such work shall be deemed to have been included in the tendered rate for the various items of work in the schedule of quantities and bids.

56. Explosive And Fuel Storage Tanks:

No explosive shall be stored within $\frac{1}{2}$ (half) KM of the limit of the camp sites. The storage of gasoline and other fuel oils or of Butane, Propane and other liquified petroleum gases, shall conform to the regulations of TELANGANA State Government and Government of India. The tanks, above ground and having capacity in excess of 2000 litres, shall not be located within the camp area, nor within 200m, of any building.

57. Labour:

The contractor shall, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.

Labour importation and amenities to labour and contractor's staff shall be to the contractor's account. His quoted percentage shall include the expenditure towards importation of labour amenities to labour and staff;

The contractor shall, if required by the Engineer-in-Charge, deliver to the Engineer-in-Charge a written in detail, in such form and at such intervals as the Engineer-in-Charge may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the contractor on the Site and such information respecting Contractor's Equipment as the Engineer-in-Charge may require.

57.1 Transportation of Labour:

- I. The contractor shall make his own arrangement for the daily transportation of the labour and staff from labour camps colonies to the work spot and no labour or staff of the contractor shall stay at the work spot. No extra payment will be made to the contractor for the above transportation of the labour and his quoted percentage to the work shall include the transportation charges of labour from colonies to workspot and back.
- II. The contractor will at all times duly observe the provisions of employment of children Act XXVI of 1938 and any enactment or modification of the same and will not employ or permit any person to do any work for the purpose under the provisions of this agreement in contravention of said Act. The contractor here by agrees to indemnify the department from and against all claims, penalties which may be suffered by the department or any person employed by the department by any default on the part of the contractor in the observance and performance of the provisions of the employment of children Act. XXVI of 1938 or any enactment or modification of the same.

As per Govt. memo No.721/Gr.(1)/81-35, dt:17.11.87. The contractor shall obtain the insurance at his own cost to cover the risk on the works to labour engaged by him during period of execution against fire and other usual risks and produce the same to the Executive Engineer/Engineer-in-Charge concerned before commencement of work.

58. Safety Measures:

1. The contractor shall take necessary precautions for safety of the workers and preserving their health while working in such jobs, which require special protection and precautions. The following are some of the measures listed but they are not exhaustive and contractor shall add to and augment these precautions on his own initiative where necessary and shall comply with directions issued by the Executive Engineer or on his behalf from time to time and at all times.

2. Providing protective foot wear to workers situations like mixing and placing of mortar or concrete sand in quarries and places where the work is done under much wet conditions.
3. Providing protective head wear to workers at places like under ground excavations to protect them against rock falls.
4. Providing masks to workers at granulates or at other locations where too much fine dust is floating about and sprinkling water at frequent intervals by water hoses on all stone crushing area and storage bins abate to dust.
5. Getting the workers in such jobs periodically examined for chest trouble due to too much breathing in to fine dust.
6. Taking such normal precautions like fencing and lightening in excavation of trenches, not allowing rolls and metal parts of useless timber spread around, making danger areas for blasting providing whistles etc.
7. Supply work men with proper belts, ropes etc., when working in precarious slopes etc.
8. Avoiding named electrical wire etc., as they would electrocute the works.
9. Taking necessary steps towards training the workers concerned on the machinery before they are allowed to handle them independently and taking all necessary precautions in around the areas where machines hoists and similar units are working.

59. Fair Wage Clause:

1. The contractor shall pay not less than fair wages to labourers engaged by him on the work.
2. "Fair" wages means wages whether for time or piecework notified by the Government from time to time in the area in which the work is situated.
3. The contractor shall notwithstanding the revisions of any contract to the contrary cause to be paid to the labour, in directly engaged on the work including any labour engaged by the sub-contractor in connection with the said work, as if the labourers had been directly employed by him.
4. In respect of labour directly or indirectly employed in the works for the purpose of the contractor's part of the agreement the contractor shall comply with the rules and regulations on the maintenance of suitable records prescribed for this purpose from time to time by the Government. He shall maintain his accounts and vouchers on the payment of wages to the labourers to the satisfaction of the Executive Engineer/Engineer-in-Charge
5. The Executive Engineer/Engineer-in-Charge shall have the right to call for such record as required to satisfy himself on the payment of fair wages to the labourers and shall have the right to deduct from the contract amount a

suitable amount for making good the loss suffered by the worker or workers by reason of the "fair wages" clause to the workers.

6. The contractor shall be primarily liable for all payments to be made and for the observance of the regulations framed by the Govt. from time to time without prejudice to his right to claim indemnity from his sub-contractors.
7. As per contract labour (Regulation and abolition) Act. 1970 the contractor has to produce the license obtained from the licensing officers of the labour department along with the tender or at the time of agreement.
8. Any violation of the conditions above shall be deemed to be a breach of his contract.
9. Equal wages are to be paid for both men and women if the nature of work is same and similar.
10. The contractor shall arrange for the recruitment of skilled and unskilled labour local and imported to the extent necessary to complete the work within the agreed period as directed by the Executive Engineer/Engineer-in-Charge in writing.

60. Indemnity Bond:

Name of work: **Door to Door Propagation and awareness of Segregation of wet and dry waste by Swachh Dhoot under Capacity Building Skill Development and Knowledge Management in Nizampet Municipal Corporation under SBM 2.0 Funds 2024-25**

I _____ contractor S/o. _____ aged _____ Resident of _____ do hereby bind myself to pay all the claims may come (a) under Workmen's Compensation Act. 1933 with any statutory modification there of and rules there under or otherwise for or in respect of any damage or compensation payable in connection with any accident or injury sustained (b) under Minimum wages Act 1948 (c) under payment of wages Act.1936 (d) under the Contractor labour (Regulation and Abolition) Act. 1970 by workmen engaged for the performance of the business relating to the above contract ie., Failing such payment of claims of workmen engaged in the above work, I abide in accepting for the recovery of such claims, effected from any of my assets with the departments.

61. Compliance With Labour Regulations:

During continuance of the contract, the contractor and his sub contractors shall abide at all times by all existing labour enactments and rules made there under, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour law (including rules), regulations, bye laws that may be passed or notifications that may be issued under any labour law in future either by the State or the Central Government or the local authority and also applicable labour regulations, health and sanitary arrangements for workmen, insurance and other benefits. Salient features of some of the major labour laws that are applicable to construction industry are given below. The contractor shall keep the Department indemnified in case any action is taken against Department by the competent authority on account of contravention

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of any of the provisions of any Act or rules made thereunder, regulations or notifications including amendments. If the Department is caused to pay or reimburse, such amounts as may be necessary to cause or observe, or for non-observance of the provision stipulated in the notifications/bye laws/Acts/Rules/regulations including amendments, if any, on the part of the contractor, the Engineer-in-charge /Department shall have the right to deduct any money due to the contractor including his amount of performance security. The Department/Engineer-in-Charge shall also have right to recover from the contractor any sum required or estimated to be required for making good the loss or damage suffered by the Department.

The employees of the Contractor and the Sub-contractor in no case shall be treated as the Department of the Department at any point of time.

62. Salient features of some major labour laws applicable to establishment engaged in buildings and other construction work:

- (a) Workmen compensation Act 1923: The Act provides for compensation in case if injury by accident arising out of and during the course of employment.
- (b) Payment of Gratuity Act 1972: Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if any employee has completed 5 years service or more, or on death, the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments, employing 10 or more employees.
- (c) Employees P.F. and Miscellaneous provision Act 1952: The Act provides for monthly contributions by the Department plus workers @ 10% or 8.33%. The benefits payable under the Act are:
 - (i) Pension or family pension on retirement or death, as the case may be.
 - (ii) Deposit linked insurance on the death in harness of the worker.
 - (iii) Payment of P.F. accumulation on retirement/death etc.,
- (d) Maternity Benefit Act 1951: The Act provides for leave and some other benefits to women employees in case of confinements or miscarriage etc.
- (e) Contract Labour (Regulation & Abolition) Act 1970: The Act provides for certain welfare measures to be provided by the contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided by the Principal Department by Law. The Principal Department is required to take certificate of Registration and the contractor is required to take license from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Department if they employ 20 or more contract labour.
- (f) Minimum wages Act 1948: The Department is supposed to pay not less than the Minimum wages fixed by appropriate Government as per provisions of the Act if

the employment is a scheduled employment construction of Buildings, Roads, Runways are scheduled employments.

- (g) Payment of wages Act 1936: It lays down as to by what date the wages are to be paid, when it will be paid and what deductions can be made from the wages of the workers.
- (h) Equal Remuneration Act 1979: The Act provides for payment of equal wages for work of equal nature to Male or Female workers and for not making discrimination against Female employee in the matters of transfers, training and promotions etc.
- (i) Payment of Bonus Act 1965: The Act is applicable to all establishments employing 20 or more employees. The Act provides for payment of annual bonus subject to a minimum of 8.33% of wages and maximum of 20% of wages to employees drawing Rs. 3500/- per month or less. The bonus to be paid to employees getting Rs.2500/- per months or above and upto Rs.3500/- per month shall be worked out by taking wages as Rs.2500/- per monthly only. The Act does not apply to certain establishments. The newly set-up establishments are exempted for five years in certain circumstances. Some of the State Governments have reduced the employment size from 20 to 10 for the purpose of applicability of this Act.
- (j) Industrial Disputes Act 1947: The Act lays down the machinery and procedure for resolution of Industrial disputes, in what situations a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.
- (k) Industrial Employment (Standing Orders) Act 1946: It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the State and Central Government to 50). The Act provides for laying down rules governing the conditions of employment by the Department on matters provided in the Act and get the same certified by the designated Authority.
- (l) Trade Unions Act 1926: The Act lays down the procedure for registration of trade unions of workmen and Departments. The Trade Unions registered under the act have been given certain immunities from civil and criminal liabilities.
- (m) Child Labour (Prohibition & Regulation) Act 1986: The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupations and processes, Employment Child Labour is prohibited in Building and Construction Industry.
- (n) Inter-State Migrant workmen's (Regulation of Employment & Conditions of service) Act 1979: The Act applicable to an establishment, which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another State). The inter State migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as

housing, medical aid, travelling expenses from home upto the establishment and back, etc.

- (o) The Building and Other Construction workers (regulation of Employment and conditions of service) Act 1996 and the Cess Act of 1996: All the establishments who carry on any building or other construction work and employs 10 or more workers are covered under this Act. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be modified by the Government. The Department of the establishment is required to provide safety measures at the Building or construction work and other welfare measures, such as Canteens, First-aid facilities, Ambulance, Housing accommodations for workers near the work place etc. The Department to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the Government.
- (p) Factories Act 1948: The Act lays down the procedure for approval of plans before setting up a factory, health and safety provisions, welfare provisions, working hours, annual earned leave and rendering information regarding accidents or dangerous occurrences to designated authorities. It is applicable to premises employing 10 person or more with aid of power or 20 or more persons without the aid of power engaged in manufacturing process.

63. Liabilities of the Contractor:

63.1 Accident Relief and workmen compensation:

The contractor should make all necessary arrangements for the safety of workmen on the occurrence of the accident, which results in the injury or death of any of the workmen employed by the contractor, the contractor shall within 24 hours of the happenings of the accident and such accidents should intimate in writing to the concerned Asst. Engineer / Asst. Executive Engineer of the Department the act of such accident. The contractor shall indemnify Government against all loss or damage sustained by the Government resulting directly or indirectly from his failure to give intimation in the manner aforesaid including the penalties or fines if any payable by Govt. as a consequence of Govt. failure to give notice under workmen's compensation Act or otherwise conform to the provisions of the said Act. In regard to such accident.

63.2 In the event of an accident in respect of which compensation may become payable under the workmen's compensation Act VIII 23 whether by the contractor, by the Government it shall be lawful for the Executive Engineer to retain such sum of money which may in the opinion of the Executive Engineer be sufficient to meet such liability. The opinion of the Executive Engineer shall be final in regard to all matters arising under this clause.

63.3 The contractor shall at all times indemnify the Govt. of A.P. against all claims which may be made under the workmen's compensation act or any statutory modification thereafter or rules thereunder or otherwise consequent of any damage or compensation payable in consequent of any accident or injuries sustained or death of any workmen engaged in the performance of the business relating to the contractor.

64. Contractor's Staff, Representatives and Labour:

- (a) The contractor shall, at all times, maintain on the works, staff of qualified Engineers, and Supervisors of sufficient experience of similar other jobs to assure that the quality of work turned out shall be as intended in the specifications. The contractor shall also maintain at the works, a Work Manager or sufficient status, experience and office and duly authorise him to deal with all aspects of the day-today work. All communications to any commitments by the Work Manager shall be considered as binding on the Contractor.
- (b) The Contractor shall at all times submit details of skilled and unskilled labour and equipment employed to the Engineer-in-Charge in prescribed proforma as he may require to assess and ensure the proper progress of work.
- (c) If the contractor does not employ the technical person agreed to on the work a fine of Rs.25,000/- will be imposed. If he does not employ for 30 days, thereafter it becomes a fundamental breach of contract.

65. Accommodation and food:

The contractor should arrange accommodation he needs, at his own cost. The contractor shall make his own arrangements for supply of food grains, fuel and other provision to his staff and labourers including controlled commodities.

66. Relationship :

Contractor shall have to furnish information along with tender, about the relationship he is having with any officer of the Department, Government of TELANGANA of the rank Assistant Engineer and above engaged in the work and any officer of the rank of Assistant Secretary and above of the Department of Government of TELANGANA.

67. Protection of adjoining premises:

The contractor shall protect adjoining sites against structural, decorative and other damages that could be caused by the execution of these works and make good at his cost any such damages.

68. Work during night or on Sundays and holidays:

The works can be allowed to be carried out during night, Sundays or authorised holidays in order to enable him to meet the schedule targets and the work shall require almost round the clock working keeping in view:

- (i) The provisions of relevant labour laws being adhered to:
- (ii) Adequate lighting, supervision and safety measures are established to the satisfaction of the Engineer-in-Charge and

- (iii) The construction programme given by the Contractor and agreed upon by the Engineer-in-Charge envisages such night working or working during Sundays or authorised holidays.

69. Layout of materials stacks:

The contractor shall deposit materials for the purpose of the work on such parts only of the ground as may be approved by the Engineer-in-Charge before starting work. A detailed survey, clearly indicating position and areas where materials shall be stacked and sheds built is to be conducted by the contractor at his own cost and only after obtaining necessary approval of the plan for use of sites by the Engineer-in-Charge, the Contractor can use the sites accordingly.

70. Use of blasting materials:

Procurement of blasting materials and its storage is the responsibility of the contractor. The contractor shall engage licensed blaster for blasting operation. The contractor is to act in accordance with Indian Explosive Act and other rules prevailing, during the execution of work. It is the responsibility of the contractor to see, that works by other agencies in the vicinity are not hampered, in such cases if any claim is made by other agencies that should be borne by the contractor. Carriage of blasting materials, from the magazine to the work site, is the responsibility of the contractor.

71. Plant and Equipment:

- 71.1 The contractor shall have sufficient plant, equipment and labour and shall work such hours and shifts as may be necessary to maintain the progress on the work as per the approval progress schedule. The working and shifts hours shall comply with the Govt. Regulations in force.
- 71.2 It is to expressly and clearly understood that contractor shall make his own arrangements to equip himself with all machinery and special tools and plant for the speedy and proper execution of the work and the department does not undertake responsibility towards their supply.
- 71.3 The department shall supply such of the machinery that may be available on hire basis but their supply cannot be demanded as matter of right and no delay in progress can be attributed to such non-supply of the plant by the department and the department cannot be made liable for any damage to the contractor. The Contractor shall be responsible for safe custody of the departmental machinery supplied to him (which will be delivered to contractor at the machinery yard at site of work) and he has to make good all damages and losses if any other than fire, wear and tear to bring it to the conditions that existed at the time of issue to the contractor before handing over the same to the department. The hire charges for the machinery handed over to the contractor will be recovered at the rate prevalent at the time of supply. The contractor will have to execute supplemental agreement with Executive Engineer at the time of supply of the machinery.

71.4 The acceptance of departmental machinery on hire is optional to the contractor.

72. Steel forms:

Steel forms should be used for all items involving and use of centering and shuttering shall be single plane without any dents and undulations.

73. Inconvenience to public:

The contractor shall not deposit materials at any site, which will cause inconvenience to public. The Engineer-in-Charge may direct the contractor to remove such materials or may undertake the job at the cost of the contractor.

74. Conflict of interest:

Any bribe, commission, gift or advantage given, promised or offered by on behalf of contractor or his partner, agent or servant or any one on his behalf to any officer, servant, representatives, agents of Engineer-in-Charge, or any persons on their behalf, in relation to the obtaining or to execution of this, or any other contract with Engineer-in-Charge shall in addition to any criminal liability, which it may occur, subject to the cancellation of this or all other contracts and also to payment of any loss or damage resulting from any such cancellation. Engineer-in-Charge shall then be entitled to deduct the amount, so payable from any money, otherwise due to the contractor under this or any other contract.

75. Contract documents and materials to be treated as confidential:

All documents, correspondences, decisions and orders, concerning the contract shall be considered as confidential and/or restricted in nature by the contractor and he shall not divulge or allow access to them by any unauthorised person.

76. General obligations of Contractor:

76.1 The contractor shall, subject to the provision of the contract and with due care and diligence, execute and maintain the works in accordance with specifications and drawings.

76.2 The contractor shall promptly inform the Department and the Engineer-in-Charge of any error, omission, fault and toerh defect in the design of or specifications for the works which are discovered when reviewing the contract documents or in the process of execution of the works.

76.3 If Contractor believes that a decision taken by the Engineer-in-Charge was either outside the authority given to the Engineer-in-Charge by the Contract or that the decision was wrongly taken, the decision shall be referred to the technical expert within 14 days of the notification of the Engineer-in-Charge's decisions.

76.4 Pending finalisation of disputes, the contractor shall proceed with execution of work with all due diligence.

77. Security measures:

- a) Security requirements for the work shall be in accordance with the Government's general requirements including provisions of this clause and the Contractor shall conform to such requirements and shall be held responsible for the actions of all his staff, employees and the staff and employees of his sub-contractors.
- b) All contractors' employees, representatives and sub-contractor's employees shall wear identifications badges provided by the contractor. Badges shall identify the contractor, showing and employee's number and shall be worn at all times while at the site. Individual labour will not be required to wear identification badges.
- c) All vehicles used by the contractor shall be clearly marked with contractor's name.
- d) The contractor shall be responsible for the security of the works for the duration of the contract and shall provide and maintain continuously adequate security personnel to fulfill these obligations. The requirements of security measures shall include, but not limited to maintenance of order on the site, provision of all lighting, fencing, guard flagmen and all other measures necessary for the protection of the works within the colonies, camps and elsewhere on the site, all materials delivered to the site, all persons employed in connection with the works continuously throughout working and non working period including nights, Sundays and holidays for duration of the contract.
- e) Other contractors working on the site concurrently with the contractor will provide security for their own plant and materials. However, their security provisions shall in no way relieve the contractor of his responsibilities in this respect
- f) Separate payment will not be made for provision of security services.

78. Fire fighting measures:

- a) The contractor shall provide and maintain adequate fire fighting equipment and take adequate fire precaution measures for the safety of all personnel and temporary and permanent works and shall take action to prevent damage to destruction by fire of trees shrubs and grasses.

- b) Separate payment will not be made for the provision of fire prevention measures.

79. Sanitation:

The contractor shall implement the sanitary and watch and ward rules and regulations for all forces employed under this contract and if the Contractor fails to enforce these rules, the Engineer-in-Charge may enforce them at the expenses of the Contractor.

80. Training of personnel:

The contractor, shall, if and as directed by the Engineer-in-Charge provide free of any charge adequate facilities, for vocational training of Government Officers, students, Engineers, supervisors, foremen, skilled workmen etc. not exceeding six in number at any one time on the contractor's work. Their salaries, allowances etc. will be borne by the Government and the training schemes will be drawn up by the Engineer-in-Charge in consultation with the contractor.

81. Ecological balance:

- a) The contractor shall maintain ecological balance by preventing de-forestation, water pollution and defacing of natural landscape. The contractor shall so conduct his construction operation as to prevent any unnecessary destruction, scarring, or defacing of the natural surrounding in the vicinity of the work. In respect of the ecological balance, Contractor shall observe the following instructions.
 - i) Where unnecessary destruction, scarring, damage or defacing may occur, as result of the operation, the same shall be repaired replanted or otherwise corrected at the contractor's expense. The contractor shall adopt precautions when using explosives, which will prevent scattering of rocks or other debris outside the work area. All work area including borrow areas shall be smoothed and graded in a manner to conform to the natural appearances of the landscape as directed by the Engineer-in-Charge.
 - ii) All trees and shrubbery which are not specifically required to be cleared or removed for construction purposes shall be preserved and shall be protected from any damage that may be caused by the contractor's construction operation and equipment. The removal of trees and shrubs will be permitted only after prior approval by the Engineer-in-Charge. Special care shall be exercised where trees or shrubs are exposed to injuries by construction equipment, blasting, excavating, dumping, chemical damage or other operation and the contractor shall adequately protect such trees by use of protective barriers or other methods approval by the Engineer-in-Charge. Trees shall not be used for anchorages. The contractor shall be responsible for injuries to trees and shrubs caused by his operations. The term "injury" shall include, without limitation bruising, scarring, tearing and breaking of roots, trunks or branches. All injured trees and shrubs be restored as nearly as practicable without delay to their original condition at the contractor's expense.

- (iii) The contractor's construction activities shall be performed by methods that will prevent entrance or accidental spillage of solid matter contaminants, debris and other objectionable pollutants and wastage into river. Such pollutant and waste include earth and earth products, garbage, cement concrete, sewage effluent, industrial wastes, radioactive substances, mercury, oil and other petroleum products, aggregate processing, mineral salts and thermal pollution. Pollutants and wastes shall be disposed off in a manner and at sites approved by the Engineer-in-Charge.
 - (iv) In conduct of construction activities and operation of equipments the contractor shall utilise such practicable methods and devices as are reasonably available to control, prevent and otherwise minimise the air pollution. The excessive omission of dust in to the atmosphere will not be permitted during the manufacture, handling and storage of concrete aggregates and the contractor shall use such methods and equipment as a necessary for collection and disposal or prevention of dust during these operation. The contractor's methods of storing and handling cement shall also include means of eliminating atmospheric discharges of dust, equipment and vehicles that give objectionable omission of exhaust gases shall not be operated. Burning of materials resulting from clearing of trees, bushes, combustible construction materials and rubbish may be permitted only when atmospheric conditions for burning are considered favourable.
- b) Separate payment will not be made for complying with the provisions of this clause and all cost shall be deemed to have been included in the unit rates and prices included in the contract if any provision is not complied with within a reasonable time even after issue of a notice in this respect, the necessary operations would be carried out by the Engineer-in-Charge at the cost of the Contractor, Orders of the Engineer-in-Charge in this respect would be final and binding on the contractor.

82. Preservation of existing vegetation:

- a) The contractor will preserve and protect all existing vegetation such as trees, on or adjacent to the site which do not unreasonably interfere with the construction as may be determined by the Engineer-in-Charge. The contractor will be held responsible for all unauthorised cutting or damage of trees, including damage due to careless operation of equipment, stockpiling of materials or trucking of grass areas by equipment. Care shall be taken by the Contractor in felling trees authorised for removal to avoid any unnecessary damages to vegetation and trees that are to remain in place and to structures under construction or in existence and to workmen.
- b) All the produce from such cutting of trees by the contractor shall remain the property of Government and shall be properly stacked at site, approved by the Engineer-in-Charge. No payment whatsoever, shall be made for such cutting and its stacking by the Contractor. If any produce from such cutting is not handed over to the Government by the contractor, he shall be charged for the same at the rates to be decided by the Engineer-in-Charge. The recovery of this amount shall be made in full from the intermediate bill that follows.

- c) The contractor shall also make arrangements of fuel deposits for supply of required fuel for the labourer to be employed for cooking purpose at his own cost in order to prevent destruction of vegetation growth in the surrounding area of the work site.

83. Possession prior to completion:

The Engineer-in-charge shall have the right to take possession of or use any completed part of work or works or any part there of under construction either temporarily or permanently. Such possession or use shall not be deemed as an acceptance of any work either completed or not completed in accordance with the contract with in the interest of Clause 28 of APSS except where expressly otherwise specified by the Engineer-in-charge.

84. Payment upon termination:

If the contract is terminated because of a fundamental breach of contract by the contractor, the Engineer-in-Charge shall issue a certificate for the value of the work done less advance payment received upon the date of the issue of the certificate and less the percentage to apply to the work not completed as indicated in the contract data. Additional liquidated damages shall not apply. If the total amount due to the Department exceeds any payment due to the contractor the difference shall be a debt payable to the Department. In case of default for payment within 28 days from the date of issue of notice to the above effect, the contractor shall be liable to pay interest at 12% per annum for the period of delay.

85. Access to the contractor's books:

Whenever it is considered necessary by the Engineer-in-Charge to ascertain the actual cost of execution of any particular extra item of work or supply of the plant or material on which advance is to be made or of extra items or claims, he shall direct the contractor to produce the relevant documents such as payrolls, records of personnel, invoices of materials and any or all data relevant to the item or necessary to determine its cost etc. and the contractor shall when so required furnish all information pertaining to the aforesaid items in the mode and manner that may be specified by the Engineer-in-Charge.

86. Drawing to be kept at site:

One copy of the drawings furnished to the contractor shall be kept by the contractor on the site and the same shall at all reasonable time be available for inspection and use by the Engineer-in-Charge and the Engineer-in-Charge's representative and by any other persons authorised by the Engineer-in-Charge in writing.

87. B.I.S. [I.S.I.] books and APSS to be kept at site:

A complete set of Indian Standard specification referred to in "Technical Specifications" and A.P.S.S. shall be kept at site for reference.

88. Site Order Book:

An order book shall be kept at the site of the work. As far as possible, all orders regarding the work are to be entered in this book. All entries shall be signed and dated by the Department Officer in direct charge of the work and by the contractor or by his representative. In important cases, the Executive Engineer or the Superintending Engineer will countersign the entries, which have been made. The order book shall not be removed from the work, except with the written permission of the Executive Engineer.

89. Variations by way of modification, omissions or additions:

For all modifications, omissions from or additions to the drawings and specifications, the Executive Engineer will issue revised plans, or written instructions, or both and no modification, omission or addition shall be made unless so authorised and directed by the Executive Engineer in writing.

The Executive Engineer shall have the privilege of ordering modifications, omission or additions at any time before the completion of the work and such orders shall not operate to annul those portions of the specifications with which said changes do not conflict.

Engineer-in-Charge's Decision:

It shall be accepted as in separable part of the contract that in matters regarding materials, workmanship, removal of improper work, interpretation of the contract drawings and contract specification, mode of the procedure and the carrying out of the work, the decision of the Engineer-in-Charge, which shall be given in writing shall be binding on the contractor.

90. Care and diversion of river/stream:

The contractor shall submit details regarding the diversion and care of river or stream during construction of the work along with a separate print-out of the time table showing earliest and latest start and finish dates of various activities. He should submit a detailed layout plan with drawings for the diversion and care of river during construction of work. The above arrangements shall be at contractor's cost.

91. Income tax:

- a) During the currency of the contract deduction of income tax at rates applicable shall be made from the gross value of each bill of the contract, the contract value of which is in excess of Rs.10,000/- for deduction of tax at rates lower than rates applicable procedure stipulated under section 194-C(4) of Income Tax Act, 1961 and revised and amended from time to time shall be followed.
- b) The contractor's staff, personnel and labour will be liable to pay personnel income taxes in respect of their salaries and wages as are chargeable under the laws and regulations for the time being in force, and the contractor shall perform such duties in regard to such deductions thereof as may be imposed on him by such laws and regulations.

92. Seigniorage charges:

- 92.1 Seigniorage charges will be recovered as per rules from the work bills of the contract or based on the theoretical requirement materials at the rates, _____.
- 92.2 The rates are liable to be revised and amended from time to time by the State Government, by notification in the 'TELANGANAGazette'. If the revised seigniorage fee is more than the above mentioned, the recovery from the contractor's bills is effected as per rules in force.

93. VAT:

- 93.1 The successful bidder need to fill in form VAT 250 and submit in their tax office duly exercising option for the composition of VAT. A copy of the same shall be furnished to the agreement concluding authority along with balance EMD.
- 93.2 The contractor should produce a valid Sales Tax Clearance Certificate before the payment of the final bill, otherwise payment to the contractor will be withheld.

94. Supply of construction materials:

- i) The contractor has to make his own arrangements for procurements, supply and use of construction materials.
- ii) All materials so procured should confirm to the relevant specifications indicated in the bidding documents.
- iii) The contractor shall follow all regulations of the Department/Government of India in respect of import licenses etc., of the procurement of the materials is through imports and he shall be responsible for the payment of applicable duties and taxes, port clearances, inland transportation etc.
- iv) The contractor shall make his own arrangements for adequate storage of the materials.

[Any other special conditions applicable to the work put to Tender.]

TECHNICAL SPECIFICATIONS

[TO BE INCORPORATED AS PER REQUIREMENT OF THE WORK PUT TO TENDER DULY QUOTING THE RELEVANT SPECIFICATION NUMBER OF APSS. BSI Code No. , MOST, etc. STANDARD SPECIFICATION NO.]

EXCAVATION OF FOUNDATION

1. All materials in the excavation shall be cleared at contractor's expense. If the excavation has been gone beyond the required levels it shall be filled with concrete or masonry as decided by the [Engineer-in-Charge](#) and no payment will be made for such quantities. Refilling of foundations with selected soils is to be done by adopting suitable method of consolidation. The soil obtained from excavation shall be deposited as directed and as per site conditions. The contractor shall obtain suitable soils approved by the Engineer-in-Charge for filling of trench. The rates in scheduled "A" are inclusive of all the above operations. Blasting within one meter of foundation is strictly prohibited as such blasting close to the foundation may inflict damage to foundation.
2. Payment will be made for box cutting only with vertical sides as defined by the foundation dimensions of the structure. The contractor shall have to make his own arrangements for shoring strutting provision of adequate slopes for the sides to prevent slips, etc., and no separate charges will be paid for any incidental charges arising either during the excavation of foundation or the construction of the structure. The rate quoted shall be inclusive of all incidental charges and cover the additional excavation necessary to keep the sides of the pit stable and safe.

SPECIAL SPECIFICATIONS FOR EARTH WORK

3. No re-handling of excavated soil due to injudicious selection for dumping will be paid for.
4. Open excavation done only once during the period of execution will be paid for as per the section and plan of the excavation. If the contractor finds it more convenient to make out the excavation at slopes other than shown in the plan to avoid shoring in any case it shall be done at his cost and it shall be his responsibility to make the excavation perfectly safe at all the stages for the workmen.
5. Actual soils met with during only be paid for the Engineer-in-Charge's decision in regarding to classification of soils is final.
6. Whenever the rock is met with the surface should be exposed for inspection by the Engineer-in-Charge or his authorized subordinates. The boulders to be removed shall be marked. The pre-measurements shall be taken either by taking levels or string sections by measuring length, breadth and depth by whichever method is found possible and convenient. When it is not possible to take pre-measurement of the H.R. and boulder owing to the fact that the occurrence intermingled soils the over all measurements of soils including the rock boulders shall be taken as a whole thing will be allowed to be

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removed. After the work is completed a certificate of clearance will be recorded in the measurement book. The quantity of soil will be arrived at by deduction from the over all pre-measurements, the quantity of rock boulders which will be arrived after deduction at 40% for voids from stock measurement. For this purpose the stock must be closely packed with minimum voids, and in case of loose or improper stocking such increased percentage as may be deemed necessary by the Engineer-in-Charge will be deducted from stock measurements to arrive at the rock quantity. The width of the stock must not be more than 2 meters and the depth not more than 1.00 meter.

7. After excavation of foundation upto the foundation level is completed as decided by the [Engineer-in-Charge](#) and in case it is slurry, drilling and grouting will be done by the MUNICIPAL CORPORATION and the contractor shall make it convenient for the MUNICIPAL CORPORATION to carry out the work. During the above operation by the MUNICIPAL CORPORATION the contractor shall keep foundation exposed with his pumps and equipment without any extra claim over the rates quoted by him. In case of delay by the MUNICIPAL CORPORATION in completing those items of work reasonable extension of time as decided by the Municipal Commissioner will be granted and unit rate quoted holds good even if the design is altered during execution.
8. If for reasons like unsuitable strata, the foundations are to be taken to lower levels than those in plan the contractor shall do so without any claim for compensation, the actual quantity of work done will be paid for at relevant rates in Schedule – “A”.
9. **DIVERSION OF ARRANGEMENTS:** The work of diversion arrangement should be carefully planned and prepared by the contractor and forward to the Engineer-in-Charge for technically substantiating the proposals and approval of the Engineer-in-Charge should be obtained for execution. The contractor has to arrange for approach roads, bailing out of water shoring and shuttering protection to the work in progress safety measures for materials and all other necessary arrangements to complete the work at his own cost and no extra payment is admissible.
10. **Masonry Items:** Groove for fixing embedded parts as directed have to be left on masonry or concrete as desired by the Engineer-in-Charge and no extra payment will be made on this account.

During the above operations by the Municipal any delay in completing these items of work, reasonable extension of time as decided by the Municipal Commissioner will be granted and no claim for any compensation will be entertained on this account. The Unit rates will hold good if the design is altered during execution.

11. Materials required for pipeline works:

12. The pipes required to be supplied for the works shall confirm to the following I.S. Specification depending upon the nature of material for pipe specified in the bid document.
 - a) I.S.1592 of 1980 for A.C. Pressure Pipes.
 - b) I.S.458 of 1988 for R.C.C. Spun Pipes.
 - c) I.S.1536 of 1976 for A.C. spun Pipes.
 - d) I.S.7181 of 1986 for C.I. double flanged Pipes.
 - e) I.S.1592 of 1980 for A.C. Pressure Pipes.
 - f) IS.784-78 and 1343-80 for Manufacture of P.S.C. Pipes. The specification for M.S. Specials for P.S.C. pipes shall confirm to IS-7322-74. The specification for steel cylindrical reinforced concrete pipes shall confirmed to I.S.1916-63. The rubber ring for P.S.C. joints shall confirmed to IS-5382-85.
 - g) IS 15155 – 2002 for BWSC pipes.

- 11.2 The pipes supplied shall be subjected to all the tests specified in the relevant I.S. specifications before delivering at site and the manufacturer's test certificate to this effect shall accompany each consignment delivered at at site. In addition, the pipes shall be got tested by the inspectorate of Director General of supplies and disposals at the manufacturer's factory site and the relevant test certificate shall also be produced along with each consignment. The charges for conducting the tests shall be borne by

the bidder only and these charges are not reimbursable by the employer. For PSC pipes the test indicated in clause of I.S.784-59, 458-88 and 3597-85 are to be followed.

11.3. A list of firms that are on the approved list of suppliers to the Department will be supplied on request. The bidder is at liberty to procure the pipes from any of the firms in the approved list of suppliers but the responsibility for the pipes conforming to the relevant I.S. Specifications shall solely rest with the bidder only.

11.4. The bidder's rates for relevant items shall include not only the cost of pipes and taxes thereon and testing charges but also the charges for transportation to site and all subsequent handling and other incidental charges.

11.5. Rubber Rings:

The rubber rings to be used for the jointing of various types of pipes shall conform to the following I.S. Specifications.

I.S. 5382 of 1969	-	For C.I. Pipes, R.C.C. Pipes. A.C. Pipes with C.I.D.Joints.
I.S.10292 of 1986	-	For A.C.Pipe with A.C. Couplings.
I.S.5382 of 1969	-	For P.S.C. Pipes.

13. Scope of the Contract: The contract envisages civil works namely excavation of earth, laying, jointing and testing of pipelines and construction of masonry pits including fixing of valves such as sluice valves, scour valves, double air valves and surface boxes and auxiliary specials required for different types of pipes viz., A.C. Pressure pipes, concrete pipes with socket and spigot ends and C.I. Spun pipes socket and spigot ends of flanged ends of different Diameters.

14. Materials: The materials used shall conform to the relevant specifications mentioned in Division-7.

The surplus materials if any, left over due to additional purchase against possible breakages etc., will not be taken over by the department and payment will be restricted to the materials actually used on work. [The materials shall conform to relevant IS specifications and shall be got tested by third party inspection before using in the work for quality and quantity.](#)

12.3. Trench Work: The trenches shall be so dug that the pipes may be laid to the required gradient and depth. The width of trench above pipeline level shall be as small as possible but provide sufficient space necessary for jointing pipes. The walls of trenches shall be cut according to the slopes mentioned in relevant I.S. Specifications. The trenches shall be kept free from water while laying and jointing the pipes and specials.

The relevant clauses that govern the trench work and preparation of base laying of various types of pipes are as detailed below.

1. A.C. Pressure pipes – clause 4 of IS-6530 of 1972.
2. R.C.C. Pipes – Clause 9 of IS – 783 of 1959.
3. C.I. Pipes and D.I. Pipes.
4. P.S.C. Pipes class-3 of I.S. 783-85 and section 126 of A.P.S.S.
5. S.W.G. pipes – IS 1318/92.
6. BWSC pipes – Relevant IS Code.

12.4. Handling and Laying of Pipes: Reasonable care shall be exercised in Loading, Transporting and Unloading of pipes and specials. The pipes shall be lowered into the

trench carefully and shall be laid true to alignment and gradient as specified and as per instructions of the Engineer-in-Charge.

The sections of the pipe shall be jointed together in such a manner that there shall be as little unevenness as possible along inside of the pipes. Necessary precautions shall be taken while laying as per the relevant I.S. Specifications for the type of pipes used, as mentioned below:

1. A.C. Pressure pipes – clause 4 of IS-6530 of 1972.
2. R.C.C. Pipes – Clause 9 of IS – 783 of 1959.
3. C.I. Pipes and D.I. Pipes.
4. P.S.C. Pipes class-3 of I.S. 783-85 and section 126 of A.P.S.S.
5. S.W.G. pipes – IS 1318/92.
6. BWSC pipes – Relevant IS Code.

12.5 Jointing: Before commencing jointing, the pipe shall be cleaned, the joints and the ends of the pipes shall be cleaned, preferably with a hard wire brush to remove loose particles. Where jointing is done using rubber ring, care should be taken to see that the rubber ring does not get twisted or deformed while pushing the ring into position.

The jointing for various types of pipes shall conform to the requirements of the relevant I.S. Specifications as detailed below:

- | | | |
|----------------------------|---|-------------------------------|
| 1. A.C. Pressure pipes | - | Clause 6 I.S.6530 of 1972 |
| 2. R.C.C. Pipes | - | Clause 10 of I.S.783 of 1959 |
| 3. C.I. Pipes & D.I. pipes | - | Clause 5 of I.S. 3114 of 1965 |
| 4. PSC Pipes | - | Clause 10 of I.S. of 1985 |
| 5. SWG pipes | - | Clause 1318/92 |
| 6. BWSC pipes | - | Relevant IS Code. |

12.6. Anchor and Thrust Blocks: Thrust blocks, suitably designed shall be provided wherever necessary to transmit hydraulic pressure as laid down in the relevant I.S. Specification. Where the hydraulic thrust is in an upward direction, anchor blocks of sufficient weight shall be provided, to which the pipes shall be secured with steel trips.

12.7. Testing: After the pipes are laid and jointed as mentioned in 8.3 and 8.4 above, the pipe lines are to be subjected to hydrostatic pressure test. The procedure for conducting the hydrostatic pressure test is detailed in the relevant I.S. Specifications for various types of pipes, as indicated below:

- | | | |
|----------------------------|---|-------------------------------|
| 1. A.C. Pressure pipes | - | Clause 11 I.S.5530 of 1972 |
| 2. R.C.C. Pipes | - | Clause 10 of I.S.783 of 1959 |
| 3. C.I. Pipes & D.I. pipes | - | Clause 6 of I.S. 3114 of 1965 |
| 4. PSC Pipes | - | Clause 11 of I.S. 783 of 1985 |
| 5. SWG pipes | - | Clause 1318/92 |
| 6. BWSC pipes | - | Relevant IS Code. |

In portions of the pipelines, where the pipes have developed cracks or sweating, such pipes shall be removed and re-laid with new pipes and the pipelines retested to the entire satisfaction of the Engineer-in-charge. No extra payment will be made on this account. The bidder has to make his own arrangement for procurement of the required testing apparatus. The pressure gauge used with the testing apparatus shall

be subjected to such test as the Engineer-in-Charge deems fit to ensure the accuracy of the gauge.

12.8. Refilling: After the pipelines are laid, jointed and tested in conformity to the relevant I.S. Specifications and to the satisfaction of Engineer-in-Charge the pipeline trenches should be refilled with excavated earth in layers of 6 inches. The clogs should be broken, sufficiently watered and consolidated. The surface should be brought to the original conditions by using the excavated material to the extent possible and using additional quantities of gravel and metal as the case may be. The extra earth after bringing back to the original condition should be disposed off as stipulated in paragraph-2.4.

CONDITIONS OF PRODUCTION OF MINERAL REVENUE CLEARANCE CERTIFICATE

Government Memo. NO.210/Mines-IV/77-B

Dated 8-3-1978.

Final payment for the work will be made only after the contractor produces a mineral clearance certificate issued by the concerned Assistant Director of Mines and Geology or Deputy Director of Mines and Geology to the effect that he has paid seignorage charges on the materials use by him on the work.

Seignorage charges for mineral and road materials will be recovered from the contractor's bills as per G.O.Ms.No.606, Industries and Commerce (M.I.V.) Department, dated 27-11-1980 and subsequent amendments.

CONDITIONS FOR ROCK CUTTING AND BLASTING WORKS ETC.

1. Payment towards rock removal shall be made separately.
2. Rock removal either by blasting or by crow bars should always be pre- measured and blasted. Removed stone should also be got stacked and pre-measurement should be recorded and should be verified with that based on stack measurements after ducting 40% for voids and the least of these two quantities above should be paid for. If stacking is not done properly the percentage of voids shall be assessed by the Engineer-in-Charge of the work and his decision shall be final.
3. In case where ever boulder rock is noted, it should also separately measured and paid and exposed rock should be pre-measured invariably in all cases.
4. The hard rock removed shall be property of [Government](#). The useful stone will be issued to the contractor if required on the work and the cost will be recovered at sanctioned estimate rates plus excess tender percentage if any.
5. Separate payment shall be made for filling sand and concrete wherever the same are done in trenches at places where rock cutting is done, or where treacherous soils are roved or to fill up the extra depth of the trench if such work is done as per the instructions of the Engineer-in-Charge of the work.
6. All R.C.C. NP3 Class pipe manufacturing, testing at factory, laying, jointing and testing at site of the pipeline for laying shall confirm to BIS 458/1988.
7. All the works shall be covered under the comprehensive insurance by obtaining policy which shall be in-force up-to expiration of defect liability period of two years.
8. The contractor has to make arrangements for diverting Traffic, hoarding, barricading, lighting etc., as safety measures.

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9. The contractor has to construct sheds for storing materials and site office etc.

GENERAL SPECIFICATION FOR GENERAL AND REINFORCED CEMENT COCNETRE

These specifications cover the requirements of cement concrete for use in favour of components or ordinary buildings for a items of concrete in any structural portion of the buildings or its components ordinary concrete shall be used unless and otherwise specified for the mix shown in drawings or as directed by the Engineer-in-charge may be used.

STRENGTH REQUIREMENT OF CONCRETE

ORDINARY CONCRETE: In case of ordinary concrete mix it is not required to be designed cement fine aggregates and coarse aggregates as specified by volume. The ordinary concrete shall be in four grades designed as M-10, M-20, M-15 & M-7.5.

In the designation of concrete mix, letter 'M' refers to the mix and the number to the specified 28 days cube compressive strength of that mix of 150mm cube, expressed in N/Sqmm.

STRENGTH REQUIREMENT OF CONCRETE: Where ordinary Portland cement conforming to IS 269/1976 or Portland blast furnace cement conforming to IS 455 is used the compressive strength requirements for various grades of concrete are given in Table-1. Where rapid hardening Portland cement is used, the 28 days compressive strength requirement specified in table-1 shall be at 7 days.

TABLE – 1

Grade of concrete	Compressive works strength in KG/Sq.Cm on 150mm cubes as conducted in accordance with IS 516.	
	Min. @ 7 days	Min.@ 28 day
M -10	7	10
M -15	10	15
M - 20	13	20
M - 25	17	25
M – 30	20	30
M - 35	23	35
M - 40	27	40
M – 45	30	45

NOTE: In all cases the 28 days compressive strength specified in table -1 shall alone be the criteria for acceptance or rejection of the concrete.

When the strength of concrete, mix as indicated by tests, like in between the strength for any two grades specified in table such concrete shall class for all purpose as concrete belonging to the lower of the two grades between which its strength varies.

ADMIXTURES

No materials other than the essential in-gradients i.e. cement aggregates and water shall ordinarily be used in the manufacturer of concrete or mortar. But the Engineer-in-Charge-in-charge may permit the use of approved admixtures for importing special characters to concrete on satisfactory evidence that its use does not in any way adversely affect the properties of concrete particularly its strength, volume, durability and has no deteriorious effect on the reinforcement.

SIZE OF COARSE AGGREGATES

Following shall be the maximum nominal size of coarse aggregate for the different items of work

Item of Construction	Max. Nominal size of coarse Aggregation
i. RCC well curb and RCC Piles	40 mm
ii. RCC well stunning	63 mm
iii. Well cap or pile cap, soil type for abutments and wing walls and pile caps	40 mm
iv. RCC Works in cross girders deck slab wearing coarse curb, light posts ballots walls approach slab etc., and hallow type piers, abutments wind walls and piers caps.	20 mm
v. RCC Bearing	20 mm
vi. For any other item construction not covered by items (i) to (v) above	As specified in the drawing as desired by the Engineer-in-charge incase it is not specified

For heavily reinforced concrete members as in the case of ribs of main beams nominal maximum size of aggregate shall usually be restricted to 5 mm less than the minimum internal clear distance between the main bars, or 5 mm less than the maximum cover to the reinforcement, whichever is smaller.

Except where it can be shown to the satisfaction of the Kukatpally Engineer-in-Charge that supply of properly graded aggregate of uniform quality can not be maintained till the completion of work grading of aggregate should be controlled by obtaining the coarse aggregate in different sizes, and stacking in separate stock piles. Required quantity of materials shall be stocked in separate stock piles. Several hours, preferably a day before use grading of coarse and fine aggregate shall be checked as frequently as possible, frequency for a given job being determined by the Engineer-in-Charge to ensure that the suppliers are maintaining the uniform grading.

Proportioning the quantity of both cement and aggregate shall be determined by weight wherever weight of cement is determined by accepting made weight per bag. A reasonable number of bags shall be weighted separately to check the net weight. Where cement is weighted from bulk stocks net by bags it shall be weighted separately from the aggregates, water shall either be measured by volume in calibrated tanks or weighed. All measuring equipment shall be maintained in a clean and serviceable condition. Their accuracy shall be periodically checked.

It is most important to keep the specified water cement ratio constant and at its correct value. In this regard moisture content in both fine and coarse aggregates shall be determined as frequently as possible, frequency for a given job being determined by the Engineer-in-Charge according to the weather conditions. The amount of mixing water shall then be adjusted to compensate for variation in the moisture content. For the determination of moisture content in the aggregate. IS 2386 (Part-II) shall be referred to. Suitable adjustment shall also be made in the weights of aggregate to allow for the variation in weight of aggregates due to variation in their moisture content.

Ordinary concrete

The ordinary concrete mix is generally specified by volume, For cement which normally shall be worked out taking 50 Kgs of cement as 0.035 cubic metre in volume. While measuring aggregate by volume, shaking or hammering shall not be done. Proportioning of sand shall be as per its dry volume and incase it is dry allowance, for bulking shall be made as per IS 2386 (Part-III).

In gradients required for ordinary concrete containing 50 Kgs bags of cement for different proportion of mix shall be as given in table, according to IS 456/1978.

Grade mix by volume of concrete	Total Qty of dry aggregates by Vol. Per 50 Kgs of cement to be taken as the sum of the individual No. of fine and coarse aggregate		Proportion of fine aggregate to coarse aggregate	Qty of water for 50 Kgs of cement mix
M. 10 (1:3:6)	300 Ltrs	480 Kgs	Generally 1:2 for fine aggregate to coarse aggregate by volume but subject to upper limit of 1:1.5 & a lower limit	34 Ltrs
M 15(1:2:4)	200 Ltrs	350 Kgs		32 Ltrs
M 20 (1:1.5:3)	150 Ltrs	250 Kgs		30 Ltrs

Note: 1) The proportions of the aggregates shall be adjusted from upper limit lower limit progressively as the grading of the fine aggregated become finer and the maximum size of coarse aggregate becomes large.

Example: For an average grading of fine aggregate (that is zone-II of IS 308/1963) the proportions shall be 1:2 ½ for maximum size of aggregate 10 mm 20 mm and 40 mm respectively.

Note: 2) A mix leaner than M10 (1:3:6) may be sued for non-structural parts of the building, if specified in the drawing or provided in the contract. In such case grading of aggregates shall be as specified in the contract or in the drawings. Other requirements for mixing planning shall be the same as specified in this schedule.

6.2 Quantity if Water: The quantity of water shall be just sufficient to produce a dense concrete of required workability for the job. An accurate rate and strict control shall be kept on the quantity of mixing water.

In the case of reinforced concrete work, workability shall be such that the concrete surrounds and properly grips reinforced. The degree of consistency shall depend upon the nature of work and method of vibration of concrete shall be determined by regular slump tests. Following slump shall be adopted for different type of works.

Type of Work	SLUMPS	
	Where vibrators are used	Where vibrators are not used
i) Mass concrete in RCC	10mm to 25 mm	80 mm

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foundations footings and retaining walls		
ii) Beams, slabs and columns	25 mm to 40 mm	10 mm to 120 mm
ii) Thin RCC section of congested steel	40 mm to 50 mm	125 mm to 150 mm

Mixing Concrete

For all works concrete shall be mixed in mechanical mixures, which along with other accessories shall be keep in first class working condition and so maintained so that during construction mixing shall be continuous till materials are uniformly distributed and an uniform colour of the entire masses is obtained and each individual particular of the aggregate shows complete coating of mortor containing its proportionate amount of cement. In no case shall be mixing done for less than 2 minutes after all in gradients have been put into the mixture.

Mixtures which have been out of use for more than 30 minutes shall be thoroughly cleaned before using for new batch. Unless other wise agreed to by the Engineer-in-Charge the first batch of concrete from the mixer shall contain only two thirds of the normal quantity of coarse aggregate. Mixing plant shall be thoroughly cleaned before changing from one type of cement to another.

8. Transport planning and compaction of Concrete: The method of transporting and placing concrete shall be approved by the Engineer-in-Charge. Concrete shall be so transported and placed that no contamination of the aggregates or loss of its constituent materials take place.

No concrete shall be placed in any part of the structure until the approval of the Engineer-in-Charge has been obtained.

If concreting is not started with 24 hours of the approval being given it shall be obtained again from the Engineer-in-Charge. Concreting then shall be proceed continuously over the area between construction joints. Frees concrete shall not be place against concrete which has been in position for more than 30 minutes of its discharge from the agitator.

Concrete when deposited shall have a temperature of not less than 4.5⁰ C and more than 35⁰ C. It shall be compacted in its final position within 30 minutes of its discharge from the mixer unless carried in properly designed agitators operating continuously. This time shall be within 2 hours of the addition of cement to the mix and within 30 minutes of its discharge from the agitator.

Except where otherwise agreed to be the Engineer-in-Charge concrete shall be deposited in horizontal layers to a compacted depth of not more than 0.45 meters when internal vibrators and used and not exceeding 0.30 meters in all other cases.

Unless otherwise agreed by the Engineer-in-Charge concrete shall be dropped into place from a height exceeding 2 meters. When druncking is used they shall be kept clean and used in such a way as to avoid segregation.

When concreting is to be resumed on a surface which was made with mortor it shall be clean, thoroughly wetted and spread with 13 mm thick layer of mortor comprised of cement and sand in the same ratio as in the concrete mix itself. This 13 mm layer of motor shall be properly mixed and placed immediately before placing of new concrete.

Where concrete has not fully hardened, all laitance shall be removed by rubbing the wet surface with wire of breathle brushes, care being taken to avoid dislodgement of any particular of course aggregate. The surface shall then be toughly wetted, free water relived, and then coated with neat cement grout. The fist layer of concrete to be placed in this surface, shall not exceed 15 mm in thickness, and shall be well assigned against old work, particular attention being given to corners and close spots.

All concrete shall be compacted to produce a dense homogeneous paste with assistance of vibrators. Unless otherwise permitted by the Engineer-in-Charge for exceptional cases, a sufficient vibrator in serviceable condition shall be kept at site so that spare equipment is always available in the event of break downs.

Internal vibrators shall be capable of producing not less than 10,000 cycles per minute and external form of vibrators not les than 3000 cycles per minute. Vibration shall not be applied through reinforcement, and where vibrators of the immersion type are used contractor with reinforcement shall be avoided as far as practicable.

9. CONCRETING UNDER WATER

Wherever it is necessary to deposit concrete under water, the machine equipment materials and proportion of the mix to be used shall be got approved by Engineer-in-Charge before any work is started. Such concrete shall not be considered as controlled concrete.

Concrete shall not be placed in water having a temperature below 4.5⁰ C. The temperature of the concrete, when deposited shall be not less than 16⁰ C not more than 38⁰ C.

Concrete shall contain 10% cement than that required for the same mix placed in the dry. The materials shall be so proportioned as to produced concrete having a slump of not less than 100mm and not more than 180mm. The slump shall be tested as per IS 516.

Concrete shall be deposited continuously until it has been brought to the required height. While depositing the top surface shall always be kept as nearly level as possible.

When depositing concrete in very hot weather precaution shall be taken so that the temperature of wet concrete do not exceed 30⁰ C while placing. This shall be achieved by stocking aggregate under the shade and keeping them moist, using cooled water, reducing the time between mixing and placing to the minimum, cooling during work by sprinkling water, starting concreting before concrete dries out and restricting concreting as for as possible to morning and evening.

10.FINISHING:Immediately after the removal of forms, all excess bars for bolts assigns through the reinforced cement concrete member used for shuttering or any other purpose shall be cut inside the reinforced cement concrete and to a depth atleast 25 mm below the surface of the concrete and the assaulting holes be closed by the cement mortar. All fans caused by forms joints, all activities produced by the removal of formwork and all other holes and depressions. Honey comb spots, broken edges or corners and other defects, shall be thoroughly cleaned, saturated wit water and carefully pointed and rendered that is being finished through filling of all voids. Surface which has been pointed shall be kept moist for a period of twenty four hours.

11. All construction and expansion joints in the completed work shall be carefully filled and free from any mortor and concrete. Expansion joint fillers shall be left exposed for its full length with clear and true edges.

12. If rock pockets and honey comb spots in the opinion of the Engineer-in-Charge are to such an extent that they may effect the strength of the structure materials or endanger the life of the

steel reinforcement he may declare that concrete is defective and order for the removal and replacement of the portions of the structure affected.

13. CONSTRUCTION JOINTS: Concreting shall be carried out continuously upto the construction joints, the position and details of which shall be shown in approved drawing or as directed by the Engineer-in-Charge such joints shall however be kept to the minimum.

For vertical constructions joints, a stopping board shall be fixed previously at the predetermined position and shall be properly stayed for sufficient lateral rigidity to prevent displacement of building when concrete is compacted. The board shall not be removed before the expiry of the specified period for removal of vertical forms. Concrete after the initial setting time shall be kept continuously wet for a period of not less than 14 days. Foundation concrete may be started after 48 hours of its laying but curing of concrete shall be continued for a minimum period 14 days.

Before resuming work at any construction joining where concrete has not yet fully hardened, all shall be removed thorough care being taken to avoid dislodgement of coarse aggregate as per S.S.No.1978 of APSS duly obtaining prior permission from the Police Department.

14. The camp and butting accommodation water supply and sanitary arrangements shall have to be provided as per schedule 'D' part – I and shall generally conform to the requirements and satisfaction of the Medical and Sanitary Authorities of the project and the entire cost thereof should be borne by the contractor himself and no extra payment will be made by the MUNICIPAL CORPORATION. Facilities arranged for by Kukatpally MUNICIPAL CORPORATION may be utilized by the workmen labourers to the extent possible.

15. Cement should not be stocked at low places where there is likelihood of water coming into contact with bags.

DIVISION- 7

MATERIALS REQUIRED FOR PIPELINE WORKS

7.1 Pipes:

7.1.1 The pipes required to be supplied for the works shall conform to the following I. S. specifications depending upon the nature of material for pipe specified in the bid document.

- a) I. S. 1592 of 1980 for A.C Pressure Pipes
- b) I. S. 458 of 1988 for R.C.C. Spun Pipes
- c) I. S. 1536 of 1976 for C. I. Spun pipes
- d) I. S. 7181 of 1986 for C.I. Double flanged pipes
- e) I.S 784 - 78 and 1343 - 80 for Manufacture of P.S.C pipes. The specification for M.S specials for P.S.C pipes shall conform to IS 7322 - 74. The specification for steel cylindrical reinforced concrete pipes shall be confirmed to IS 1916 - 63. The rubber ring for P.S.C. joints shall be confirmed to I. S 5382 - 85.
- f) I. S. 8329 – 2000 for D. I.
- g) I. S. 5382 – 1985 for Rubber
- h) I.S 15155 -2002 for BWSC pipes

7.1.2 The pipes supplied shall be subjected to all the tests specified in the relevant I.S. specifications before delivering at site and manufacturer's test certificate to this effect shall accompany each consignment delivered at site. In addition, the pipes at the manufacturer's factory site and the relevant test certificate shall also be produced along with each consignment, The charges for conducting the tests shall be borne by

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the bidder only these charges are not reimbursable by the employer for P.S.C pipes the test indicated in clause of I. S. 784 - 59, 458 - 88 and 3597 - 85 are to be followed.

- 7.1.3 A list of firms that are on the approved list of suppliers to the department will be supplied on request. The bidder is at liberty to procure the pipes from any of the firms in the approved list of suppliers but the responsibility for the pipes

conforming to the relevant IS specifications shall solely rest with the bidder only.

- 7.1.4 The bidder's rates for relevant items shall include not only the cost of pipes and taxes thereon and testing charges but also the charges for transportation to site and all subsequent handling and other incidental charges.

7.2 Cast-Iron-Specials:

- 7.2.1 The C.I. Specials to be supplied for use on the work shall conform to I. S. 1538 of 1976.

- 7.2.2 The MS special required for use on P.S.C. pipes are to be manufactured as per I.S. 1916-63 the material for manufacture of M. S. specials should conform to I. S. 226 - 75, 2062 - 80.

- 7.2.3 The cast-iron specials required on the job are indicated in the relevant plans contained in Vol -IV of bid documents. While sufficient care is taken by the employer to furnish as accurately as possible the specials required, the bidder is advised to inspect the alignments and satisfy himself about the sufficiency or otherwise of the special indicated, before quoting for the work. Any additional specials required on the work not arising out of any changes made by the employer in terms of Section 2, Cl. 28.1 of Vol. 1 shall be provided by the bidder at no extra cost.

- 7.2.4 A list of firms, which are on the approved list of suppliers to the Department, is given in Appendix 'B'. The bidder is at liberty to procure the specials from any of the firms in the approved list of suppliers but the responsibility for the specials conforming to the relevant I.S. specifications shall solely rest with the bidder only. The other conditions contained in paragraphs 7.1.4 above shall be applicable to the C.I. specials also.

7.3 Sluice valves:

- 7.3.1 The C.I. Sluice valves to be supplied for use on the work shall conform to I. S. 14846 – 2000 and contain the I. S. certification mark. The valves shall be of non-rising inside screw type, provided with C.I. cap or wheel as the case may be and valve key rod.

- 7.3.2 The other conditions contained in paragraphs above shall be applicable to the sluice valves also.

7.4 Air Valves:

- 7.4.1 The air valves to be supplied for use on the work shall conform to the description of double air valves maintained in section B of Glenfield and Kennedy catalogue for water works purposes unless otherwise specified, only kinetic double air valves shall be supplied

and installed on the pipelines. The size of valve to be used shall be related to the diameters of pipeline as indicated below:

Diameter of Pipe (in mm)	Size of Kinetic D.A.V to be use (in mm)
Upto 100	40
125 to 200	50
225 to 350	80
400 to 500	100
600 to 900	150

7.4.2 The other conditions contained in paragraphs 7.1.4 shall be applicable to the air valves also.

7.5 C.I. Detachable Joints:

7.5.1 The C.I. detachable joints to be supplied for jointing A.C. pressure pipes shall Conform to I.S. 8794 of 1988.

7.5.2 A list of firms which are on the approved list of suppliers to the department is given in Appendix 'C'. The bidder is at liberty to procure the C.I. detachable joints from any of the firms in the approved list of suppliers, but the responsibility for their conformity to the I.S. specifications and giving a water tight joint shall solely rest with the bidder only.

7.5.3 The other conditions contained in paragraphs 7.1.4 shall be applicable to the C.I. detachable joints also.

7.6 Rubber Rings:

7.6.1 The rubber rings to be used for the jointing of various types of pipes shall conform to the following I.S. specifications.

I.S. 5382 of 1969	-	For C.I. pipes, R.C.C. pipes A.C. pipes with C.I.D. joints.
I.S. 10292 of 1986 of 1969	-	For A.C. pipe with A.C. Couplings. I.S. 5382 For P.S.C. pipes

7.7 Pig Lead:

The Pig Lead to be used for jointing the C.I. Spun Pipes shall conform to IS 782 of 1978.

7.8 Hemp Yarn:

The Hemp Yarn to be used in jointing of various types of pipes shall conform to I. S. 6587 of 1966.

7.9 Rubber Insertion:

The Rubber Insertion to be used for jointing Cast-Iron double-flanged pipes shall conform to I. S. 638 of 1955.

7.10 Bolts and Nuts:

The Bolts and Nuts to be used for jointing the C.I. double-flanged pipes shall conform to I.S. 1363 - 1967.

7.11 C.I. Surface Boxes:

The C.I. Surface boxes to be used shall conform to I. S. 3950 - 1966.

7.12 C.I. Manhole frames and covers:

The C.I. Manhole frames and covers to be used shall conform to I. S. 1726 of 1974.

DIVISION - 8 LAYING AND JOINTING OF PIPELINES

8.1 Scope of the Contract:

The contract envisages civil works namely excavation of earth, laying, jointing and testing of pipelines and construction of masonry pits including fixing of valves such as sluice valves, scour valves, double air valves and surface boxes and auxiliary specials required for different types of pipes viz., A.C. pressure pipes, concrete pipes with socket and spigot ends and C.I. spun pipes with socket and spigot ends of flanged ends of different dias.

8.2 Materials:

The materials used shall conform to the relevant specifications mentioned in Division - 7.

The surplus materials if any left over due to additional purchase against possible breakages etc. will not be taken over by the department and payment will be restricted to the materials actually used on work.

8.3 Trench Work:

The trenches shall be so dug that the pipes may be laid to the required alignment gradient and depth. The width of trench above pipeline level shall be as small as possible but provide sufficient space necessary for jointing pipes. The walls of trenches shall be cut according to the slopes mentioned in relevant I. S. specifications The trenches shall be kept free from water while laying and jointing the pipes and specials.

The relevant clauses that govern the trench work and preparation of base for laying of various types of pipes are as detailed below:

1. A.C. Pressure pipes -Clause 4 of I. S. 6530 of 1972.
2. R.C.C. pipes -Clause 9 of IS- 783 of 1959.
3. C.I. pipes and D.I. pipes.
4. P.S.C. pipes class-3 of I.S 783-85 and section 126 of A.P.S.S
5. BWSC pipes – Relevant IS code

8.4 Handling and Laying of Pipes:

Reasonable care shall be exercised in Loading, Transporting and Unloading of pipes and specials. The pipes shall be lowered into the trench carefully and shall be laid true to alignment and gradient as specified and as per instructions of the Engineer- in-Charge.

The sections of the pipe shall be jointed together in such a manner that there shall be as little unevenness as possible a long inside of the pipes. Necessary precautions shall be taken while laying as per the relevant I.S. specifications for the type of pipes used, as mentioned below:

1. A.C. Pressure Pipes -Clause 5 of I.S. 6530 of 1972.
2. R.C.C. pipes -Clause 9 of IS 783 of 1959.
3. C.I. pipes & D.I. pipes -Clause 3 of IS 3114 of 1965.

4. PSC pipes Clause 9 of IS 783 of 85 and section 126 of APSS.
5. BWSC pipes – Relevant IS Code

8.5 Jointing:

Before commencing jointing, the pipes shall be cleaned the joints and the ends of the pipes shall be cleaned. Preferably with a hard wire brush to remove loose particles. Where jointing is done using rubber ring, care should be taken to see that the rubber ring does not get twisted or deformed while pushing the ring into position.

The jointing for various types of pipes shall conform to the requirements of the relevant I.S. specifications as detailed below:

1. A.C. Pressure Pipes : Clause 6 of I.S. 6530 of 1972.
2. R.C.C. Pipes : Clause 10 of I.S 783 of 1959.
3. C.I. pipes & D.I. pipes : Clause 5 of I.S. 3114 of 1965.
4. P.S.C. Pipes : Clause 10 of I.S. of 1985.
5. BWSC pipes : Relevant IS Code

8.6 Anchor and Thrust Blocks:

Thrust blocks, suitably designed shall be provided wherever necessary to transmit hydraulic pressure as laid down in the relevant I.S. specification. Where the hydraulic thrust is in an upward direction, anchor blocks of sufficient weight shall be provided, to which the pipes shall be secured with steel strips.

8.7 Testing:

After the pipes are laid and jointed as mentioned in 8.3 and 8.4 above, the pipelines are to be subjected to hydrostatic pressure test. The procedure for conducting the hydrostatic pressure test is detailed in the relevant I. S. specifications for various types of pipes, as indicated below:

1. A.C. Pressure Pipes -Clause 11 of I. S. 5530 of 1972.
2. R.C.C. Pipes -Clause 11 of I. S. 783 of 1959.
3. C.I. Pipes & D.I. pipes -Clause 6 of I. S. 3114 of 1965.
4. P.S.C. Pipes -Clause 11 of I. S. 783 of 1985.
5. BWSC pipes – Relevant IS Code

In portions of the pipelines, where the pipes have developed cracks or sweating, such pipes shall be removed and relaid with new pipes and the pipelines retested to the entire satisfaction of the Engineer-in-Charge. No extra payment will be made on this account. The bidder has to make his own arrangement for procurement of the required testing apparatus. The pressure gauge used with the testing apparatus shall be subjected to such test as the Engineer-in-Charge deems fit to ensure the accuracy of the gauge.

8.8 Appurtenant Works:

All the valves should be checked before fixing in position to verify whether they are closing and opening freely or not. Masonry pits for enclosing the sluice valves, scour valve, and double air valves are to be constructed after fixing the valves in position at the locations shown in the drawings contained in Volume-IV of bid documents. The earth work excavation, laying of plain cement concrete, construction of brick masonry and plastering, laying R.C.C. cover slabs shall conform to the relevant specifications contained in this volume. Fixing of valves and the specials shall conform to I.S. 3114 of 1965 and as specified in the drawings appended. The pits should be cleaned and

surroundings levelled with excavated earth and the bid price shall include cost of all these operations.

8.9 Refilling:

After the pipelines are laid, jointed and tested in conformity to the relevant I. S. specifications and to the satisfaction of Engineer-in-Charge the pipeline trenches should be refilled with excavated earth in layers of 6 inches. The clods should be broken, sufficiently watered and consolidated. The surface should be brought to the original condition by using the excavated material to the extent possible and using additional quantities of gravel and metal as the case may be. The extra earth after bringing back to the original condition should be disposed off as stipulated in paragraph 2.4.

10. HDPE PIPE LINES FOR WATER SUPPLY

10.1 HDPE PIPES

a). HDPE pipes shall conform to IS 4984 with ISI Mark manufactured by a factory having BIS certification. The pressure rating shall be as specified in the Bill of quantities (Schedule A) .

i.Colour: Colour of the pipe shall be black with 3 blue stripes .Depth of stripes shall not be more than 0.2 mm.

ii.Marking : Pipes shall be marked in white paint on either end and for coils at both ends or hot embossed on white base every metre throughout the length of pipe / coil with the following information

- I. Manufacturer ' name /Trade name
- II. Designation of pipe (Grade of raw material , class of pipe, nominal outside diameter)
- III. Lot number / Batch number
- IV. ISI Certificate Mark
- V. Raw material manufacturer

iii.Raw material : The contractor shall furnish certificate from the raw material manufacturer regarding the material used in the pipes for each consignment. The percentage of used material utilized in the manufacture of pipes shall not be more than 10. Is shall be pipe grade for water supply.

iv.Length of straight pipes: Length of straight pipes shall be 5 to 20 m or as specified by the

Engineer .Short length of 3 m (min) upto a maximum of 10% of the total supply will be permitted unless otherwise mentioned.

v.Coils: The diameter of the coil shall not be less than 25 times the nominal outside diameter of the pipe without any kinks.

vi. Method of measurement of diameter, thickness and ovality: Outside diameter shall be taken

as the average of two measurements taken at right angles for pipes upto 110 mm dia. As an alternative , diameter shall be measured preferably by using a flexible Pi tape or circometer, having an accuracy of not less than .01mm.

- vii. Thickness shall be measured by a dial vernier or ball ended micrometer. Resulting dimension shall be rounded to 0.1mm. Outside diameter shall be measured at a distance of at least 300 mm from the end of the pipe . In case of dispute , the dimension of pipes shall be measured after conditioning at room temperature for 4 hours.
- viii. Ovality : It is the difference between maximum outside diameter and minimum outside diameter at the same cross section at 300mm away from the cut end. For coiled pipes , it shall be measured prior to coiling (or after re-rounding of pipes)

b). Performance requirements :

- i). Visual appearance: Internal external surfaces shall be smooth ,clean and free from grooving and other defects . Ends shall be square with the axis of pipe. Slight shallow longitudinal grooves or irregularities in the wall thickness shall be permissible provided that the wall thickness remains within the permissible limits. The outside diameter ,thickness, tolerance in thickness, ovality shall be as shown in the following table.

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WALL THICKNESS (mm) FOR PE 63 PIPES

Nominal dia	Out Side dia	Ovality	Pressure rating(kg/ sq cm)												Tolerance in thickness (only +)
			2.5		4		6		10		12.5		16		
			Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	
50	50	1.4	-	-	2.4	2.9	3.5	4.1	5.6	6.4	6.8	7.7	8.4	9.4	0.5
63	63	1.5	2.0	2.4	3.0	3.5	4.4	5.1	7.0	7.9	8.6	9.6	10.5	11.8	0.6
75	75	1.6	2.3	2.7	3.6	4.2	5.3	6.0	8.4	9.4	10.2	11.4	12.5	14.0	0.7
90	90	1.8	2.8	3.2	4.3	5.0	6.3	7.2	10.0	11.2	12.2	13.6	15.0	16.7	0.9
110	110	2.2	3.4	3.9	5.3	6.0	7.7	8.7	12.3	13.7	14.9	16.6	18.4	20.4	1.0
125	125	2.5	3.8	4.4	6.0	6.8	8.8	9.8	13.9	15.5	16.9	18.8	20.9	23.2	1.2
140	140	2.8	4.3	4.9	6.7	7.6	9.8	11.0	15.6	17.4	19.0	21.1	23.4	25.0	1.3
160	160	3.2	4.9	5.6	7.7	8.6	11.2	12.5	17.8	19.8	21.7	24.0	26.7	29.6	1.5
180	180	3.6	5.5	6.2	8.6	9.7	12.6	14.1	20.0	22.2	24.4	27.0	30.0	33.2	1.7
200	200	4.0	6.1	6.9	9.6	10.7	14.0	15.6	22.3	24.7	27.1	30.0	33.4	36.9	1.8
225	225	4.5	6.9	7.7	10.8	12.0	15.7	17.5	25.0	27.7	30.5	33.7	37.5	41.5	2.1
250	250	5.0	7.6	8.6	11.9	13.3	17.5	19.4	27.8	30.8	33.8	37.4	41.7	46.1	2.3
280	280	9.8	8.5	9.6	13.4	14.9	19.6	21.7	31.2	34.5	37.9	41.9	46.7	51.6	2.6
315	315	11.1	9.6	10.7	15.0	16.7	22.0	24.4	35.0	38.7	42.6	47.1	52.5	58.0	2.9
355	355	12.5	10.8	12.1	16.9	18.8	24.8	27.5	39.5	43.6	48.0	53.0	59.2	65.3	3.2

TENDERER

TS-80 COMMISSIONER

WALL THICKNESS (mm) FOR PE 80 PIPES

(Outside dia ,ovality ,tolerance in thickness are same as that of Grade PE 63 given in the table given under PE 63 pipes)

Nominal dia	Pressure rating (kg/sq cm)							
	6		10		12.5		16	
	Min	Max	Min	Max	Min	Max	Min	Max
50	2.9	3.4	4.6	5.3	5.6	6.4	6.9	7.8
63	3.6	4.2	5.8	6.6	7.0	7.9	8.7	9.8
75	4.3	4.9	6.9	7.8	8.4	9.4	10.4	11.6
90	5.1	5.8	8.2	9.3	10.0	11.2	12.5	13.9
110	6.3	7.1	10.0	11.2	12.3	13.8	15.2	16.9
125	7.1	8.0	11.4	12.8	13.9	15.5	17.3	19.2
140	8.0	9.0	12.8	14.3	15.6	17.4	19.4	21.5
160	9.1	10.2	14.6	16.3	17.8	19.8	22.1	24.5
180	10.2	11.5	16.4	18.3	20.0	22.2	24.9	27.6
200	11.4	12.7	18.2	20.3	22.3	24.7	27.6	30.6
225	12.8	14.3	20.5	22.8	25.0	27.7	31.1	34.4
250	14.2	15.8	22.8	25.3	27.8	30.8	39.5	38.2
280	15.9	17.7	25.5	28.3	31.2	34.5	38.7	42.7
315	17.9	20.0	28.7	31.8	35.0	38.7	43.5	48.0
355	20.1	22.3	32.3	35.8	39.5	43.6	49.0	54.1

WALL THICKNESS FOR PE 100

(Outside dia, ovality, tolerance in thickness are same as that of Grade PE 63 given in the table given under PE 63 Pipes)

Nominal dia	Pressure rating (kg/sq cm)					
	10		12.5		16	
	Min	Max	Min	Max	Min	Max
50	3.7	4.3	4.6	5.2	5.7	6.4
63	4.7	5.3	5.8	6.5	7.1	8.1
75	5.6	6.3	6.8	7.7	8.5	9.5
90	6.7	7.5	8.2	9.2	10.2	11.4
110	8.1	9.1	10.0	11.2	12.4	13.9
125	9.2	10.4	11.3	12.7	14.1	15.7
140	10.3	11.6	12.7	14.1	15.8	17.6
160	11.8	13.2	14.5	16.1	18.1	20.1
180	13.3	14.8	16.3	18.1	20.3	22.6
200	14.8	16.4	18.1	20.1	22.6	25.0
225	16.6	18.4	20.4	22.6	25.4	28.1
250	18.9	20.5	22.6	25.1	28.2	31.2
280	20.6	22.9	25.3	28.0	31.6	35.0
315	23.2	25.7	28.5	31.5	35.5	39.3
355	26.1	29.0	32.1	35.5	40.0	44.2

- ii). Hydraulic characteristics: When subjected to internal pressure creep rupture test, the pipes shall not show signs of localised swelling, leakage or weeping and shall not burst during the test duration. The temperature, duration of test and induced stress for the test shall be as per details given in the table below

S.No	Test	Test temp C	Test duration (min holding time)	Induced Stress (Mpa)		
				PE 63	PE 80	PE 100
1	Type test	80	165	3.5	4.6	5.5
2	Acceptance test	80	48	3.8	4.9	5.7

The internal test pressure for the above test shall be calculated by adopting the formula given below

$$P = \frac{2 \times p \times s}{(d - s)}$$

where
 p=test pressure in Mpa
 s=minimum wall thickness in mm
 d=outside diameter in mm
 P=induced stress in Mpa as given in the table above

- iii). Reversion test : Longitudinal reversion shall not be greater than 3%
- iv). Overall migration test: When tested from a composite sample of minimum of 3 pipes as per IS 9845, the overall migration of constituents shall be within the limits specified in IS 10146.
- v). Density: Composite sample of minimum of 3 pipes as per IS 7328 shall have a density of 940.3-946.4 kg/ cu m at 27 deg C. The value of density shall not differ from the nominal value by more than 3 kg/ cu m as per clause 5.2.1.1 of IS 7328.
- vi). Melt flow rate (MFR): Composite sample of minimum of 3 pipes as per IS 2530 at 190 deg C with nominal load of 5 kgpf, MFR shall be 0.4 -1.1 g/ 10 minutes and also shall not differ by more than 30% of the material used in manufacturing of pipes. The MFR of the material shall be 0.41-1.10g/10 minutes when tested at 190deg C with nominal load of 5kgpf as determined by method prescribed in 7 of IS 2530. The MFR of the material shall be within ±20% of the value declared by the manufacturer.
- vii). Carbon black content and dispersion : For composite sample of minimum of 3 samples in accordance with IS 2530, the carbon black content shall be within 2.5+ 0.5% and the dispersion of carbon black shall be satisfactory.

C). Sampling ,frequency of tests and criteria for conformity for acceptance tests:

i). Lot: It shall consist of same size ,same pressure rating, same grade and manufactured essentially under similar conditions.
 The number of samples to be collected for various tests based on the size of lot shall be as per the table given below .The pipes shall be selected at random for sampling. Starting from any pipe in the lot ,count them as 1,2,3,4 etc upto 'r 'and so on where 'r' is the integral part of $\frac{N}{n}$, N being the number of pipes in the lot and 'n' is the number of pipes in the sample .Every Rth pipe so counted shall be drawn as to constitute the required sample size.

SAMPLE SIZE ,ACCEPTANCE CRITERIA

Number of pipes in lot	Sample number	Sample size	Cumulative sample size	Acceptance number	Rejection number
1	2	3	4	5	6
Upto 150	First	13	13	0	2
Do	Second	13	26	1	2
151-280	First	20	20	0	3
Do	Second	20	40	3	4
281-500	First	32	32	1	4
Do	Second	32	64	4	5
501-1200	First	50	50	2	5
Do	Second	50	100	6	7
1201-3200	First	80	80	3	7
Do	Second	80	160	8	9
3201-10,000	First	125	125	5	9
Do	Second	125	250	12	13
10,000-35000	First	200	200	7	11
Do	Second	200	400	18	19

ii). Visual and dimensions : They shall be checked from the first sample size. Pipes failing to satisfying any of the requirements shall be considered as defective. The lot is satisfied if the number of defectives found in the first sample are less than or equal to the corresponding number given in column 6 of the table .The lot is defective if the number of defectives is greater than the number in rejection number. If the defectives number is between columns '5'and '6', the second sample of sizes shall be taken and examined .The lot is considered satisfactory ,if the number of defectives found in the cumulative sample is less than or equal to the corresponding acceptance number .Otherwise it is considered not satisfactory.

iii). Hydraulic characteristics ,reversion, overall migration, MFR and carbon black / dispersion tests:

The lot having satisfied visual and dimensional requirements only shall be taken

up for further testing.

A separate sample size for each of the tests shall be taken as stipulated below and selected at random from the sample already examined for visual and dimensional inspection.

No of pipes	Sample size
Upto 150 pipes	3
151-1200	5
1201-35000	8

All the pipes in the sample shall be tested for requirements .The lot shall be considered satisfactory if none of the samples tested fails. .

10.2 Transporting and handling pipes, specials, appurtenances and safety, cutting, handling and safety

a). Transporting and handling:

Pipes and fittings must not be dropped, indented, crushed or impacted. Particular care should be taken to avoid scoring, scrapping and abrasion damage. Scores or scratches to a depth of 10% or more of wall thickness are sufficient to require rejection of the pipes and fittings. Pipes must not be stored or transported where they are exposed to heat sources likely to exceed 70° C e.g., vehicle exhaust gases.

b). Safety Precautions:

- i. PE particles can be abrasive if they enter eyes
- ii. Molten PE produced by welding operation will adhere strongly to the skin in the event of accidental contact. Should this occur, the affected part should be flooded with cold water. The molten or solidified material should not be removed from the skin and medical assistance should be obtained even for small burns.
- iii. Molten PE will yield a small quantity of fume especially at high temperatures. Work areas where welding is being carried out should be ventilated for safe working conditions.
- iv. In the event of fire, there are no restrictions on the type of extinguisher which can be used.

c). Storage

Pipe packs should be placed on timber bearers approximately 2m c/c. Avoid long term stacking of pipes. Providing proper regard is given to sideways stability (ex: wind forces), packs which are usually 1.2 meters wide may be stacked up to 3m in height for straight pipes. Coils stacked horizontally shall be placed on pallets for convenient lifting or slinging and the height of coils shall be limited to 1.0m in height.

d). Lifting and unloading

Metal hooks, chains or slings must not be used without padding for lifting coils or pipes. Care shall be taken to avoid injury to personnel when cutting the steel restraining bands on coils.

10.3 Earthwork and pipe support

- a). Earth work shall be as per the specifications given for CI pipes except the following:
 b). Trench widths shall be as per the following table

Pipes laid under the roads wider than 3.0 m

S no	Outside dia of pipe (mm)	Width of Trench (mm)	Depth of trench (mm)	Remarks
1	50	500	950	Provide 100 mm thick bedding where soils are poor or rock is met with. Increase the depth of trench by 100mm in such cases
2	63	500	950	
3	75	500	950	
4	90	500	1100	
5	110	500	1100	
6	125	500	1100	
7	140	500	1100	
8	160	600	1200	
9	180	600	1200	
10	200	600	1200	
11	225	600	1200	
12	250	600	1400	
13	280	600	1400	
14	315	600	1500	
15	355	600	1500	

Pipes laid under the roads less than 3.0 m wide/foot paths and valves provided

S no	Dia of pipe (mm)	Width of Trench (mm)	Depth of trench (mm)	Remarks
1	50	500	750	Provide mm thick bedding where soils are poor or rock is met with. Increase the depth of trench by 100mm in such cases
2	63	500	800	
3	75	500	800	
4	90	500	850	
5	110	500	950	
6	125	500	1000	
7	140	500	1000	
8	160	500	1000	
9	180	500	1000	
10	200	600	1200	
11	225	600	1200	
12	250	600	1400	

13	280	600	1400	
14	315	600	1500	
15	355	600	1500	

Pipes laid under roads less than 3.0 wide /foot paths and no valves provided

S no	Dia of pipe (mm)	Width of Trench (mm)	Depth of trench (mm)	Remarks
1	50	500	700	Provide mm thick bedding where soils are poor or rock is met with. Increase the depth of trench by 100mm in such cases
2	63	500	700	
3	75	500	700	
4	90	500	700	
5	110	500	750	
6	125	500	750	
7	140	500	750	
8	160	500	750	
9	180	500	900	
10	200	500	900	
11	225	500	900	
12	250	500	900	
13	280	500	900	
14	315	500	1000	
15	355	500	1000	

- c). The trench spoil material should be placed where it will not interfere with stringing and jointing of the pipes

10.5 PIPE LAYING

a) The pipe line may be laid along side the trench and jointed there. Thereafter the jointed pipe line shall be lowered into the trench carefully without causing undue bending. The pipe line shall be laid inside the trench with a slack of about 0.5 m per 100 m of pipe line (pipe line to be laid in a sinuous alignment).

b). Permissible radius at changes in direction:

i. Changes in direction shall be achieved by 'cold bending' at ambient temperature so long as the radius of curvature is not less than the values indicated below.

Standard dimension ratio (SDR)	Radius	Remarks
--------------------------------	--------	---------

41	40XDia	1. SDR = Ratio of outside diameter
42		and wall thickness
33	30Xdia	
26	25Xdia	2. Ambient temperature shall be 20 degree C or more
<21	20XDia	

ii). Fittings shall not be located on bent pipe and kept at least 1 m away from the tangent point

iii). Thrust blocks shall be provided near connections made from PE to other pipe materials

iv). Compressible material must be used around the pipe in the concrete

10.6 EMBEDMENT (i.e., refilling the trenches upto 50-100 mm above the top of pipe)

a) Pipes should not be buried in contact with soil particle sizes larger than the lesser of 5% dia of the pipe or 20mm. Soil clods must be excluded from the pipe embedment zone(i.e., from top of bedding to the top of overlay) and under no circumstances should temporary supports such as bricks or timber be left under or in contact with pipes. If the excavated material is not granular, suitable granular material duly compacted should be provided in this zone in 50-100mm layers up to 50-100mm above the top of pipe.

10.7 . CONCRETE ENCASEMENT AND THRUST (OR ANCHOR) BLOCKS

Pipes may be encased in concrete wherever necessary with provision for a mechanical key such as a welded thrust flange. Compressible material at least 3mm thick and at approximately 150mm from the face of concrete into the concrete shall be provided around pipes at the entry point and exit points to eliminate any potential sharp edges from rubbing against the pipe wall. Pipeline shall not be filled with water until the concrete has developed sufficient strength.

10.8 REFILLING THE TRENCHES OVER THE EMBEDMENT

a). It shall be done as specified for CI pipes except as provided herein

b). Delay the final back filling after compacting the embedment around the pipe until a cooler period in the day to permit the pipe line to contract in length. Mechanical joints, especially flanged joints should be left exposed if possible until the line is tested. Pipes should not be left uncovered where there is a possibility of the trench filling with water due to rain, etc, as floatation of the empty pipeline will occur unless it is back filled to a height of at least several diameters. Backfill the trench above the embedment zone. Heavy compaction of backfill should not

commence without at least 300mm of protective material covering the pipe.

(c) Measurement: While arriving back fill quantity with excavated material, the volume of pipe of out side diameters 315 mm or more shall be deducted.

10.10 JOINTING METHODS

a). Butt fusion welding

Jointing the HDPE pipes must be done with Butt welding equipment with the temperature and pressure recording arrangements. The pipe line may be laid along side the trench and jointed there Thereafter the jointed pipe line shall be lowered into the trench carefully without causing undue bending. The pipe line shall be laid inside the trench with a slack of about 0.5 m per 100 m of pipe line (pipe line to be laid in a sinuous alignment).

Pipe to be joined must be of the same wall thickness and the ends must be cut square. Unmatched wall thickness will require machining or chamfering of the greater thickness at an angle of 5 deg(1:4)or less to give the same thickness. The success of each weld is extremely dependent on cleanliness, temperature control and good equipment which has been properly maintained. The pipe ends should be dry and free of dust. Mating surfaces must be planed immediately before welding to remove surface material as polyethylene (PE) oxidises on exposure to air. If these prepared surfaces are touched, there is a risk of contamination.

The timing of the welding sequence is most important if consistent quality of weld is to be obtained. Times for the simultaneous heating of the pipe ends against the hot plate (mirror),mirror removal, the pressing of the melted pipe ends together to give the required amount and shape of bead material and finally the cooling time whilst maintaining pressure are all of critical importance.

If the pipe temperature is not uniform(eg: when welding is carried out in direct sunlight), an uneven pipe wall temperature will exist which could affect the uniformity of the weld. This temperature difference must be equalised by shielding the weld zone well in advance of making the joint. Covers on the ends of pipes remote from the weld will prevent cooling air from passing through the pipe interior and assist in keeping weld zone temperatures uniform.

The temperature of the hot plate will be in the range 200+ 10 deg C (takes about 30 minutes for electrical heating and more for blow torch) with the higher temperature recommended for PE80 to PE 100 welds. When welding is being performed in windy conditions, the temperature may need to be raised slightly to compensate for air cooling. If the

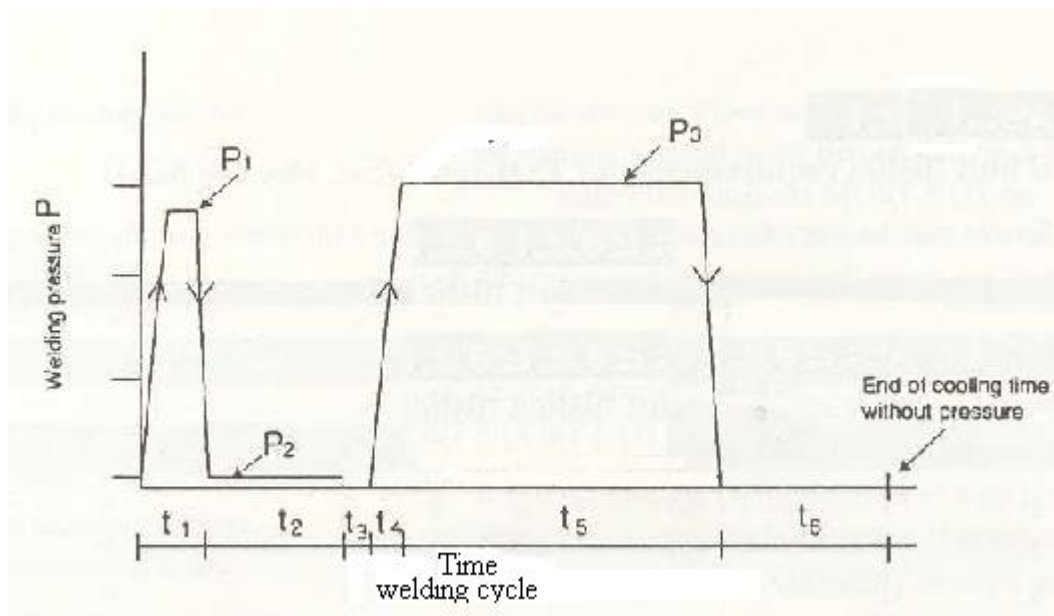
temperature is too high, there is a risk of thermal degradation of the PE resulting in a weak joint. If it is too low, it causes a weak joint due to insufficient melted material. The temperature of the hot plate must therefore be checked regularly. For detecting the correct temperature, crayon chalk shall be used. Around 200 deg C, the colour of crayon dot on the mirror changes within 2 seconds. The dot made shall be thin and if not, time taken will be more indicating a wrong temperature. It is important that the correct heating, jointing and cooling times be used. Excessive heating time will have the same effect as a temperature which is too high and possibly cause thermal degradation. Too short a heating time will result in insufficient melted material. The heating, jointing and cooling time should not vary significantly from the times shown in the table below. Otherwise the joint will not develop full strength. Longer cooling times are however permissible. Excessive pressure will squeeze the melted PE out of the joint and weaken it.

HEATING, JOINTING AND COOLING TIMES

Wall thickness (mm)	Initial bead width (mm)	Soak time t ₂ (sec)	Max t ₃ &t ₄ (sec)			Min t ₅ (minutes)	Final bead width (mm)		Min T ₆ (Minutes)
			SDR				Min	Max	
			41	17	9				
2	1	30	4	3	3	5	4	6	11
4	1	60	5	4	3	7	5	8	12
6	1	90	5	4	4	9	6	9	13
8	1	120	6	4	4	11	7	10	14
10	1	150	7	5	4	13	8	12	15
12	1	180	8	5	4	15	9	13	16

NOTE:

- t₃ must be as short as possible eg: a delay of only 3 sec can cause a temperature drop of 15deg C or more
- t₂: time of contact between the plate and pipe ends after relieving the pressure p₂.
- Excessive pressure will squeeze the melted PE out of the joint and weaken it



b). Butt fusion procedure:

- i. Clamp the pipes in the butt fusion machine
- ii. If practicable keep the brand markings in line
- iii. Wipe the pipe ends , inside and out, with a clean cloth to remove water ,dirt, muck etc
- iv. Align the pipe ends and clamp in place
- v. Plane both ends until they are perfectly square
- vi. Remove the plastic shavings from the vicinity of pipe ends without touching the prepared surface as any contamination at this stage will be detrimental to the welding process
- vii. Bring together the two pipe ends and ensure they are aligned
- viii. Check the hot plate (mirror) temperature (range 200-240deg C) and make certain the surfaces are clean. It is good practice to make `dummy ` welds daily, prior to welding sessions as a means of cleaning the mirror .That is ,the weld procedure should be taken to the heat soak stage ,when the process can be aborted .The hot plate surfaces must not be touched with metal implements or tools. A damaged or dirty mirror will result in a poor joint.
- ix. Move the pipe ends into contact with the hot plate and a steady pressure of about 2kg / sq cm(P1) while a uniform bead forms around the circumference of both pipe ends. This procedure is to ensure that the entire face of the pipe heats uniformly through positive contact with the mirror.
- x. When a satisfactory bead height has formed , relieve the pressure but maintain contact pressure between the plate and pipe ends of 0.5 kg/ sq cm (P2)until the recommended time t2 (heat soak time)has elapsed
- xi. Back the pipe ends away from the mirror . When removing the mirror ,make sure it is not wiped across the molten pipe ends
- xii. Bring the melted pipe ends together within the period t3 and allow the recommended pressure of 2-3 kg/ sq cm(P3) to build up within a time period of t4. This pressure should be applied by building up gradually to

- avoid squeezing out too much of the melt and held for a time of t_5 .Do not disturb the joint during the required cooling time of at least t_6 .
- xiii. Relax the contact pressure and carefully remove the clamps only after ensuring the joint has fully solidified .Do not stress the joint or debead until the required cooling time has elapsed

10.11 QUALITY CONTROL

a). Visual inspection of joints.

i). The beads should be uniform and symmetrical without any sharp notches. Refer the butt fusion weld section profiles given below which are useful to check the quality of joints .

ii). Inspection of Bead after removal: Use an approved bead removal tool to remove the bead .Do not remove bead by chipping or chiselling. Examine the underside of bead . It shall be solid and rounded with a broad root. Hollow beads with a thin root or curled edges should be rejected .When the bead is bent to reverse the curvature ,there should be no sign of any slits or fissures (given below)

b). Melt area assessment

The joint being tested is cut transversely into a strip approximately 20 mm wide and 150mm long. A small flame played on the exposed cut edge of the weld will cause differential shrinkage of the fusion melt and the parent pipe .The pattern thus created will illustrate whether too much pressure has been applied and thus squeezed out most of the melt

c). TENSILE STRENGTH

The test specimens are to be prepared as shown in the figure below.

Condition the specimens in air at 20 ± 2 deg C for >12 hours for pipes of wall thickness upto and including 12.7mm or < 24 hours for pipes of wall thickness over 12.7mm

Test specimen containing the weld zone is shall not fail to a stress which must not be less than 0.8 of that of the virgin parent pipe .The test is performed with the bead removed .

A normal pressure test on a welded pipe sample at 80 deg C should meet the requirements for pipe which does not contain weld material

The grip separation rate should be 50 mm/min $\pm 10\%$

Note the failure stress and mode of failure (ductile, tearing or brittle failure)

d). Acceptance criteria

If all specimens are visually sound and separate in a ductile manner, the welding can be judged as satisfactory . If the specimens exhibit brittle separation modes, the welds of the batch require further investigation .Number of samples to be tested is given below

Pipe size(mm)	Min number of samples
$>90 < 110$	2
$>110 < 180$	4
$>180 < 315$	6
>315	7

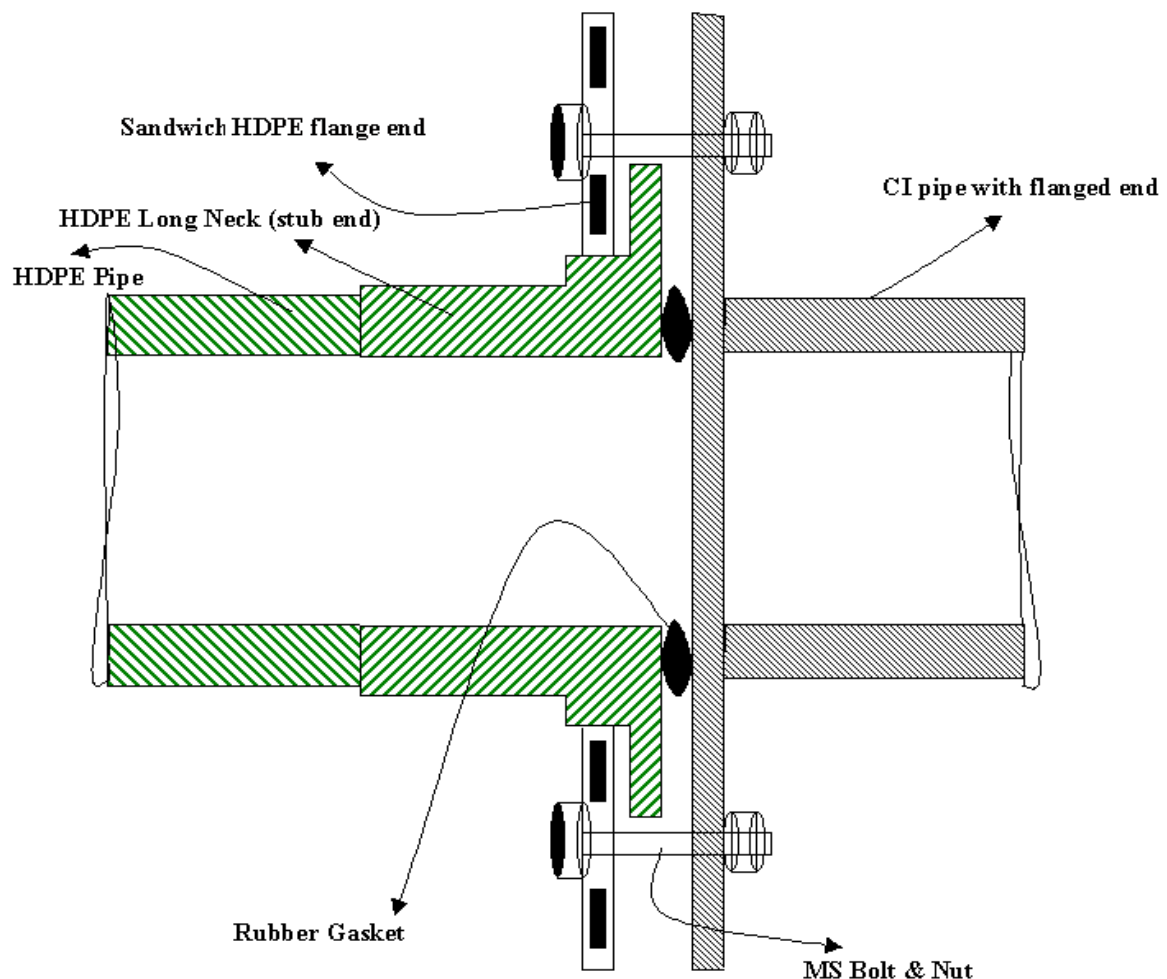
P L= test pressure (at start of test when the test pressure is first reached)
T =time (from reaching the test pressure)
T L= loading time
N= 0.04—0.05 for buried pipe
0.08---0.10 for above ground pipe

If the actual pressure recorded is found to vary significantly from the predicted value ,draw a graph showing the relationship between log pressure (on Y axis) and log time (on X axis).If the graph shows an increasing slope with time ie the actual recorded pressures are less than the predicted pressures , leakage is probable. If the graph shows a decreasing slope with time, ie the actual recorded pressures are greater than the predicted pressures, air entrapment is the likely cause. If the slope is linear but between the slopes identified(0.04-0.05 and 0.08-0.10) it indicates poor backfill compaction but not a failed test

In the event of a retest being required on the pipeline, this shall be done not earlier than 5 times the previous total test period.

10.12 FLANGED JOINTS:

Suitable metal plates shall be used to support the PE flanges to enable them to be bolted together. In most cases ,sealing is improved by incorporating a natural or synthetic rubber gasket between PE pipes. HDPE stub ends shall be



Flanged Joint for HDPE/CI Pipe

used at the joint.

10.13 ANCHORAGE AT VALVES:

Near valves, anchorage shall be provided to minimise the turning movement during operating of valves as shown in the figure below.

11.0 DISINFECTION OF PIPE LINE

12. DISINFECTION AND SCOURING

The pipe line shall be disinfected with water containing 50 ppm of chlorine and shall be retained for 24 hours and scoured.

The rates for the above operations shall be included in joining and testing of the pipe line.

13. OTHER SPECIFICATIONS:

A) Before commencing the works and also during the progress of works the contractor shall give the due notice to the concerned authorities viz., The MUNICIPAL CORPORATION, the Highway Department, The Electricity Board, the postal Telegraphic Department and the Traffic Department attached to the Police and other departments Corporation of companies as may be required to effect that the work is being taken up in a particular locality and necessary diversion of traffic may be arranged for. The contractor shall co-operative with department concerned and provide for necessary barricading of roads, protection to existing, water, main and service pipes, underground cables etc., met with during the excavation of trenches. The contractor shall provide at his own expenses watching and lighting arrangements by day and night and put up the required notice board such as "CAUTION" "ROAD CLOSED FOR TRAFFIC" etc., The trenches and valves pits shall be properly barricaded and fenced to prevent accidents.

C) He should also provide and maintain at his own cost the necessary supports for water main, under ground cables and service pipes, electric and telephone poles and posts etc., to afford best protection to them, in consultation with the authorities in charge of properties and to their best satisfaction.

D) The Contractor shall provide at his cost the testing equipment such as hydraulic test pump, pressure gauge etc., water required for testing, man and materials for the above test.

E) No complete length of pipeline shall be covered over until it is inspected by the departmental officers or his assistant and order is received for filling of the trenches

F) In case the test fails due to any defects or cracks in the pipes and specials or due to any leaky joints those shall be set right at the cost of the contractor by replacing the defective HDPE and specials with the new ones. During the testing if any hairline cracks or any sweating on pipes are observed the whole length or lengths of pipes should be removed to the extent required directed by the departmental officer and line laid jointed and tested for which no extra amount will be paid either for materials replaced such as pipes and specials etc., or for the labour charges involved there for, and it should be definitely understood that fit shall be done at the cost of contractor alone.

14. JOINTING OF C.I PIPES SPECIALS WITH LANGED JOINTS.

A) As soon as a pipe line is hydraulically rested, the contractor shall arrange for refilling the trenches, with the approval of the departmental authorities. The trenches shall be carefully refilled with the excavated materials in layers *in* not more than six inches each, leveled, watered well and consolidated properly, Refilling shall be done with great care so as not to damage either the pipes, specials and joints, after refilling is done. The road surface shall be reformed to proper levels using the materials obtained from the road surface and supplementary with new materials and other materials and other materials as sound necessary

B) Plans and schedules are subject to alternations during the execution and payment will be made on actual requirements.

C) The Contractor agrees that before final payment shall be made, he will sign and delivery to the Executive Engineer either in the measurement books or other wise as demanded release and discharge from any and all claims and demands whatever for all matter arising out connected with the contract provided that Nothing in this clause shall discharge of release the contractor from liabilities under the contract.

D) It is further expressly agreed that the executive Engineer is supplying the final measurement certificates, need not be bound the proceeding measurements and payment. The final measurements if any of the Executive Engineer shall be final conclusive and binding on the contractor.

15. TERMS OF PAYMENT

A) After manufacture supplying of HDPE pipes at site. - 65% of cost of pipes

B) After laying and jointing - 15% of cost of pipes

C) After completion hydraulic field testing - 20% of cost of pipes

(a) The above stage payment will however be released after completion of each stage of work and also when the work and the next stage is under swift progress to the satisfaction of the Executive Engineer (PH) concerned.

(b) The above break up payment is subject to standard deduction of 7.5% towards retention from bills.

(c) Payment will be made for laying, jointing and testing as a single unit of work only after testing is done to a total hydrostatic field test pressure

16. ITEM OF PAYMENT

A) For all civil work payment will be covered as per clause 68 of PS to APSS amended to from time to time.

B) The EMD will be release only after completion of defect liability period of two years successfully. During the defect liability period, the contractor has to attend all sorts of repairs and replace the materials required at free of cost as per the instructions of the departmental offices. However the ESD will be released as submission of necessary bank guarantee from the nationalized bank.

C) Payment of excavation in rock requiring blasting shall be made on stack measurements duly deducting 40% towards voids.

DIVISION
CONSTRUCTION OF ELEVATED SERVICE
RESERVOIRS AND OTHER
WATER RETAINING STRUCTURES

13.1 SCOPE OF CONTRACT:

The contract envisages, construction of an Elevated Service Reservoir / water retaining structure in reinforced cement concrete as per the departmental designs, drawings and specifications including earth work excavation, supply and fixing of accessories as specified supply, hoisting, keeping in position and jointing of C.I. double flanged pipes, specials and valves and construction of valve pits as required.

13.2 MATERIALS:

- 13.2.1 Cement: Shall conform to the requirements of Section 4.1.4.
- 13.2.2 Water: Shall confirm to the requirements of Section 4.1.5.
- 13.2.3 Sand: (Fine Aggregate): Shall conform to the requirements of Section 6.2.5.
- 13.2.4 Coarse Aggregate: Shall conform to the requirements of Section 6.2.6.
- 13.2.5 Bricks: Shall conform to the requirements of Section 4.1.2
- 13.2.6 Reinforcement: The steel to be used as reinforcement in the structure shall conform to I.S. 1139 -1966 in the case of mild steel and I.S. 178 -1979 (Grade Fe 415) in the case of deformed bars or HYSD.
- 13.2.7 Cast Iron Pipes, Specials, Manhole Covers, Valves and Jointing Material: Shall conform to the relevant clauses of Section 7.
- 13.2.8 Lightening Arrestor: Shall conform to the requirements of I. S. 3070 -1794.
- 13.2.9 Float operated Water level Indicator and Gauge: Shall conform to the departmental requirements and shall include brass pulley, bracket, nylon thread, PVC float, enameled gauge numbered in MTs and 1 / 10th of MT with moving index etc.

13.3 SITE CLEARANCE:

Shall conform to the requirements of Section 2. The quoted rate shall include cost of all operations as envisaged in this section.

13.4 EARTH WORK

The earthwork excavation shall conform to the requirements of Section 3. The quoted rate shall include cost of all operations required for completing the structure, as per the departmental plans and specifications.

13.5 CONCRETE

- 13.5.1 General: The cement concrete work to be carried out under this contract shall conform to the general requirements detailed in Section - 6.
- 13.5.2 Constructional Requirements: The construction of the structure shall conform to the requirements of I.S. 3330 Part, II and IV.

- 13.5.3 Leveling Course: The concrete to be used shall be of M 10 grade conforming to I.S. 456 – 2000.
- 13.5.4 Footings, Columns braces, R.C.C. ladders and staircase: The concrete to be used for these members shall be of M 20 grade, unless otherwise specifically mentioned in the drawings, conforming to I.S. 456-2-000.
- 13.5.5 Other Members: The concrete to be used for the rest of the members like floor slab / dome, beams, side wall, roof slab/dome shall be of M 20 grade conforming to I. S. 456-2000.

13.6 MASONRY PITS:

The Masonry pits shall be constructed for access to the operating valves as shown in the departmental drawings. The various items involved like concrete in foundations, masonry for side walls, plastering in cement mortar cover slabs in RCC etc., shall conform to the relevant sections in this volume.

13.7 C.I. PIPE CONNECTIONS:

- 13.7.1 The vertical pipe connections shall be hoisted and fixed true to plumb without any deviation from the vertical as directed by the Engineer-in-Charge or his authorised.
- 13.7.2 The jointing of pipes shall conform to the requirement in Section 8.

13.8 VENTILATORS:

- 13.8.1 The M.S. ventilators to be provided on the top of the roof slab/dome shall be of 150mm dia. fabricated from Mild Steel Sheet of 8mm thickness conforming to I.S. The ventilators shall be provided with mosquito proof wire mesh.
- 13.8.2 The M.S. ventilators shall be fixed as directed by the Engineer-in-Charge or his authorised representative.

13.9 FIXING OF OTHER ACCESSORIES:

- 13.9.1 The lightning arrestor shall be fixed in accordance with the requirements of I. E. Act. 1910 and Rules there under as amended from time to time.
- 13.9.2 The water level indicator shall be fixed as directed by the Engineer-in-Charge or his authorised representative. It should be ensured that the index moves smoothly without any friction over the gauge in order to give correct indication of the depth of the water available in storage.

13.10 TESTING:

The structure after completion shall be subjected to water tightness test at full supply level, as laid down in clause 10 of I. S. 3370 (Part-I) -1965. The filling of the reservoir shall be gradual and not more than 15 cms, of raise in water level per day shall be permitted. The structure shall satisfy the water tightness requirements as indicated in clause 10.1.1 or 10.1.2 of I.S. 3370 (Part-I) -1965 as the case may be.

13.11 FINISHING:

A smooth dense surface free from work ridges shall be ensured. After satisfactory completion of testing of the reservoir for water tightness all external surfaces of concrete shall be painted with two coats of snowcem cement of approved colour and quality over a printing coat as per the directions of the Engineer-in-Charge.

13.12 GUARANTEE:

The structure and all the appurtenant fixtures shall be guaranteed for satisfactory functioning for a period of 24 months from the date on which all defects have to be rectified and the reservoir has been filled upto MWL and satisfies the water tightness test mentioned in Clause 10.1.1 above.

SCHEDULE – E

1. The tenderer shall not be at liberty to remove from the site the departmental materials supplied to him.
2. Time shall be considered essence of contract. If the contractor fails to maintain the date of progress as given in para 13 of tender notice action will be taken to levy penalty as per clause 60 of preliminary specification of APSS.
3. Cement concrete should be machine mixed and machine vibrated.
4. The proportions of cement concrete specified in the schedule are nominal and are indicative of approximate proportion of cement fine aggregate and coarse aggregate which may have to be altered suitably at site to obtain the desired strength and workability. However, the quantity of cement shall not be less than that as specified below.

EXCAVATION OF FOUNDATION

16. All materials in the excavation shall be cleared at contractor's expense. If the excavation has been gone beyond the required levels it shall be filled with concrete or masonry as decided by the [Engineer-in-Charge](#) and no payment will be made for such quantities. Refilling of foundations with selected soils is to be done by adopting suitable method of consolidation. The soil obtained from excavation shall be deposited as directed and as per site conditions. The contractor shall obtain suitable soils approved by the Engineer-in-Charge for filling of trench. The rates in scheduled "A" are inclusive of all the above operations. Blasting within one meter of foundation is strictly prohibited as such blasting close to the foundation may inflict damage to foundation.
17. Payment will be made for box cutting only with vertical sides as defined by the foundation dimensions of the structure. The contractor shall have to make his own arrangements for shoring strutting provision of adequate slopes for the sides to prevent slips, etc., and no separate charges will be paid for any incidental charges arising either during the excavation of foundation or the construction of the structure. The rate quoted shall be inclusive of all incidental charges and cover the additional excavation necessary to keep the sides of the pit stable and safe.

SPECIAL SPECIFICATIONS FOR EARTH WORK

18. No re-handling of excavated soil due to injudicious selection for dumping will be paid for.
19. Open excavation done only once during the period of execution will be paid for as per the section and plan of the excavation. If the contractor finds it more convenient to make out the excavation at slopes other than shown in the plan to avoid shoring in any case it shall be done at his cost and it shall be his responsibility to make the excavation perfectly safe at all the stages for the workmen.

20. Actual soils met with during only be paid for the Engineer-in-Charge's decision in regarding to classification of soils is final.
21. Whenever the rock is met with the surface should be exposed for inspection by the Engineer-in-Charge or his authorized subordinates. The boulders to be removed shall be marked. The pre-measurements shall be taken either by taking levels or string sections by measuring length, breadth and depth by whichever method is found possible and convenient. When it is not possible to take pre-measurement of the H.R. and boulder owing to the fact that the occurrence intermingled soils the over all measurements of soils including the rock boulders shall be taken as a whole thing will be allowed to be removed. After the work is completed a certificate of clearance will be recorded in the measurement book. The quantity of soil will be arrived at by deduction from the over all pre-measurements, the quantity of rock boulders which will be arrived after deduction at 40% for voids from stock measurement. For this purpose the stock must be closely packed with minimum voids, and in case of loose or improper stocking such increased percentage as may be deemed necessary by the Engineer-in-Charge will be deducted from stock measurements to arrive at the rock quantity. The width of the stock must not be more than 2 meters and the depth not more than 1.00 meter.
22. After excavation of foundation upto the foundation level is completed as decided by the [Engineer-in-Charge](#) and in case it is slurry, drilling and grouting will be done by the MUNICIPAL CORPORATION and the contractor shall make it convenient for the MUNICIPAL CORPORATION to carry out the work. During the above operation by the MUNICIPAL CORPORATION the contractor shall keep foundation exposed with his pumps and equipment without any extra claim over the rates quoted by him. In case of delay by the MUNICIPAL CORPORATION in completing those items of work reasonable extension of time as decided by the Municipal Commissioner will be granted and unit rate quoted holds good even if the design is altered during execution.
23. If for reasons like unsuitable strata, the foundations are to be taken to lower levels than those in plan the contractor shall do so without any claim for compensation, the actual quantity of work done will be paid for at relevant rates in Schedule – "A".
24. **DIVERSION OF ARRANGEMENTS:** The work of diversion arrangement should be carefully planned and prepared by the contractor and forward to the Engineer-in-Charge for technically substantiating the proposals and approval of the Engineer-in-Charge should be obtained for execution. The contractor has to arrange for approach roads, bailing out of water shoring and shuttering protection to the work in progress safety measures for materials and all other necessary arrangements to complete the work at his own cost and no extra payment is admissible.
25. **Masonry Items:** Groove for fixing embedded parts as directed have to be left on masonry or concrete as desired by the Engineer-in-Charge and no extra payment will be made on this account.
During the above operations by the Municipal any delay in completing these items of work, reasonable extension of time as decided by the Municipal Commissioner will be granted and no claim for any compensation will be entertained on this account. The Unit rates will hold good if the design is altered during execution.

CONDITIONS OF PRODUCTION OF MINERAL REVENUE CLEARANCE CERTIFICATE

Government Memo. NO.210/Mines-IV/77-B

Dated 8-3-1978.

Final payment for the work will be made only after the contractor produces a mineral clearance certificate issued by the concerned Assistant Director of Mines and Geology or Deputy Director of Mines and Geology to the affect that he has paid signorage charges on the materials use by him on the work.

Municipal Asst. Engineer
Commissioner.

Municipal

Seignorage charges for mineral and road materials will be recovered from the contractor's bills as per G.O.Ms.No.606, Industries and Commerce (M.I.V.) Department, dated 27-11-1980 and subsequent amendments.

CONDITIONS FOR ROCK CUTTING AND BLASTING WORKS ETC.

10. Payment towards rock removal shall be made separately.
11. Rock removal either by blasting or by crow bars should always be pre-measured and blasted. Removed stone should also be got stacked and pre-measurement should be recorded and should be verified with that based on stack measurements after ducting 40% for voids and the least of these two quantities above should be paid for. If stacking is not done properly the percentage of voids shall be assessed by the Engineer-in-Charge of the work and his decision shall be final.
12. In case where ever boulder rock is noted, it should also separately measured and paid and exposed rock should be pre-measured invariably in all cases.
13. The hard rock removed shall be property of Government. The useful stone will be issued to the contractor if required on the work and the cost will be recovered at sanctioned estimate rates plus excess tender percentage if any.
14. Separate payment shall be made for filling sand and concrete wherever the same are done in trenches at places where rock cutting is done, or where treacherous soils are roved or to fill up the extra depth of the trench if such work is done as per the instructions of the Engineer-in-Charge of the work.
15. All R.C.C. NP3 Class pipe manufacturing, testing at factory, laying, jointing and testing at site of the pipeline for laying shall confirm to BIS 458/1988.
16. All the works shall be covered under the comprehensive insurance by obtaining policy which shall be in-force up-to expiration of defect liability period of two years.
17. The contractor has to make arrangements for diverting Traffic, hoarding, barricading, lighting etc., as safety measures.
18. The contractor has to construct sheds for storing materials and site office etc.

GENERAL SPECIFICATION FOR GENERAL AND REINFORCED CEMENT COCNETE

These specifications cover the requirements of cement concrete for use in favour of components or ordinary buildings for a items of concrete in any structural portion of the buildings or its components ordinary concrete shall be used unless and otherwise specified for the mix shown in drawings or as directed by the Engineer-in-charge may be used.

STRENGTH REQUIREMENT OF CONCRETE

ORDINARY CONCRETE: In caseof ordinary concrete mix it is not required to be designed cement fine aggregates and coarse aggregates as specifiedby volume. The ordinary concrete shall be in four grades designed as M-10, M-20, M-15 & M-7.5.

Inthe designation of concrete mix, letter 'M' refers to the mix and the number to the specified 28 days cube compressive strength of that mix of 150mm cube, expressed in N/Sqmm.

Municipal Asst. Engineer
Commissioner.

Municipal

STRENGTH REQUIREMENT OF CONCRETE: Where ordinary Portland cement conforming to IS 269/1976 or Portland blast furnace cement conforming to IS 455 is used the compressive strength requirements for various grades of concrete are given in Table-1. Where rapid hardening Portland cement is used, the 28 days compressive strength requirement specified in table-1 shall be at 7 days.

TABLE – 1

Grade of concrete Compressive works strength in KG/Sq.Cm on 150mm cubes as conducted in accordance with IS 516.

	Min. @ 7 days	Min.@ 28 day
M -10	7	10
M -15	10	15
M - 20	13	20
M - 25	17	25
M – 30	20	30
M - 35	23	35
M - 40	27	40
M – 45	30	45

NOTE: In all cases the 28 days compressive strength specified in table -1 shall alone be the criteria for acceptance or rejection of the concrete.

When the strength of concrete, mix as indicated by tests, like in between the strength for any two grades specified in table such concrete shall class for all purpose as concrete belonging to the lower of the two grades between which its strength varies.

ADMIXTURES

No materials other than the essential in-gradients i.e. cement aggregates and water shall ordinarily be used in the manufacturer of concrete or mortar. But the Engineer-in-Charge-in-charge may permit the use of approved admixtures for importing special characters to concrete on satisfactory evidence that its use does not in any way adversely affect the properties of concrete particularly its strength, volume, durability and has no deterious effect on the reinforcement.

SIZE OF COARSE AGGREGATES

Following shall be the maximum nominal size of coarse aggregate for the different items of work

Item of Construction	Max. Nominal size of coarse Aggregation
i. RCC well curb and RCC Piles	40 mm
ii. RCC well stunning	63 mm
iii. Well cap or pile cap, soil type for abutments and wing walls and pile caps	40 mm
iv. RCC Works in cross girders deck slab wearing coarse curb, light posts ballots walls approach slab etc., and hallow type piers, abutments wind walls and piers caps.	20 mm
v. RCC Bearing	20 mm
vi. For any other item construction not covered by drawing items (i) to (v) above	As specified in the as desired by the Engineer-in-charge incase it is not specified

For heavily reinforced concrete members as in the case of ribs of main beams nominal maximum size of aggregate shall usually be restricted to 5 mm less than the minimum internal clear distance between the main bars, or 5 mm less than the maximum cover to the reinforcement, whichever is smaller.

Except where it can be shown to the satisfaction of the Kukatpally Engineer-in-Charge that supply of properly graded aggregate of uniform quality can not be maintained till the completion of work grading of aggregate should be controlled by obtaining the coarse aggregate in different sizes, and stacking in separate stock piles. Required quantity of materials shall be stocked in separate stock piles. Several hours, preferably a day before use grading of coarse and fine aggregate shall be checked as frequently as possible, frequency for a given job being determined by the Engineer-in-Charge to ensure that the suppliers are maintaining the uniform grading.

Proportioning the quantity of both cement and aggregate shall be determined by weight wherever weight of cement is determined by accepting made weight per bag. A reasonable number of bags shall be weighted separately to check the net weight. Where cement is weighted from bulk stocks net by bags it shall be weighted separately from the aggregates, water shall either be measured by volume in calibrated tanks or weighed. All measuring equipment shall be maintained in a clean and serviceable condition. Their accuracy shall be periodically checked.

It is most important to keep the specified water cement ratio constant and at its correct value. In this regard moisture content in both fine and coarse aggregates shall be determined as frequently as possible, frequency for a given job being determined by the Engineer-in-Charge according to the weather conditions. The amount of mixing water shall then be adjusted to compensate for variation in the moisture content. For the determination of moisture content in the aggregate. IS 2386 (Part-II) shall be referred to. Suitable adjustment shall also be made in the weights of aggregate to allow for the variation in weight of aggregates due to variation in their moisture content.

Ordinary concrete

Municipal Asst. Engineer
 Commissioner.

Municipal

The ordinary concrete mix is generally specified by volume, For cement which normally shall be worked out taking 50 Kgs of cement as 0.035 cubic metre in volume. While measuring aggregate by volume, shaking or hammering shall not be done. Proportioning of sand shall be as per its dry volume and incase it is dry allowance, for bulking shall be made as per IS 2386 (Part-III).

In gradients required for ordinary concrete containing 50 Kgs bags of cement for different proportion of mix shall be as given in table, according to IS 456/19

Grade mix by volume of concrete	Total Qty of dry aggregates by Vol. Per 50 Kgs of cement to be taken as the sum of the individual No. of fine and coarse aggregate		Proportion of fine aggregate to coarse aggregate	Qty of water for 50 Kgs of cement mix
M. 10 (1:3:6)	300 Ltrs	480 Kgs	Generally 1:2 for fine aggregate to coarse aggregate by volume but subject to upper limit of 1:1.5 & a lower limit	34 Ltrs
M 15(1:2:4)	200 Ltrs	350 Kgs		32 Ltrs
M 20 (1:1.5:3)	150 Ltrs	250 Kgs		30 Ltrs

Note: 1) The proportions of the aggregates shall be adjusted from upper limit tower limit progressively as the grading of the fine aggregated become finer and the maximum size of coarse aggregate becomes large.

Example: For an average grading of fine aggregate (that is zone-II of IS 308/1963) the proportions shall be 1:2 ½ for maximum size of aggregate 10 mm 20 mm and 40 mm respectively.

Note: 2) A mix leaner than M10 (1:3:6) may be sued for non-structural parts of the building, if specified in the drawing or provided in the contract. In such case grading of aggregates shall be as specified in the contract or in the drawings. Other requirements for mixing planning shall be the same as specified in this schedule.

6.2 Quantity if Water: The quantity of water shall be just sufficient to produce a dense concrete of required workability for the job. An accurate rate and strict control shall be kept on the quantity of mixing water.

In the case of reinforced concrete work, workability shall be such that the concrete surrounds and properly grips reinforced. The degree of consistency shall depend upon the nature of work and method of vibration of concrete shall be determined by regular slump tests. Following slump shall be adopted for different type of works.

Type of Work	SLUMPS	
	Where vibrators are used	Where vibrators are not used
i) Mass concrete in RCC foundations footings and retaining walls	10mm to 25 mm	80 mm
ii) Beams, slabs and columns	25 mm to 40 mm	10 mm to 120 mm
ii) Thin RCC section of congested steel	40 mm to 50 mm	125 mm to 150 mm

Mixing Concrete

For all works concrete shall be mixed in mechanical mixures, which along with other accessories shall be keep in first class working condition and so maintained so that during construction mixing shall be continuous till materials are uniformly distributed and an uniform colour of the entire masses is obtained and each individual particular of the aggregate shows complete coating of mortar containing its proportionate amount of cement. In no case shall be mixing done for less than 2 minutes after all in gradients have been put into the mixture.

Mixtures which have been out of use for more than 30 minutes shall be thoroughly cleaned before using for new batch. Unless other wise agreed to by the Engineer-in-Charge the first batch of concrete from the mixer shall contain only two thirds of the normal quantity of coarse aggregate. Mixing plant shall be thoroughly cleaned before changing from one type of cement to another.

8. Transport planning and compaction of Concrete: The method of transporting and placing concrete shall be approved by the Engineer-in-Charge. Concrete shall be so transported and placed that no contamination of the aggregates or loss of its constituent materials take place.

No concrete shall be placed in any part of the structure until the approval of the Engineer-in-Charge has been obtained.

If concreting is not started with 24 hours of the approval being given it shall be obtained again from the Engineer-in-Charge. Concreting then shall be proceed continuously over the area between construction joints. Fresh concrete shall not be place against concrete which has been in position for more than 30 minutes of its discharge from the agitator.

Concrete when deposited shall have a temperature of not less than 4.5° C and more than 35° C. It shall be compacted in its final position within 30 minutes of its discharge from the mixer unless carried in properly designed agitators operating continuously. This time shall be within 2 hours of the addition of cement to the mix and within 30 minutes of its discharge from the agitator.

Except where otherwise agreed to be the Engineer-in-Charge concrete shall be deposited in horizontal layers to a compacted depth of not more than 0.45 meters when internal vibrators and used and not exceeding 0.30 meters in all other cases.

Unless otherwise agreed by the Engineer-in-Charge concrete shall be dropped into place from a height exceeding 2 meters. When dropping is used they shall be kept clean and used in such a way as to avoid segregation.

When concreting is to be resumed on a surface which was made with mortar it shall be clean, thoroughly wetted and spread with 13 mm thick layer of mortar comprised of cement and sand in the same ratio as in the concrete mix itself. This 13 mm layer of mortar shall be properly mixed and placed immediately before placing of new concrete.

Where concrete has not fully hardened, all laitance shall be removed by rubbing the wet surface with wire of bristle brushes, care being taken to avoid dislodgement of any particular of coarse aggregate. The surface shall then be toughly wetted, free water relived, and then coated with neat cement grout. The first layer of concrete to be placed in this surface, shall not exceed 15 mm in thickness, and shall be well assigned against old work, particular attention being given to corners and close spots.

All concrete shall be compacted to produce a dense homogeneous paste with assistance of vibrators. Unless otherwise permitted by the Engineer-in-Charge for exceptional cases, a sufficient vibrator in serviceable condition shall be kept at site so that spare equipment is always available in the event of break downs.

Internal vibrators shall be capable of producing not less than 10,000 cycles per minute and external form of vibrators not less than 3000 cycles per minute. Vibration shall not be applied through reinforcement, and where vibrators of the immersion type are used contractor with reinforcement shall be avoided as far as practicable.

9. CONCRETING UNDER WATER

Wherever it is necessary to deposit concrete under water, the machine equipment materials and proportion of the mix to be used shall be got approved by Engineer-in-Charge before any work is started. Such concrete shall not be considered as controlled concrete.

Concrete shall not be placed in water having a temperature below 4.5° C. The temperature of the concrete, when deposited shall be not less than 16° C not more than 38° C.

Concrete shall contain 10% cement than that required for the same mix placed in the dry. The materials shall be so proportioned as to produce concrete having a slump of not less than 100mm and not more than 180mm. The slump shall be tested as per IS 516.

Concrete shall be deposited continuously until it has been brought to the required height. While depositing the top surface shall always be kept as nearly level as possible.

When depositing concrete in very hot weather precaution shall be taken so that the temperature of wet concrete do not exceed 30° C while placing. This shall be achieved by stocking aggregate under the shade and keeping them moist, using cooled water, reducing the time between mixing and placing to the minimum, cooling during work by sprinkling water, starting concreting before concrete dries out and restricting concreting as far as possible to morning and evening.

10. FINISHING: Immediately after the removal of forms, all excess bars or bolts assigned through the reinforced cement concrete member used for shuttering or any other purpose shall be cut inside the reinforced cement concrete and to a depth at least 25 mm below the surface of the concrete and the resulting holes be closed by the cement mortar. All fans caused by forms joints, all activities produced by the removal of formwork and all other holes and depressions. Honey comb spots, broken edges or corners and other defects, shall be thoroughly cleaned, saturated with water and carefully pointed and rendered that is being finished through filling of all voids. Surface which has been pointed shall be kept moist for a period of twenty four hours.

11. All construction and expansion joints in the completed work shall be carefully filled and free from any mortar and concrete. Expansion joint fillers shall be left exposed for its full length with clear and true edges.

12. If rock pockets and honey comb spots in the opinion of the Engineer-in-Charge are to such an extent that they may affect the strength of the structure materials or endanger the life of the steel reinforcement he may declare that concrete is defective and order for the removal and replacement of the portions of the structure affected.

13. CONSTRUCTION JOINTS: Concreting shall be carried out continuously upto the construction joints, the position and details of which shall be shown in approved drawing or as directed by the Engineer-in-Charge such joints shall however be kept to the minimum.

For vertical constructions joints, a stopping board shall be fixed previously at the predetermined position and shall be properly stayed for sufficient lateral rigidity to prevent displacement of building when concrete is compacted. The board shall not be removed before the expiry of the specified period for removal of vertical forms. Concrete after the initial setting time shall be kept continuously wet for a period of not

less than 14 days. Foundation concrete may be started after 48 hours of its laying but curing of concrete shall be continued for a minimum period 14 days.

Before resuming work at any construction joining where concrete has not yet fully hardened, all shall be removed through care being taken to avoid dislodgement of coarse aggregate as per S.S.No.1978 of APSS duly obtaining prior permission from the Police Department.

14. The camp and butting accommodation water supply and sanitary arrangements shall have to be provided as per schedule 'D' part – I and shall generally conform to the requirements and satisfaction of the Medical and Sanitary Authorities of the project and the entire cost thereof should be borne by the contractor himself and no extra payment will be made by the MUNICIPAL CORPORATION. Facilities arranged for by Kukatpally MUNICIPAL CORPORATION may be utilized by the workmen labourers to the extent possible.

26. Cement should not be stocked at low places where there is likelihood of water coming into contact with bags.

INFILTRATION WELL AND INFILTRATION GALLERY CONNECTING MAIN

10.1 Scope of Work:

This work includes construction of Infiltration well and laying of Infiltration Gallery.

10.2 Well Sinking:

GENERAL

Infiltration wells sunk for Water Supply consist of Staining in VRCC M 20 with reinforcement, as indicated in the relevant drawings provided with a curb at bottom which is sunk to the required depth by dredging. The well then provided with a plug at the bottom consisting VRCC Mix M 20.

10.3 Excavation:

10.3.1 If the river bed is dry, open excavation shall be carried to a depth just above the water level or to such depth as may be specified before the curb is laid. Open excavations shall conform to the following:

10.3.1.1 In firm soil, the sides of the excavation shall be kept vertical upto a depth of 2 meters and for greater depth, the excavation shall be widened by allowing steps of 500 mm at every 2 Meters depth. Where the soil is soft, loose or slushy, the width and depth of the steps shall be suitably altered or the sides sloped or shored up, as directed by the Engineer-in-Charge. It shall be the responsibility of the Contractor to take complete instructions in writing from the Engineer-in-Charge regarding the stepping, sloping or shoring to be done for excavations deeper than 2 meters.

10.3.1.2 The Excavated materials shall not be placed within 1 Meter of the edge of the excavation or half the depth of the excavation whichever is more or a greatest distance as prescribed by the Engineer-in-Charge. All the materials excavated shall be the property of the Government Materials suitable and useful for backfilling or other use shall be stacked separately as directed by the Engineer-in-Charge.

10.3.2 When it is necessary to sink wells in standing water, unless otherwise specified by the Engineer-in-Charge an island of sand or earth shall be formed before laying the curb. The island shall extend atleast 3 meters beyond the outer periphery of the wells to be sunk. The material forming the island shall be free from all stones and other hard materials which are liable to impede the sinking of the well and shall be brought up atleast 500mm above the water level. The sides of the island shall be adequately protected from erosion.

10.4 Curb:

The curb shall be made of reinforced concrete with a cutting edge provided where necessary with a Steel shoe. The curb shall be laid truly in position and level. Cement

concrete for the curb shall be of grade M 20 Conforming to the requirements specified in Division 6. The concreting of the curb shall be done in one continuous operation.

10.5 Steining:

10.5.1 The Steining shall be constructed with VRCC M 20.

10.5.2 The Steining shall be built in one straight line from bottom to top. In no case shall it be built in plumb at intermediate stage when the well is tilted.

10.5.3 The Steining shall be built in true shape both on the inner and outer edges. The height of steining built at any stage shall be such that the well does not lose stability.

10.5.4 Holding down rods of mild steel conforming to I.S. 432 (Part-I) 1982 shall be provided as indicated in the relevant drawings.

10.7 Bottom Plug:

The well shall be plugged with VRCC M 20 concrete with reinforcement.

10.12 Roof Slab:

The well shall be covered, on completion of work, with a slab in R.C.C. M 20 grade conforming to the specifications set out in Division 6 as indicated in the drawings.

10.13 Measurement:

All linear measurements shall be in meters, correct to 0.01 of a metre. Volume shall be worked out to the nearest 0.01 cum.

10.14 Rate:

10.14.1 The rate for each work shall be for a unit of 10 cum, and shall include the following and no extra payment shall be made.

- a. Site clearance such as clearing off shrubs brushwood, under growth and small trees, not exceeding 300 mm in fifth, measured at 1 metre above ground.
- b. Marking out.
- c. All leads and lifts.
- d. Forming temporary steps at sides of deep trenches.
- e. Fencing, protection and other safety measure.
- f. All dewatering required during excavation.
- g. All shoring, sheeting, planking and strutting etc.

10.14.2. The unit rate for sinking shall be per metre depth of sinking including all operations specified in paragraph 11.6.

10.14.3. The rate for all structural steel work shall include the cost of materials and labour involved. The unit rate shall be per Kg. as specified in the Schedule Bill of quantities.

10.14.4 The Unit rate for all R.C.C. work shall include all operations as indicated in paragraph 6.2.18.

10.14.5. The Unit rate for plain concrete work shall be per cubic metre. The rate shall include all necessary form work and the cost of the materials, mixing, conveying, placing, compacting, curing, tools and all appliances required for laying the concrete in position. It shall also include the cost of bailing out water and pumping for keeping the excavation free of water unless otherwise specified.

- 10.14.6. The Unit rate for masonry work shall be per one cubic metre of finished work inclusive of cost of manufacture of sand cement blocks, smooth rubbing of joints, stacking, scaffolding, construction, pointing (with same mortar) and curing etc., complete in all respects. The rate shall include charges for leads and lifts, besides conveyance charges.

Wherever required the samples of the materials shall be produced to the Executive Engineer for approval and for keeping at the works spot.

SCHEDULE – E

5. The tenderer shall not be at liberty to remove from the site the departmental materials supplied to him.
6. Time shall be considered essence of contract. If the contractor fails to maintain the date of progress as given in para 13 of tender notice action will be taken to levy penalty as per clause 60 of preliminary specification of APSS.
7. Cement concrete should be machine mixed and machine vibrated.
8. The proportions of cement concrete specified in the schedule are nominal and are indicative of approximate proportion of cement fine aggregate and coarse aggregate which may have to be altered suitably at site to obtain the desired strength and workability. However, the quantity of cement shall not be less than that as specified below.

Normal Mix.	Cement in bags (10 kgs. Per one Cubic meter of cement concrete
(1:2:4)	6.60 bags of 50 kgs.
(1:4:8)	3.31 bags of 50 kgs.
(1:1.5:3)	8.83 bags of 50 kgs.

List of specification for various items of work supplementing those described in schedule of works by standard specification numbers.

1	Plain cement concrete and reinforced cement concrete	IS. 456 – 1978 for plain and reinforced concrete for construction
2	Steel doors, Windows and Ventilators	IS 1023 and 1038 – 1957
3	Flush door shutters.	IS 1081 – 1960
4	Measurement of building work	IS 2002-1962
5	In situ terrace floor finish code of practice.	IS 2114-1962
6	Preformed filters for expansion joints in concrete	IS 1838-1961
7	Scaling compounds for joints in concrete	IS 1838 – 1961
8	Sampling and analysis of concrete	IS 199- 1959
9	a) mild steel for concrete b) Tar steel.	IS 432-1966/126-1969 Part-1 IS 1786-1966
10	Methods of sampling and analysis of concrete	IS 516-1959
11	Portland cement	IS 266-1967
12	Hydraulime	IS 1635-1963
13	Bending and fixing of bars for concrete reinforcement	IS 2502-1963
14	Siprex slabs	IS 6073-1971

15	Methods of tests for Auto clayed cellular	IS 6441-1972 (I-IX Parts)
16	Internal Electrical wiring	IS 694-1964
17	Code of practice for building drainage	IS1742-1972
18	Code of practice for water supply in building	IS 2065-1972
19	Building line	IS 712-1964
20	Basic requirements for water supply	IS 1172-1972
21	Code of practice for white washing and colour washing	IS 6270 – 1971
22	Code of practice for construction of auto claused cellular concrete block masonry	IS 6041-1971
23	Precast douly curved wafire sheet roofing	IS 6332-1971
24	RCC NP3 Class Pipes	IS 458-1988
25	SWG Pipes supply and fittings	IS 651-1992 & 1301/92
26	Laying, Jointing and testing of RCC pipe line for hydraulic field test pressure	IS 783-1959
27	SWG Pipes supply and fittings laying jointing and testing for SWG Pipes.	IS 1918/92

DRAWINGS

1.0 DRAWINGS:

- 1.1 The plans enclosed with the tender are liable to be altered during execution of work as per necessity of site conditions. The premium quoted by the contractor for various items shall hold good for execution of work even with altered plans.
- 1.2 One set of drawings, on the basis of which actual execution of the work is to proceed shall be furnished free of cost to the contractor by the Superintending Engineer / Executive Engineer progressively according to the work program submitted by the contractor and accepted by the Superintending Engineer / Executive Engineer. Drawings for any particular activity shall be issued to the contractor at least 30 days in advance of the scheduled date of the start of the activity. However, no extra claims by the contractor toward any delay in issue of drawing or issue of any revision / change to the drawings issued earlier shall be admissible. The Superintending Engineer shall intimate the contractor 7 days in advance regarding any delay to issue of drawings, for any particular stage of works. If work gets effected due to delay to issue of drawings, for any particular stage of work the contractor shall be granted extension of time in terms of condition 14.7 of tender notice.
- 1.3 Signed drawings above shall not be deemed to be an order for work unless they are entered in the agreement or schedule of drawings under proper alterations of the contractor and Executive Engineer or unless they have been sent to the contractor by the Executive Engineer with a covering letter confirming that the drawing is in and authority for work in contract.

2.0 DISCREPANCIES:

- 2.1 In case of discrepancies between documents the following order of procedure shall apply:-
 - 2.1.1 Between the written description of written dimensions in the drawings and the corresponding one in the specifications, the latter shall apply.
 - 2.1.2 Figured dimensions shall supersede scaled dimensions. The drawings on a larger scale shall take precedence over those on a smaller scale.
 - 2.1.3 Drawings issued as construction drawings from time to time shall supersede tender drawings and also the correspondence drawings previously issued.

Note: The contractor should not execute any component of work without obtaining the working drawings. Any work done without drawings shall be at the contractor's responsibility only. Acceptance for such work will be at the discretion of the Executive Engineer.

3.0 SECRECY CLAUSE:

The drawings and specifications made available to the tenderer shall exclusively be used on the work and they are retained from passing on each plan to any unauthorised hand either in parts or in full under the provisions of Section-3 and 5 of the official secrets Act 1923. Any violation in this regard will entail suitable action under appropriate clause or official secret Act 1923.

BILL OF QUANTITIES

Name of work :- Door to Door Propagation and awareness of Segregation of wet and dry waste by Swachh Dhoot under Capacity Building Skill Development and Knowledge Management in Nizampet Municipal Corporation under SBM 2.0 Funds 2024-25

BILL OF QUANTITIES

PREAMBLE

1. The Bill of Quantities shall be read in conjunction with the instructions to Tenderers, General and Special conditions of Contract Technical Specifications and Drawings.
2. The quantities given in the Bill of Quantities are estimated and provisional and are given to provide common basis for tendering. *The quantities here given are those upon which the lumpsum tender cost of the work is based but they are subject to alterations, omissions, deductions or additions as provided for in the conditions of this contract and do not necessarily show the actual quantities of work to be done.* The basis of payment will be actual quantities of work ordered and carried out as measured by the Contractor and verified by the Engineer and valued at the estimate rate plus or minus tender percentage quoted in the Bill of Quantities where applicable, and otherwise at such rates and prices as the Engineer-in-Charge may fix within the terms of Contract.
3. The estimate rates in the Bill of Quantities shall, except in so-far as it is otherwise provided under the Contract include cost of all constructional material, labour, machinery, transportation, erection, maintenance, profit, taxes and duties together with all general risks, liabilities and obligations set out or implied in the Contract.
4. The plans enclosed with the tender are liable to be altered during execution of work as per necessity of site conditions. The Tender percentage quoted by the tenderer shall hold good for execution of work even with altered plans.
5. The whole cost of complying with the provisions of the Contract shall be included in the estimated rates for items provided in the Bill of Quantities and where no items are provided in the Bill of Quantities, their cost shall be deemed to be distributed among the estimate rates entered for the related items of work.
6. General directions and descriptions of work and materials are not necessarily repeated nor summarised in the Bill of Quantities. References to the relevant sections of the Contract documentation shall be made before entering estimate rate against each item in the Bill of Quantities.
7. The method of measurements of completed work for payment shall be in accordance with the relevant B.I.S. Codes & A. P. S. Specifications.
8. All items of work are to be executed as per the drawings / specifications supplied with the contract documents.

If there is any contradiction between the drawings and the text of the specifications, the later shall prevail.

9. The Tenderer should inspect and select the quarries of his choice before he quotes the tender percentage in the Schedule of Bill of Quantities and satisfy himself about the availability of required quantum of materials.
10. Diversion drains should be excavated before completion of the embankments and the useful soils should be used in the nearby embankments.
11. The actual mix proportion by weight to be adopted during execution will be got designed in the laboratories to suit the grade of concrete and mortar to be used. It will be the responsibility of the contractor to manufacture concrete and mortar of required strength.
12. The quantum of measurement for all items of earthwork involving conveyance manually or by machinery shall be as assessed by level measurement. The measurements for the embankment will be for the consolidated banks only.
13. Wherever bailing out of water is involved either for excavation or for foundations or for constructions, the percentage quoted shall take into account the dewatering charges necessary. No separate payment will be made for dewatering.
14. Wherever embankment work is involved, useful soils approved by the Engineer-in-Charge from the cutting reaches and diversion drains shall be taken and used for forming nearby embankments soils used for constructions will be at free of cost.
15. The quoted tender percentage shall also include the work of any kind necessary for the due and satisfactory construction, completion and maintenance of the works according to the drawings and these specifications and further drawings and orders that may be issued by the Engineer-in-Charge from time to time. The quoted tender percentage shall include compliance by the Contractor with all the general conditions of contract, whether specifically mentioned or not in the various clauses of these specifications, all materials, machinery, plant, equipment, tools, fuel, water, strutting, timbering, transport, offices, stores, workshop staff, labour and the provision of proper and sufficient protective works, diversions, temporary fencing and lighting. It shall also include safety of workers, first aid equipments suitable accommodation for the staff and workmen, with adequate sanitary arrangements, the effecting and maintenance of all insurances, the payment of all wages, salaries, fees, royalties / Taxes, duties or other charges arising out of the execution of works and the regular clearance of rubbish, reinstatement and clearing-up of the site as may be required on completion of works safety of the public and protection of the works and adjoining land. The work of Building in quality control / assurance shall be deemed to be covered in the quoted percentage.

16. The Contractor shall ensure that, the quoted tender percentage shall cover all stages of work such as setting out, selection of materials, selection of construction methods, selection of equipment and plant, deployment of personnel and supervisory staff, quality control testing etc. The work quality assurance shall be deemed to be covered in the tender percentage.
17.
 - a) The special attention of the tenderer is drawn to the conditions in the tender notices wherein reference has been made to the TELANGANA Standard Specifications [APSS] and the Standard preliminary specifications containing therein. These preliminary specifications shall apply to the agreement to be entered into between the contractor and the Government of TELANGANA and shall form an in-separable condition of the contract along with the estimate. All these documents taken together shall be deemed to form one contract and shall be complimentary to another.
 - b) The tenderer shall examine, closely the A.P.S.S. / MOST and also the standard preliminary specifications contained therein and sign the Superintending Engineer's office copy of the APSS / MOST and its addenda volume in token of such study before submitting his overall tender percentage which shall be for finished work in-situ. He shall also carefully study the drawings and additional specifications and all the documents, which form part of the agreement to be entered into by the successful tenderer. The APSS / MOST and other documents connected with contract such as estimate plans, specifications, can be seen on all working days in the office of the Superintending Engineer [As specified in the NIT].
18. The tenderers attention is directed to requirements for materials under the clause 'materials and workmanship' in the preliminary specifications of APSS. Materials conforming to the Bureau of Indian Standards specifications, APSS etc., shall be used on the work and the tenderers shall quote his overall tender percentage accordingly.
19. The tenderer has to do his own testing of materials and satisfy himself that they conform to the specifications of respective I.S.I. Codes before tendering.
20. The contractor shall himself procure the required construction materials of approved quality including the earth for formation of embankment and water from quarries / sources of his choice. All such quarries / sources of materials required for the work shall be got approved by the Engineer-in-Charge in writing well before their use of the work.
21. The contractor shall himself procure the steel, cement, Bitumen, Blasting materials, sand, metal, soils, etc., and such other materials required for the work well in advance. The contractor has to bear the cost of materials for conveyance. The department will not take any responsibility for fluctuations in market in cost of the materials, transportation and for loss of materials etc.

22. Inspection of site and quarries by the tenderer: Every tenderer is expected before quoting his overall tender percentage, to inspect the site of proposed work. He should also inspect the quarries and satisfy himself about the quality, and availability of materials. The best class of materials to be obtained from quarries, or other sources shall be used on the work. In every case the materials must comply with the relevant standard specifications. Samples of materials as called for in the standard specifications or in this tender notice, or as required by the Executive Engineer, in any case, shall be submitted for the Executive Engineer's approval before the supply to site of work is begun.
23. The tenderer's particular attention is drawn to the sections and clauses in the A.P. standard specification dealing with
- a) Test, inspection and rejection of defective materials and work.
 - b) Carriage
 - c) Construction plant
 - d) Water and lighting
 - e) Cleaning up during the progress and for delivery.
 - f) Accidents
 - g) Delays
 - h) Particulars of payments.

The contractor should closely peruse all the specification clauses, which govern the overall tender percentage he is tendering.

24. The defect liability period of contract in terms of GO Ms.No.94 I & CAD Department, dt.1-7-2003 is twenty four months for both original works and maintenance works.
25. The estimate rates for items shown in the Schedule "A" include all construction materials. No escalation in rates will be paid unless specified in the tender document. The tenderer has to quote an overall tender percentage considering all the aspects of the tender to complete the finished item of work as per the APSS / MOST / B.I.S. specifications, the special specifications appended, Drawings etc.
26. If there is any contradiction between APSS / MOST and B.I.S. specifications, listed and detailed technical specifications, the latter shall prevail.
27. In case of a job for which specifications are not available with the Schedule or in APSS / MOST or B.I.S. code and are required to be prescribed, such work shall be carried out in accordance with the written instructions of the Engineer-in-charge.
28. The contractor should use the excavated useful soils and stone for construction purpose. Soils used for construction either for homogeneous section in hearting or in casing zone based on the suitability will be at free of cost and the cost of stone used for construction purpose will be recovered from the contractors bill.

The contractor should quote his tender percentage keeping in view of the above aspects.

29. Additions and alternations by the Tenderer in the Schedule of quantities will disqualify the tender.
30. In the case of discrepancies between the written description of the item in the Schedule "A" and the detailed description in the specification of the same item, the latter shall be adopted.
31. The Unit rates noted below are those governing payment of extras or deductions for omissions according to the conditions or the contract as set-forth in the preliminary specifications of the A.P. standard specifications and other conditions of specification of this contract.
32. It is to be expressly understood that the measured work is to be taken according to the actual quantities when in place and finished according to the drawings or as may be ordered from time to time by the Executive Engineer and the cost calculated by measurement or weight at their respective rates without any additional charge for any necessary or contingent works connected works connected herewith. The Percentage Excess or less on ECV quoted are for works in situ and complete in every respect.
33. For all items of work in excess of the quantities indicated the rates payable for such excess quantities will be tendered rates i.e., estimate rates plus or minus tender percentage.
34. For all items of work, intermediate payment will be made provisionally as per relevant clause. Full-accepted agreement rates will be paid only after all the items of works are completed.
35. The contractor is bound to execute all supplemental works that are found essential incidental and inevitable during execution of main work.
36. The payment of rates for supplement items of work will be regulated as under.

Supplemental items directly deductible from similar items in the original agreement.

The rates shall be derived by adding to or subtracting from the agreement rate of such similar item the cost of the difference in the quantity of materials labour between the new items and similar items in the agreement worked out with reference to the schedule of rates adopted in the sanctioned estimate with which the tenders are compared.

- a) Similar items but the rates of which cannot be directly deducted from the original agreement.
- b) Purely new items which do not correspond to any item in the agreement.

The rate of all such items shall be estimated rates plus or minus overall tender percentage.

37. ENTRUSTMENT OF ADDITIONAL ITEMS.

- a) Where ever additional items not contingent on the main work and outside the scope of original agreement are to be entrusted to the original contractor dispensing with tenders and if the value of such items exceeds the limits upto which the officer is empowered to entrust works initially to contractor without calling for tenders approval of next higher authority shall be obtained. Entrustment of all such items on nomination shall be rates not exceeding the estimate rates.
- b) Entrustment of supplement items contingent on the main work will be authorised by the officers upto the monetary limits upto which they themselves are competent to accept items in the original agreement so long as the total amounts upto which they are competent to accept in an original agreement rates for such items shall be worked in accordance with the procedure prescribed in GO Ms.No.1493 PWD, dated:25.10.1971 and as amended in Govt. Memo number 544 cod 72-22 dt:6.7.1973.
- c) Entrustment of either the additional supplemental items shall be further subject to the provisions under para 176(b) of APWD Code Viz., the items shall not be ordered by an officer on his own responsibility if the revised estimate or deviation statement providing for the same requires the sanction of higher authority.

Note: It may be noted that the term estimate rate used above means the rate in the sanctioned estimate with which the tender's compared or if no such rate is available in the estimate the rate derived will be with reference to the schedule of rates adopted in the sanctioned estimate with which tenders are compared.

BILL OF QUANTITIES[Part-I]

Name of work: Door to Door Propagation and awareness of Segregation of wet and dry waste by Swachh Dhoot under Capacity Building Skill Development and Knowledge Management in Nizampet Municipal Corporation under SBM 2.0 Funds 2024-25

Name of the work: Door to Door Propagation and awareness of Segregation of wet and dry waste by Swachh Dhoot under Capacity Building Skill Development and Knowledge Management in Nizampet Municipal Corporation under SBM 2.0 Funds 2024-25

Estimate Amount :48.00lakhs

S.	Description of work	No	L	B	D	Qty	Rate	Pe	Amount
1	Engaging of Tractor with Trolley for loading and unloading of unwanted waste and debris with a lead of 10km including fuel & oil charges, Driver charges and complete maintenance for complete item of work.								
		15	4.00	30		180			

Municipal Asst. Engineer

Municipal Commissioner.

		14	1	2		28			
						182	2200.00	D	4021600.00
	Sub Total								4021600.00

Municipal Asst. Engineer

Municipal Commissioner.

I am willing to do the Work

a) At the estimated value of the work and willing to take the payment on finish work at the rate mention above i.e. in column No.5.

b) At the percentage _____ (to be filled) in excess/less to the estimated amount or rates incase individual rate of the items.

Tenderer shall indicate willingness to do the work at		
	In figures (Rs)	In words
At the estimated value		
Percentage in excess		
Percentage in less		
The tenderer shall opt his willingness only for one item i.e. (a) or (b) above and the unopted one shall be scored off.		

BILL OF QUANTITIES

Part-II

Details of Maximum amount reimbursable to the Contractor.

- | | | | |
|----|---|---|----|
| 1) | Towards Insurance premium | : | -- |
| 2) | Towards Technical agent charges | : | -- |
| | One graduate Engineer and One Diploma Engineer. | | |
| 3) | Bankers Charges | : | -- |
| 4) | V A T @ 2.8% | : | -- |

The tenderers are eligible for reimbursement of amounts towards insurance, and engaging technical personnel not exceeding the amounts indicated above, subject to production of insurance policies, copies of appointment order & payment voucher for technical personnel etc., failing to comply with the above, reimbursement shall not be allowed but suitable penalty shall be imposed for not engaging technical personnel and the Engineer-in-Charge shall take insurance

policy at the cost of Contractor duly deducting the premium from the Contractor bills. Contractor has to take the insurance policy in favour of the Department.

FORMATS OF SECURITIES

FORM OF SOLVENCY CERTIFICATES BY MANDAL REVENUE OFFICER

ANNEXURE – I (A).

I, _____ Mandal Revenue Officer, of _____ do hereby certify, on being satisfied by the Examination of Revenue and other records and local enquiries that _____ [here the name and address of the contractor should be mentioned] is solvent to the extent of Rs. _____ [Rupees _____].

Date :

Place:

**MANDAL REVENUE OFFICER
SEAL OF THE OFFICE**

ANNEXURE – I (B).

FORM OF SOLVENCY CERTIFICATE BY BANKS

I, _____ Managing Director / Manager / General Manager / Agent of _____ Bank Limited do hereby certify that a _____ [here the Names and addresses of the contractor] to be solvent to the extent of Rs. _____ [Rupees _____] as disclosed by the information and record which are available with the aforesaid bank.

For the _____ Bank

Date:

Place:

**Signature of Bank Manager
[Authorised to Sign]**

NOTICE INVITING TENDER

1.	Department.		Municipal Administration & Urban Development
2.	Unit / Circle / Division	:	NIZAMPETMUNICIPAL CORPORATION
3.	Tender Number	:	E1/48/10/2024-25
4.	Tender Subject	:	Door to Door Propagation and awareness of Segregation of wet and dry waste by Swachh Dhoot under Capacity Building Skill Development and Knowledge Management in Nizampet Municipal Corporation under SBM 2.0 Funds 2024-25
5.	Estimated contract value	:	Rs.: 343420.00
6.	Period of Contract	:	03 Months
7.	Form of Contract	:	Lump sum
8.	Tender Type	:	Open
9.	Tender Category	:	Works
10.	EMD/ Bid Security	:	1% of ECV
11.	EMD/ Bid Security payable to	:	Online by utilizing the Payment Gateway Service on E-procurement platform
12.	Tender Fee	:	0
13.	Tender fee payable to	:	0
14.	Schedule sale opening Date	:	As per published NIT
15.	Schedule Sale closing Date	:	As per published NIT
16.	Bid submission closing Date	:	As per published NIT
17.	Pre-qualification/ Technical bid Opening Date Qualification and Eligibility stage)	:	As per published NIT
18.	Technical Specification Bid Opening Date (Technical Bid stage)	:	--
19.	Price bid opening Date (Financial Bid Stage)	:	As per published NIT
20.	Place of Tender opening	:	O/o. Commissioner, NIZAMPETMUNICIPAL CORPORATION
21.	Officer Inviting bids	:	Commissioner, NIZAMPETMUNICIPAL CORPORATION
22.	Address	:	O/o. Commissioner, NIZAMPETMUNICIPAL CORPORATION Medchal - Malkajgiri District (T.S)
23.	Contact Details	:	9848920301
24.	Bid validity	:	Bids are valid for period of 90 days.

25. **Eligibility Criterion :** Qualification Requirements:

1. The Civil Contractors having appropriate class of valid Registration with Government of Telangana are eligible.

The registration shall be as per following GOs

- i. G.O.Ms.No. 132,T(R&B) Dept., Dt. 11-08-1998
- ii. G.O.Ms.No. 8, T (R&B) Dept., Dt. 08-01-2003.
- iii. G.O.Ms.No. 94, I & CAD (PW_COD) Dept Dt. 1-7-2003.
- iv. G.O.Ms.No. 171, I& CAD (PW-C&D) Dept., Dt. 6-2-2004.
- v. G.O.Ms.No. 142,I & CAD (PW-Reforms) Dept., Dt: 20-12-04.
- vi. G.O.Ms.No.130, I & CAD (PW-Reforms) Dept., Dt.22-05-2007
- vii. G.O.Ms.No.174,I & CAD (PW-Reforms)Dept., Dt.01-09-2008.
- viii. G.O.Ms.No.66,I & CAD (PW-Reforms)Dept., Dt.20-04-2015.
- ix. G.O.Ms.No.337, MA&UD(C) Dept. Dt.12-06-2017.

2. EMD Transaction Details
3. Transaction fee details
4. Copy of GST Registration
5. Latest IT Returns certificate and Pan Card
6. Self-certification of the Tenderer concluding no Blacklist record or any work obligations for previous works.

26. General Terms & Conditions:

1. The details of Tender conditions and terms can be down loaded from the electronic procurement platform of Government of Telangana i.e. www.tender.telangana.gov.in
2. Contractors would be required to register on the e-procurement Market Place www.tender.telangana.gov.in and submit their bids online. The Department will not accept any bid submitted in the paper form.
3. The successful bidder shall invariably furnish the latest VAT/GST clearance certificate proof of online payment towards EMD and balance EMD **1.5%** and certificates/ documents of the uploaded scanned copies to the tender inviting authority before entering into the agreement either personally or through courier or post and the receipt of the same within the stipulated date shall be the responsibility of the successful bidder. The Department will not take any responsibility for any delay in receipt/non-receipt of original proof of online payment towards EMD, certificates/documents, from the successful bidder before the stipulated time.
4. The tenderer to be blacklisted and the EMD forfeited if he is found to have misled or furnished false information in the forms/ Statements/ certificates submitted in proof of qualification requirements or record of performance such as abandoning of work not properly completed in earlier contracts, inordinate delays in completion of the works, litigation history and/ or financial failures.
5. Even while execution of the work, if found that the contractor had produced false/ fake certificates of experience he will be black listed and the contract will be terminated.
6. Transaction Fee: The participating bidders shall pay an amount of Rs.0.04% of ECV (estimated contract value) with a cap of Rs.10,000 (Rupees Ten Thousand) for all works with ECV upto Rs. 50.00 Crores. DD drawn in favour of Managing Director, TSTS, Hyderabad and the same shall submit to the Municipal Commissioner, NIZAMPETMUNICIPAL CORPORATION before concluding agreement.

7. Any further information can be obtained from the Office of the Municipal Commissioner, NIZAMPETMUNICIPAL CORPORATION

Note: 1) The date stipulated above is firm and under no circumstances they will be relaxed unless otherwise extended by an official notification or happen to be Public Holidays.
2) Any other condition regarding receipt of tenders in conventional method appearing in the tender documents may please be treated as not applicable.
3) The tender inviting authority reserves the right to accept or reject any tender or all tenders and to cancel the tendering process, at any time prior to the award of contract, without thereby incurring any liabilities to the affected tenderer or tenderers or any obligation to inform the affected tenderer or tenderers of the reasons for such action.

**Commissioner
NIZAMPETMUNICIPAL
CORPORATION**

SUBMISSION OF BIDS

The bidder shall submit his response through bid submission to the tender on e-Procurement platform at www.e-Procurement.gov.in by following the procedure given below. The bidder would be required to register on the e-procurement market place www.e-Procurement.gov.in or <https://tender.e-Procurement.gov.in> and submit their bids online. No offline bids shall be entertained by the Tender Inviting Authority.

The bidders shall submit their eligibility and qualification documents, Technical bid, Financial bid etc., in the standard formats prescribed in the Tender documents, displayed in e-Procurement web site. The bidders shall upload the scanned copies of all the relevant certificates, documents etc., in support of their eligibility criteria/technical bids in the e-Procurement web site. The bidder shall sign on the statements, documents, certificates, uploaded by him, owning responsibility for their correctness/ authenticity.

1. Registration with e-Procurement platform:

For registration and online bid submission bidders may contact HELP DESK of M/s C1 India Pvt., Ltd., www.e-Procurement.gov.in or <https://tender.e-Procurement.gov.in>.

2. Digital Certificate authentication:

The bidder shall authenticate the bid with his Digital Certificate for submitting the bid electronically on e-Procurement platform and the bids not authenticated by digital certificate of the bidder will not be accepted on the e-Procurement platform.

All the bidders need to obtain Digital Certificates from APTS:
For obtaining Digital Signature Certificate, Please Contact:

TELANGANA Technology Services Limited
BRKR Bhavan, B-Block
Tank bund Road
Hyderabad-500022
Phone: +91-40-23220305
Fax: +91-40-23228057

3. Submission of Hard copies:

After submission of bid online, the bidders are requested to submit the originals of DD/BG towards EMD, DDs towards transaction fee, bid processing fee to the Tender Inviting Authority before opening of the price bid and other uploaded documents at the time of concluding agreement. The bidder shall invariably furnish the original DD/BG to the tender inviting authority before opening price bid either personally or through courier or by post and the receipt of the same within the stipulated time shall be the responsibility of bidder. The department shall not take any responsibility for any delay or non-receipt. If any of the documents furnished by the bidder is found to be false/fabricated/bogus, the bidder is liable for black listing, forfeiture of the EMD, cancellation of work and criminal prosecution.

The bidder is requested to get a confirmed acknowledgement from the Tender Inviting Authority as a proof of Hardcopies submission to avoid any discrepancy. The bidder has to attach the required documents after uploading the same as required by Tender Inviting Authority in its tender conditions.

4. Deactivation of Bidders:

The bidders found defaulting in submission of hard copies of original DD/BG for EMD /Transaction fee to the Tender Inviting Authority on or before the tender stipulated time for Price Bid Opening and other uploaded documents before concluding the agreement will be suspended / disqualified from participating in tenders on e-Procurement platform for a period of 12 months from date of bid submission as per G.O Ms No 245 I&CAD Dept. dated 30-12-2005 and GO Ms No 155 I&CAD Dept. dated 23-08-2006 besides forfeiture of EMD. Other conditions as per tender document are applicable.

5. Payment Of Transaction Fee and EMD:

It is mandatory for all the participating bidders to pay electronically the Transaction fee to M/s C1 India Pvt. Ltd, through "Payment Gateway Service on E-Procurement platform ". The Electronic Payment Gateway accepts all Master and Visa cards issued by any bank and Direct Debit facility / Net Banking of ICICI Bank, HDFC to facilitate the transaction. This is in compliance as per G.O Ms No 13 IT & C Dept, dated 5-7-2006. A service tax of 12.24 % + Bank Charges for Credit Card Transaction of 1.85% on the transaction Amount payable to C1 India Pvt, Ltd. Shall be applicable.

6. Tender Document:

The bidder is requested to download the tender document and read all the terms and conditions mentioned in the tender Document and seek clarification if in doubt from the Tender Inviting Authority. Any offline bid submission clause in the tender document shall not be considered.

The bidder has to keep track of any changes by viewing the addendum / Corrigendum's issued by the Tender Inviting Authority on time-to- time basis in the E-Procurement platform. The Department calling for tenders shall not be responsible for any claims/problems arising out of this.

7. Bid Submission Acknowledgement:

The user should complete all the processes and steps required for bid submission. The successful bid submission can be ascertained once acknowledgement is given by the system through bid submission number after completing all the process and steps. GOAP and C1 India is not responsible for incomplete bid submission by users. Users may also note that the incomplete bids will not be saved by the system and are not available for the Tender Inviting Authority for processing.

The following qualification information to fulfill the above eligibility criteria shall be uploaded

- a) Demand Draft towards EMD.
- b) Copy of Contractors registration certificate
- c) Copy of Sales Tax Registration & clearance certificate.

- d) The tenderer should fill in the particulars in the Statements I to VII as detailed below:-
- i) Statement V : The tenderer should furnish the information required below, regarding the availability of the equipment, required for construction / quality control..
 - ii) Statement VI : Qualification and experience of Key Personnel proposed to be deployed for execution of the Contract..

MODEL STATEMENTS

STATEMENT - I

Availability of Critical Equipment

Sl. No.	Details of Equipment	Number required	Number		
			Owned	Lease	To be procured
1	2	3	4	5	6

A declaration regarding the equipment owned shall be produced by the Tenderer on a non-judicial stamp paper of Rs..... as below;

DECLARATION

"I do hereby solemnly affirm and declare that I /we own the following equipment for using on the subject work and also declare that I / We will abide by any action such as disqualification or determination of Contract or blacklisting or any action deemed fit, if the department detects at any stage that I/we do not possess the equipment listed below.

Sl. No.	Details of each Equipment	Year of purchase	Regn. Number	Capacity	Any other data.	Is it in working condition
1	2	3	4	5	6	7

STATEMENT – II.

Availability of Key Personnel

Sl. No	Name	Designation	Qualification	Total Experience	Working with the Tenderer since.
1	2	3	4	5	6

STATEMENT - III

S. No	Case No. / Year	Court where filed.	Subject Matter / Prayer in the case.	Respondents i.e., SE / CE	Present Stage.
1	2	3	4	5	6

STATEMENT – IV

LIST OF CERTIFICATES ENCLOSED IN SUPPORT OF THE DETAILS FILLED IN THE STATEMENTS I TO VII:-

CODE NO	DESCRIPTION OF WORK / CERTIFICATE.(Describe the Certificate in detail for identification)	CERTIFICATE ISSUED BY	CERTIFICATE ISSUED DATE.

CHECKSLIP

S.No	Description	Submitted	Page No.	
			From	To
1	2	3	4	
1	Demand Draft	Yes / No		
2	Contractors Registration certificate.	Yes / No		

Municipal Asst. Engineer

Municipal Commissioner.

3	Latest Income Tax clearance certificate.	Yes / No		
4	Commercial Tax Registration and clearance certificate.	Yes / No		
6	Statement-I.	Yes / No		
7	Statement-II	Yes / No		
8	Statement – III.	Yes / No		
9	Statement-IV.	Yes / No		

Notes:-

2. All the statements copies of the certificates, documents etc., shall be given page numbers on the right corner of each certificate, which will be indicated in column (4) against each item. The statements furnished shall be in the formats appended to the tender document.
- 2) The information shall be filled-in by the Tenderer in the checklist and statements I to VII, for the purposes of verification as well as evaluation of the tenderer's Compliance to the qualification criteria as provided in the Tender document.

N.B:INTENDING BIDDERS CAN CONTACT OFFICE OF SUPERINTENDING ENGINEER(PH), WEST CIRCLE, HYDERABAD.

_____ FOR ANY
CLARIFICATION IN INFORMATION ON ANY WORKING DAY DURING WORKING HOURS.

- Zip formats:
- i) Milestone programme.
 - ii) Schedule 'A'.
 - iii) Schedule 'B' [Formats to be appended here].
 - iv) Schedule 'C'.
 - a) Scope of work.
 - b) Technical specifications:
[Detailed supplemental Technical specifications in the light of GOs, IS codes, and site conditions interms of Cl.7 of APSS]
 - v) Settlement of Claims.

Schedule - C
SPECIAL SPECIFICATIONS [S.S.]
SCOPE OF WORK

The information and data furnished herein relevant to the work and site conditions are genera. It shall be the responsibility of the contractor to fully acquaint himself with the nature and location works, quarries, local conditions and other aspects which are relevant to the work.

- A) Location of the work:**NIZAMPET, Ranga Reddy(Dist.)**
- B) Roads (Best ways to approach the work site). Available

- C) Climate, Rainfall, Temperature (working season) : Moderate
- D) Hydraulic particulars (Canal, Drain, Reservoir). ---
- E) Estimate Considerations (Soil classifications and the quantities of respective classifications. The quantities of excavation proposed for construction purpose).
- F) SSR (Year, and extra allowance considered) :
- G) Estimated amount and LS provision [ECV] (Considered in the estimate for working out thorough rates). As per NIT
- H) Any other information available with the department with the department relevant to the work (land acquisition, funds).--
- I) Details of works in each Mile stone [Finished Items of work].

Note: The information furnished is the best available. However the department does not guarantee the correctness of interpretations, deductions of conclusions which are given as supplementary information. The information have been produced as found communicated ascertained or other wise learned by the department.

- .1 TECHNICAL SPECIFICATIONS [Detailed Supplemental Technical Specifications in the light of GO's IS codes and Site conditions in terms of Clause 7 of APSS].