

SPECIFICATIONS

1. CONDITIONS:

1. Agency has to arrange for
 - i) Dewatering in the pits, joints and lines, for which no extra payment will be made. The rates quoted shall be deemed to include the same.
 - ii) Sufficient No. of gang & skilled personnel of Plumbers and workmen etc., to speedily rectify complaints.
2. Without water supply interruption, the maintenance job has to be carried out. For this purpose the contractor representative should inform to the zone and department before start and after completion of the job.
3. Additional Security Deposit if necessary of 5% will be deducted from each Running Bill, to set off the balance works if any, for example back-filling, clearing of site And return of old materials.

2. PREFERRED BRANDS: - These are already given in BOQ apart from this

1. G.I. pipes and fittings should be medium duty and ISI marked.
2. G.M. Valves with ISI make approved brand.
3. Sluice valves of Class PN-1 of approved make confirming to ISI with non-rising spindles.
4. Butterfly valves of approved make confirming to ISI.
5. Wash basin/LLF tanks are as per approved make given in the list confirming to ISI.

3. C.I PIPES AND ACCESSORIES:-

The cast iron spigotted pipes required for the work shall be arranged by the Contractor. These pipes may also be supplied on 'free issue' basis, wherever indicated in the BOQ, depending on the availability. The contractor shall make necessary arrangements for transporting the pipes from VSP stores, located near the plant site, to the work site and safe custody of the stores at site.

All specials, fittings and accessories shall be of best quality and of reputed manufacture and shall conform to the relevant codes and specifications.

4. SIZE OF THE TRENCH:-

The trench shall be so dug that the pipe can be laid to the required alignment and at the required depth. The size of the trench shall be as per the following table unless specified otherwise due to the site conditions.

Sl.No.	Pipe Dia (mm)	Depth (cm)	Width (cm)
A. C.I. PIPES			
1.	80	105	75
2.	100	105	75
3.	150	105	75
4.	200	110	80
5.	250	120	80
6.	300	135	80
7.	350	145	90
8.	400	155	90
9.	450	170	100
10.	500	185	100
11.	600	205	110
B. G.I. PIPES			
1.	15 to 50	60	30
2.	65 to 100	75	45

5. LAYING OF PIPES

The pipes shall be carefully aligned to the required line and level the spigot end shall centered into the socket of the next pipe and forced home and aligned to gradient. The pipe shall be secured in place with approved backfill material tamped under it except at the socket.

On level ground, the socket ends should face upstream. When the line runs up hill, the socket ends should face the upgrade.

Wherever it is necessary to deflect a pipe from a straight line either in the vertical or horizontal plane to avoid obstructions or where long radius curves are permitted, the deflection allowed at the joint shall not exceed 2.5 degree as per IS: 3114- 1965.

The cutting of the pipe, for inserting the valves, fittings or closure pieces shall be done in a neat and workman like wanner without damage to the pipe so as to leave a smooth end at right angles to the axis of the pipe.

Flame cutting of cast iron pipes by means of an oxyacetylene torch shall be avoided.

6. JOINTING OF PIPES

Wherever flanged joints are necessitated due to site condition or otherwise, the jointing material shall be rubber washers of approved make and thickness and shall cover the full diameter of the flange. Each bolt should be tightened diametrically opposite bolts alternately. The practice of fully tightening the bolts in peripheral sequence is highly undesirable.

7. SPECIFICATIONS FOR C.I. PIPES LEAD JOINT

The joint sealing is done by stuffing a backing material such as spun yarn and pouring molten lead in the joint space and finally caulking thoroughly with lead.

Lead jointing shall strictly confirm to the specifications with regard to materials and jointing procedure laid down in IS:3114.

Lead used for caulking purpose shall confirm to IS:782. The packing may be done with any one of the materials specified in IS:3114 and approved by the Engineer. The quantities of lead and packing material shall be as under.

Pipe Dia (mm)	Depth of lead in joint (mm)	Weight of lead per joint(Kg.)	Weight of Yarn per joint (Kg.)
80	44.15	1.814	0.128
100	44.45	2.185	0.170
125	44.45	2.840	0.298
150	44.45	3.447	0.340
200	50.80	4.600	0.538
250	50.80	6.740	0.652
300	50.80	7.330	0.737
350	63.50	8.140	0.825
400	63.50	11.208	0.925
450	63.50	17.010	1.246
500	63.50	18.951	1.531
600	63.50	22.757	1.814

The packing materials shall be placed around the spigot of the pipe and shall be proper dimensions to centre the spigot in the socket. When a single strand of packing material is used, it shall have an overlap at the top of not more than 50mm. When more than a single strand is required for a joint, each strand shall be cut out to sufficient length so that the ends will meet without causing over lap. The ends of the successive strands shall meet the sides of the pipe alternately and not on the top or at the bottom.

The spigot shall be shoved home in the socket and the packing material shall be driven tightly against the inside base or head the socket with suitable packing tools.

Lead shall be heated in melting pot kept close to the joint to be poured to avoid cooling of the molten metal while being carried to the joint. The lead shall be rendered thoroughly fluid and heated to such temperature that when stirred, it will show a rapid change of colour. All scum shall be removed from the lead before pouring it.

The remainder of the joint space stuffed with packing material shall be filled by running in molten lead using a joint runner.

Finally the joint shall be thoroughly caulked with lead using pneumatic tools or a head hammer weighting not less than 2 Kgs. The joint shall be finished 3mm behind the socket face and shall be water- tight.

8. OH TANK CLEANING

Disinfection of water tank shall be done by first emptying of the tank and then making bleaching powder at $\frac{1}{2}$ kg and cleaned with fresh water by using broom stick etc., and re-fixing dummy or closing drain out valve after cleaning operation and pouring water to the tank.

PREAMBLE TO BILL OF QUANTITIES

1.0 The scope of the work covered under this contract is for providing water supply maintenance in VSP Township.

The work to be executed under this contract comprises of:

1. Attending to chokages in water supply lines.
2. Rectification like removal of unnecessary bends etc., in line and modification/alteration done by changing dia of pipe for increasing pressure in the supply/distribution lines.
3. Providing ferrule connections when there is no pressure in the line.
4. Attending the inlet/outlet valves repair/replacement for dwelling units.
5. To check for sluice valves gland packing etc., to arrest continuous leakage etc., occurring due to wear and tear from daily operation of valves.
6. Replacement of sluice valves where spindles, check nuts, gates are worn out or body or gland replacement.
7. Attend to lead joint or burst in pipe line leakages.
8. Tank cleaning work.
9. Attending to maintenance of float sets/replacement of float valves etc.,
10. Checking and changing of gate valves etc., in the water lines in parks and public buildings.
11. a) Supplying necessary GI & CI pipes specials and fittings wherever necessary while executing maintenance jobs including removing the existing ones.
 b) Transporting required CI pipes from VSP Town maintenance stores to work site for incorporation in the works.
 c) Laying and jointing CI pipes with necessary fittings and specials including excavation of trenches and back filling testing and commissioning of the distribution system, all complete and all such works as will be required to maintain the water supply distribution system in Township and to public buildings effectively.
 d) Repair/replacement Wash basins/LLF tanks/LLT kits/Urinals for dwelling units and public buildings.

2.0 The quantities indicated in the bill of quantities are the approximate quantities of work involved. The quantities are indicated for the guidance of the bidder.

The rate indicated against each item shall be for the finished work and will be deemed to include the cost of all materials, labour, tools and tackles, paint and equipment where needed etc., involved in the work as actually executed, excluding the cost of cement and reinforcement steel which shall be issued at free of cost by VSP, from VSP stores. Necessary transportation including vehicles loading, unloading and safe custody etc, all shall be arranged by the tenderer/contractor at his own cost. The items in the BOQ shall be read accordingly.

The specified brands/make mentioned in the bill of quantities preferred list are to be provided in the concerned works by the tenderer/contractor. The equivalent shall be used when the specified brands/makes are not available in the market and duly obtaining the approval of the Engineer before use.

The tenderer shall carefully go through the clauses in the invitation to Tender, Articles of agreement, general and special condition of contract, specifications. Bill of quantities shall include in his rates any sum he may considered necessary to cover the fulfillment of the various clauses contained therein. The items of work and the unit prices stated in the bill of quantities shall be inclusive of every thing necessary to complete the said items of work within the contemplation of the contract and beyond the unit process, no extra payment will be allowed for any incidental or contingent work labour, material and plant.

Rates for all items of the work are to be filled in by the tenderer in figures as well as in words, in ink, in English language and corrections, if any must be initialed by the tenderer.

The quantities of the items of the work indicated in the bill of quantities are probable quantities only and it must be clearly understood that the contract is not a lump sum contract, that neither the probable quantities nor the value of the individual items of work nor the aggregate value of the entire tender will form part of the contract, and the Employer does not in any way assure the tenderer or guarantee that the probable quantities are correct or that the work should correspond there to.

No change in the unit rate will be admissible for the variation in quantities, unless otherwise specified all measurements will be in metric units.

3.0 MODE OF EXECUTION

The contractor or his authorized representative should come every day in the evening to office and collect the work orders and instructions given to him from time to time for smooth operation of the maintenance contract and report progress of work executed previously. The work orders issued for specific works shall also indicate the time period within which a particular work has to be completed. It shall be responsibility of the contractor to ensure that such works are completed within the specified time periods. The agency has to engage sufficient manpower depending on the need or requirement of jobs.

Measurements are to be taken with area supervisor and to be certified jointly time to time.

Acknowledgements shall be obtained by the Agency from the concerned as per the Directions of the Engineer.

4.0 MODE OF MEASUREMENT

Mode of measurement for all the items in bill of quantities shall be as per IS: 1200. All the items of work in the BOQ are to be read as per the specifications and/or as directed by the Engineer. The items in the BOQ are to be read accordingly.

LIST OF PREFERRED MAKES

Sl.No.	DESCRIPTION OF ITEM	MAKE
1.	Vitreous water Closet/ Wash basin/Urinal	PARRYWARE/HINDUSTAN/NYCER/RASI
2.	Flushing Cistern	PARRYWARE/PRINCE
3.	Galvanized Steel Pipes	JTC/JINDAL/PRAKASH/GST/ZENITH/QST
4.	Galvanized Steel Fittings	HB/SUN/SRI
5.	Rigid PVC Pipes & Fittings	PRINCE/FINOLEX/SUPREME/BHARAT
6.	HDPE Pipes & Fittings	EMCO/DRIPLAST/MANIKYA
7.	Waste Couplings	NOVA/SPECTRUM
8.	CP Brass Shower	BESTO/PLUMBER
9.	CP Brass water supply fittings	SPECTRUM/NOVA/LION/LUSTER
10.	CP Brass Bottle trap	NOVA/SPECTRUM/KINGSTON
11.	CP Brass Flush valve	NOVA/SPECTRUM
12.	15mm PVC inlet connection	ROYAL/SUNDEEP
13.	Plastic Toilet Seat Cover	PATEL/COMMANDER
14.	Gun Metal Non-return valve	LEADER/LDR
15.	Plastic Bibcock	BELNAL/PRINCE/PRAYAG
16.	Float valve, Push cock	PRAYAG/JAYPEE

- | | |
|-----------------------------------|----------------------------|
| 17. Brass Full way wheel valve | LEADER/ZOLOTO |
| 18. 32mm dia/40mm dia waste pipes | BRIGHT/GAISPO |
| 19. CI Fittings | UPADYAYA/RONA/VENUS |
| 20. PVC Conduits/Sleeves | VISHAL/RATNA/MERCURY/PLAZA |
| 21. CI pipes and fittings | KESOSPUN/ISSCO/ELECTROSPUN |
| 22. Sluice Valves | IVC/FOURESS/RONEX |
| 23. Air valves | IVC/UPADHYAYA |
| 24. Water Meter | DASHMESH/RAJKAMAL |

“ISI Stamped/marked items will be treated as commercial/technical equivalents to be brands specified in the above list of specifications.

ADDITIONAL SPECIAL CONDITIONS

- 1.0 The contractor shall get the paints shade and brand approved by the Engineer prior to procurement. Use of materials other than approved one shall lead to action in terms of contract. The contractor shall produce the documentary proof of purchase of the approved materials as and when required by the Engineer.
- 2.0 Contractor and his workmen shall take care to see that no damages are caused to the belongings of the residents of VSP property.
- 3.0 Contractor shall arrange proper cleaning of the floors and etc., immediately after completion of the work under particular job orders.
- 4.0 The contractor not complying with the conditions under Clause-1, 2&3 above is liable to pay a penalty to be assessed by the Engineer. The assessment of penalty by the Engineer is final and binding on the contractor. Penalty will be recovered from the bills.
- 5.0 **Water & Power:**
 - 5.1 Water:- The water to the extent required for the work will be supplied by VSP free of cost at selected points/taps. The contractor has to make necessary arrangements at his own cost to draw water from these lines.
 - 5.2 Power:- Electrical power to the extent required for the work will be supplied by VSP free of cost at selected points. The agency has to make necessary arrangements. The agency shall use proper electrical equipment so that the power factor at source point shall not fall below 0.85.
- 6.0 (i) The work shall be executed as per the job orders issued to the contractor. The job orders shall indicate the details of the job, the location and completion time in the job orders. The time schedule as in the job order is to be followed strictly.
 - (ii) The contractor or his authorized representative shall visit the office of the Engineer every day in the morning at 9.00 AM and at 2.00 PM. in the afternoon and report the status of the works under execution and receive further instructions and job orders.
 - (iii) The contractor shall invariably obtain work completion certificate showing the details of completed work duly signed by his representative, acknowledged by the resident, and certified by the supervisor immediately on completion of job. This is required for Town Maintenance records. However, the payments will be made for the work carried out and measured as per relevant BQO items.
- 7.0 Depending upon the urgency, works of following nature are required to be attended and completed within 24 hours. In the event of contractor not attending and completing such works within 24 hours, or if the contractor or his authorized representative is not available for

taking the instructions for these works, the department will have the right to execute such works either departmentally or by other agency at the risk and cost of the contractor.

a) Water supply complaints in respect of restoring water supply & distribution.

8.0 The Job orders/Instructions/Notices as and when issued shall be collected by the contractor at the Maintenance Office of VSP, in case the contractor or his representative fails to attend the VSP maintenance office, the said job orders/ instructions/Notices etc., will be displayed on the Notice Board of the VSP Maintenance Office for the particular area and the same shall be deemed to have been served on the Contractor.

9.0 In case of delay in completion of work as given in such job orders, liquidated damages shall be levied at the rate of 2% of the value of such individual job order, for each day of delay for the total period of delay. However, the maximum recovery shall not be more than 10% of the value of the work mentioned in the job order.

10.0 Engineer reserve the right to get the particular job done through any other agency and any extra amount incurred in getting the job thus done shall be deemed to be debt due by the contractor to the Employer and the same shall be recovered by the Engineer from the pending bills accordingly without any reference to the contractor.

11.0 **Period of Contract**

The contract is initially for a period of Two years and VSP reserves the right to extend the contract for a further period of One year on the same rates, terms and conditions of the contract for which the contractor shall not have any objection.

12.0 **Land**

The employer will at his discretion and for the duration of the contract make available land, free of charge, within and /or near the employer's work site for the contractor to put up stores, site fabrication yard and office as required for the execution of the contract. Any clearing and leveling of the ground, services, roads etc., as required shall be done by the contractor at his own cost conforming to the various stipulations of the employer if any. The area required for the above purpose may be indicated by the contractor for consideration of the employer.

13.0 **Accommodation for labour and supervisory staff**

The contractor shall make his own arrangements for the accommodation of his labour and supervisory personnel for which no land shall be provided by the employer.

14.0 On completion of works and/or on termination of contract, field office, construction stores, fabrication yard and all other temporary works shall be dismantled and removed from site by the contractor and the site and works shall be left clear and clean of all obstructions at his cost. In the event of contractor's failure to do so, the employer reserves the right to clear site in manner as he may deem necessary and the cost and the expenses for all such clearances incurred by the employer shall be recovered from the contractor's bills or from any money due to the contractor from the employer without prejudice to any other measures the employer is empowered to take under the contract. The employer also reserves the right to

take over any or all such temporary structures put up by the contractor on completion of the works at the mutually agreed terms.

15.0 VSP in case of exigencies, reserves the right to award more than one contract in the same area involving same nature of work for which the existing contractor shall not have any objection.

16.0 VSP follows ERP mode of payment. Therefore, the contractor shall submit all bills in ERP format for making payments.