

**MEMO NO. 341/ SOR-10/ B.P./2010/
OFFICE OF THE ENGINEER-IN-CHIEF
WATER RESOURCES DEPARTMENT
CHHATTISGARH, RAIPUR**

Raipur, Dated /05/2018

To,

**All Chief Engineer
All Superintending Engineer
All Executive Engineer (in Charge of Division)
Water Resources Department, Chhattisgarh**

Sub : Amendment No. 6, 7 and 8 to the schedule of Rates for works of Water Resources Department in Chhattisgarh in force from 01.08.2010.

The Schedule of Rate for Water Resources Department in Chhattisgarh is in force from 01.08.2010. In continuation to the amendment No. 5 to this SOR (issued vide letter no. 341/SOR-10/B.P./2010/12721/ Raipur, Dated 09.09.2016) the following addition of new chapter / amendments are hereby issued in the above Stated Schedule of Rates with immediate effect .

Amendment 6 – New chapter no 44(introduced) : Pressure Irrigation network and allied works. (Item no. 4401 to 4475).

Amendment 7 – New item no. 1859(introduced) in chapter no. 18- Painting.

Amendment 8 – New items (introduced) from Item no. 2613 to 2638 in chapter no. 26.- Supply and erection of gates.

Encl.:- As Above

sd
(H.R. Kutare)
Engineer-in-Chief
Water Resources Department
Chhattisgarh, Raipur

Endt. NO. 341/ SOR-10/ B.P./2010/ 7537

Raipur, Dated 02/05/2018

Copy Forwarded to :

1. The Secretary, Govt. of Chhattisgarh, Water Resources Department, Mantralaya, Mahanadi Bhawan, Naya Raipur.
2. The Engineer-in-Chief , PWD Sirpur Bhavan, Naya Raipur.
3. The Engineer-in-Chief , PHED Indrawati Bhavan, Naya Raipur.
4. The Director, Rate & Cost, CWC, Sewa Bhavan R.K. Puram, New Delhi.
5. The Accountant General, Chhattisgarh , Near Vidhan Sabha, Raipur.
6. The Chief Technical Examiner, Indrawati Bhavan, Naya Raipur.
7. The Executive Engineer (Civil) CSEB, Raipur.
8. The Chief Engineer/Superintending Engineer/Executive Engineer -----
9. The Executive Engineer MIS, Data Center Sihawa Bhavan Campus, Civil line Raipur.

Encl : As Above

[Signature]
Engineer-in-Chief
Water Resources Department
Chhattisgarh, Raipur



GOVERNMENT OF CHHATTISGARH

WATER RESOURCES DEPARTMENT

Amendments in Schedule Of Rates

Amendment 6— New chapter no-44(introduced) : Pressure Irrigation network and allied works. (Item no. 4401 to 4475)

Amendment 7— New item no. 1859(introduced) in chapter no. 18- Painting

Amendment 8 — New items (introduced) from Item no. 2613 to 2638 in chapter no. 26.- Supply and erection of gates.

Engineer-in-Chief
Water Resources Department
Chhattisgarh, Raipur

CHAPTER – 44

PRESSURE IRRIGATION NETWORK AND ALLIED WORKS

Instructions

1. General instructions on Schedule of Rates shall be applicable to the extent they are relevant.
2. Rates include cost of :
 - a) Labour
 - b) Running charges of machinery including fuel and lubricants.
 - c) All material required for execution of item of work
 - d) Unless otherwise specified all lead and lifts
 - e) Wastage of Cement, Sand, Coarse Aggregate.
 - f) Shuttering, Scaffolding, Form work, Vibration and Curing
 - g) Testing of materials and quality assurance measures including Mix Design.
 - h) Standard Safety measures.
 - i) Site clearance, Layout and Setting out of work.
3. The rates of completed items are inclusive of loading and unloading, standard finish required for Works, Cleaning/Preparation of cold and hot joint.
4. All the construction material, workmanship and quality shall conform to the standard prescribed in IS-Codes and Specification/Guidelines/Circulars of MP/CG Water Resources Department
5. For all nominal mixes, mix proportion shall be as per IS 456
6. The rates of completed items are inclusive of site clearance, haul roads, working under watery situation, de-silting but excluding dewatering and river diversion arrangements wherever applicable
7. Items related to excavation and earthwork shall be taken from chapter of "Excavation and Earthwork"
8. Items related to Concrete Work not given in this chapter shall be taken from chapter of "RCC and form work", Special Items of Earth Masonry Dam & Canals" and "Special Items of Canal Structures & Bridges."
9. Rates for Electric Sub Station items, Lighting inside and outside Pump House, Earthing for Pump House installation may be adopted as per CSEB/CG PWD Schedule of rates.
10. Rates for Other required items which is not given in this chapter shall be taken from other chapters of CG WRD SOR.
11. Item no. 4447, 4448 and 4449 shall be used for estimation purpose at DPR stage only. For estimation purpose the CCA in consideration has been suitably sub-divided in 5000/4800 ha boundaries beyond rising/gravity mains. In case the total CCA under consideration is less than 5000/4800 ha the cost of Rising Main/Gravity Main shall deemed to be included in this item and separate analysis may be carried out for specific CCA.
12. For design of MS pipes with external lining/ coating of shotcrete an ovality/deflection of 3% and MS pipes with external lining/ coating of polyurethane/3LPE an ovality/deflection of 5% pipes shall be considered in design, for different type of soils requiring specific backfill as per table no. 6.1 of American Water Works Association Manual M11 (AWWA-M11)
13. Rates for solar pumps etc. has been adopted from CREDA.

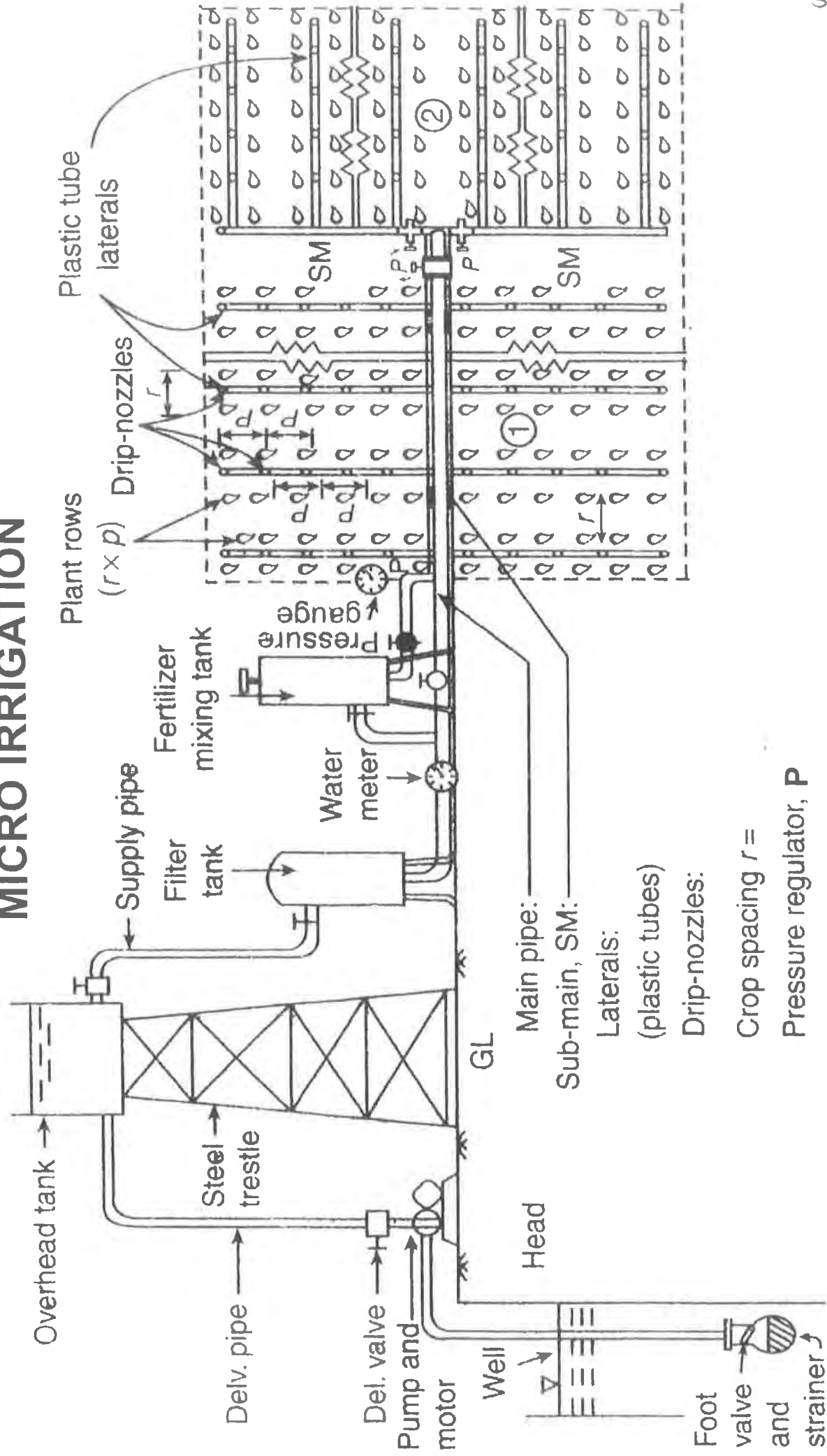
14. Rate for Items no. 4450 to 4474 required for drip irrigation below 1Hact./2.5Hact. has been adopted in accordance with Chhattisgarh Rajya Beej evam Krishi Vikas Nigam Limited. These rates are only for estimation and reference purpose for the cost of work only as WRD will work upto 1Hact./2.5Hact. chak.
15. A general layout/schematic diagram of a pressure irrigation network scheme and its allied components has been shown in Plate-I.

The Following Indian/International Standards may be referred to :-

I. S. No.	Title
1710 -1989	Pumps - Vertical Turbine Mixed and Axial Flow, for Clear Cold Water (Reaffirmed 2009)
4457 - 2007	Ceramic unglazed vitreous acid resisting tile - [Flooring, Wall Finishing and Roofing (Reaffirmed 2012)
IS 5491 - 1969	Code of practice for laying of in-situ granolithic concrete floor topping [CED 5: Flooring, Wall Finishing and Roofing] (Reaffirmed 2001)
784 - 2001	Pre-stressed Concrete Pipes (Including Specials) — Specifications
14845 - 2000	Resilient Seated Cast Iron Air Relief Valves for Water Works Purposes (Reaffirmed 2010)
14846 - 2000	Sluice Valve for Water Works Purposes (50 to 1200 mm Size) (Reaffirmed 2010)
5822-1994	Code of practice for laying of electrically welded steel pipes for water supply
Is 1916-1989	Steel cylinder pipe with concrete lining and coating specification
AWWA Manual M-11	Steel pipe -A guide for design and installation
MoWR&RD&GR and CWC	Guideline for planning and design of piped irrigation network- July 2017
4984-1995	High density polyethylene pipe s for water supply-specification
8329-2000	Centrifugally cast (spun) ductile iron pressure pipes for water , gas and sewage - specification
14792-2000	Irrigation equipment - design ,installation and operation of sprinkler irrigation systems-code of practice
10799-1999	Irrigation equipment - design ,installation and field evaluation of micro irrigation systems -code of practice
13062-1991	Irrigation equipment and systems evaluation of field irrigation efficiencies-guidelines
9012-1978	Recommended practice for shotcreting

SCHEMATIC DIAGRAM & MICRO IRRIGATION

Plate-1



Chapter 44

PRESSURE IRRIGATION NETWORK AND ALLIED WORKS

A – Civil Works

Item No.		Description of Item	Unit	Rate	Remark
4401	A	Providing and placing sand bags consisting of empty cement bags filled with 35 to 40 kg locally available sand for forming ring bund including cost of all materials, labour, plugging joints with selected earth, etc., complete.	Each	33.00	SOR item 2724
	B	Labour only for filling empty cement bag with sand stitching with sutli and stacking.	each	7.00	
4402		Filling clayey soil between two rows of sand bags placed for forming ring bund including cost of all materials, labour, tamping, plugging leakage points etc. complete.	Cum	48.00	
4403		Supplying, fabricating, erecting structural steel members fabricated from rolled steel sections like channels, angles, beams, rails, plates etc., as per specifications and drawings including cost of all materials, machinery, labour, scaffolding, cutting, welding, grinding, cleaning, applying two coats of approved synthetic enamel paint over a coat of zinc chromate red oxide primer paint etc., complete with all lead and all lift.	tonne	78249.00	
4404		Providing and fixing acid resistant tiles of approved quality for battery room flooring / dadoing set over a bed of 20 mm thick CM 1 : 3 proportion by volume including cost of all materials, machinery, labour, cleaning surface, batching and mixing mortar, grouting joints with acid resistant mortar mix, finishing, curing etc. complete.	Sqm	897.00	
4405		Providing and laying 40 mm thick granolithic flooring for pump floor in cement concrete M-25 proportion by volume using 10 mm graded approved clean, hard, aggregates including cost of all materials, machinery, labour, formwork, cleaning surface, batching and mixing concrete, laying concrete in alternate panels of specified size as directed, levelling, tamping, finishing, curing etc. complete.	sqm	220.00	



Item No.	Description of Item	Unit	Rate	Remark
4406	Additional rate for adding Ironite compound or floor hardener to concrete. For floors subjected to heavy loads ironite compound is added to concrete at 2 kg / sqm at the time of mixing concrete to impart more hardness to finished floor.	sqm	34.00	

B :- Pump and Allied Works

Item No.	Description of Item	Unit	Rate	Remark
4407	Design, manufacture, supply, erection, trial running, testing and commissioning of vertical turbine pumps of approved make conforming to IS 1710 having specified pump output specified operating head coupled to LT motor of adequate hp rating operating at 400 to 440 volts+-5%, 3 phase with flexible coupling, self-water lubricated thrust bearing, discharge tee with flange end or connecting delivery pipe with all other standard accessories and safety device etc. complete as per specification and condition of contract Rate rounded for VT pumps with motor- per hp per set.			
1	up to 500 hp	per hp/set	7036.00	
2	more than 500 hp and up to 1000 hp	per hp/set	7914.00	
4408	Design, manufacture, supply, erection, trial running, performance testing and commissioning of vertical turbine pump of approved make conforming to IS: 1710 having specified pump output under specified operating head coupled to HT motor of adequate HP rating operating at 6.6 KV with flexible coupling, self-water lubricated thrust bearings, discharge Tee with flanged end for connecting delivery pipe with all other standard accessories and safety devices etc., complete as per specifications, terms and conditions of contract.			
1	V T pump with more than 1000 hp up to 1500 hp motor	Per set /hp	8792.00	
2	V T pump with more than 1500 hp up to 2000 hp motor	Per set/hp	9278.00	
3	V T pump with more than 2000 hp up to 2500 hp motor	Per set /hp	9759.00	
4	V T pump with more than 2500 hp up to 3000 hp motor	Per set /hp	10236.00	

Item No.		Description of Item	Unit	Rate	Remark
	5	V T pump with more than 3000 hp up to 3500 hp motor	Per set /hp	10707.00	
4409		Supply, installation, commissioning and testing of Solar Pump set with foundation frame connection of suction, delivery pipe with required capacity of solar panel and its all component duly connected with control panel, operating panel with the backup power system for 24 hours arrangement, fencing of premises including maintenance of whole solar system, solar pump set for 5 years.			
	1	5 HP - 4.8 KW	Each set	560500.00	
	2	7.5 HP – 7.5 KW	Each set	763541.00	
	3	10 HP – 9.6 KW	Each set	949060.00	
	4	20 HP -24 KW	Each set	1808833.00	
	5	20 HP – 28.8 KW	Each set	2818000.00	
	6	25 HP -33.6 KW	Each set	3227000.00	
	7	30 HP – 38.4 KW	Each set	3713000.00	
	8	40 HP – 45 KW	Each set	4200000.00	
4410		Supply and installation of floor mounting type LTAC panel of approved make fabricated from sheet metal and painted with provision for suitable incoming and specified number of outgoing feeder inlets with metering panel and all other accessories complete for auxiliary supply as per specifications, terms and conditions of contract etc. complete.			
	1	Up to 1500 hp	each	122410.00	
	2	More than 1500 hp	each	232408.00	
4411		Design, fabrication, supply, assembling, testing and commissioning of HT pump panel board made of sheet metal duly painted with recess for cable entries at the bottom suitable for 6.6 KV equipped with vacuum circuit breaker of suitable capacity for 1 number incoming 1600A and 2 numbers 630A outgoing of suitable capacity with aluminium bus bars of 1600Amp metering panel, protection relays and all other accessories complete with wiring as per specifications and approved drawings.			

Item No.	Description of Item	Unit	Rate	Remark
	1	Panel board with fittings common to all pumps	per Set	917400.00
	2	Additional VCB including sheet metal enclosure, extension bus bars, metering and relays complete for each additional pump mounted on common panel board. Note: Rate for complete set of pump panel board= Rate for common VCB and fittings + (Rate for additional VCB per pump x Number of additional pumps	per Set / Pump	324148.00
4412	Design, fabrication, supply, assembling, testing and commissioning of Remote control panel made of sheet metal in desk type configuration duly painted with recess for cable entries at the bottom equipped with operating consoles, indicators, enumeration windows, hooters and all other accessories assembled and ready to receive control wires and other connections etc. complete as per specifications and approved drawings. Note: Rate per complete set of Remote control panel =Rate for Remote control panel for each pump x Number of pumps	per Pump	27522.00	
4413	Supply, installation and commissioning of High tension Power factor capacitor bank of specified KVAR rating operating at 6.6 KV with all accessories etc. complete as per specifications, terms and conditions of contract. Note: Rate for PF capacitor bank set / pump =Specified KVAR rating x Rate per 50 KVAR / 50	per KVAR	489.00	
4414	Supply, installation and commissioning of Load Break Switch with HRO fuses, CBCT and ELR in sheet metal enclosure with operating console etc. complete for use along with Power factor capacitor Bank as per specifications, terms and conditions of contract.	per Set	231644.00	
4415	Supply and installation of Auxiliary DC supply system of approved make with battery charger cum DCDB with batteries for 110 A hour etc. complete with all accessories	per Set	418946.00	

Item No.		Description of Item	Unit	Rate	Remark
4416		Supplying and installing Temperature scanner suitable for operating at 110 V DC or 230 V AC mounted in a duly painted sheet metal enclosure provided with NO / NC relays for transmitting signal to VCBS for tripping with audible alarm for both windings and bearing RTDs with all other accessories for satisfactory functioning of the system etc. complete.	per set	47399.00	
4417		Supply and installation of Auxiliary transformer 6.6 KV/433 Volts 160 KVA copper wound, insulating oil filled with all accessories etc. complete as per specifications.	each	198770.00	
4418		Fabricating, supplying, erecting, testing and commissioning 6.6 KV 2500A capacity wall entry type bus duct with flexible end connectors to connect transformer and HT motor panel inside pump house with all accessories, supports etc., complete as per specifications and drawings.	m	24464.00	
4419		Supplying, laying and connecting XLPE 6.6 KV(E) 3 core cable suitable for 28 KA short circuit rating with end connectors from HT panel to motor, starters, capacitor panels etc. complete as per directions.			
	1	3 core 95 sqmm cable	m	374.00	
	2	3 core 120 sqmm cable	m	581.00	
	3	3 core 240 sqmm cable	m	673.00	
	4	3 core 400 sqmm cable	m	1040.00	
4420	A	Supplying of PVC insulated heavy duty cables (conforming to I.S. 1554.1964) 1100 volts, grade 3½ core, armoured of approved make -			SOR item 3443
	(i)	25 sq. mm	m	271.00	
	(ii)	35 sq. mm	m	314.00	
	(iii)	50 sq. mm	m	408.00	
	(iv)	70 sq. mm	m	530.00	
	(v)	95 sq. mm	m	687.00	
	(vi)	120 sq. mm	m	840.00	
	(vii)	150 sq. mm	m	992.00	
	(viii)	185 sq. mm	m	1242.00	

Item No.	Description of Item	Unit	Rate	Remark
	(ix) 240 sq. mm	m	1588.00	
	(x) 300 sq. mm	m	1929.00	
B	Supplying of PVC insulated heavy duty cables (conforming to I.S. 1554.1964) 1100 volts, grade 3½ core, un-armoured of approved make -			SOR item 3444
(i)	25 sq. mm	m	227.00	
(ii)	35 sq. mm	m	276.00	
(iii)	50 sq. mm	m	363.00	
(iv)	70 sq. mm	m	486.00	
(v)	95 sq. mm	m	642.00	
(vi)	120 sq. mm	m	784.00	
(vii)	150 sq. mm	m	942.00	
(viii)	185 sq. mm	m	1161.00	
(ix)	240 sq. mm	m	1531.00	
(x)	300 sq. mm	m	2340.00	
C	Laying of underground cable armoured / unarmoured in existing prepared trench as per specification - labour only -			SOR item 3445
(i)	2 core cable up to 10 sq. mm	m	20.00	
(ii)	3½ core cable 16 sq. mm to 120 sq. mm	m	40.00	
(iii)	3½ core cable 150 sq. mm and above.	m	60.00	
4421	Supply, installation and commissioning of soft starter for specified KW load operating at 6.6 KV with load break switch, metering, protection by-pass vacuum contactor with all accessories etc. complete housed in painted sheet metal enclosure. Note: Rate for Soft starter set per pump = Specified kW load x Rate per 500 kW / 500 Specified kW load = Hp X 0.746	per kw load	917.00	
4422	Design, manufacture, supply, erection, trail running and commissioning of Auto transformer starter or equivalent for specified KW/HP load operating at LT 400 to 440 volts ± 5%, 3 phase with Load break switch metering, protection etc. with all accessories etc. complete housed in painted sheet metal enclosure. LT system up to 500 hp /375 kw ,the rates per 100kw rounded.	per 100 kw per set	155597.00	

Item No.	Description of Item	Unit	Rate	Remark
4423	Design, manufacture, supply, erection, trail running, testing and commissioning of LT control panel for specified KW/HP load operating at LT 400 to 440 volts+/- 5%, 3 phase equipped with circuit breaker of suitable capacity with aluminum bus bars of required load amp metering panel ,protection relays switch ,metering ,protection etc. with all accessories complete with wiring ,made of sheet metal duly painted with recess for cable entries at the bottom housed in painted sheet metal enclosure as per specification and approved drawing. rate of LT panel up to 500 hp set etc. complete.	per set	660250.00	
4424	Erection charges for Centrifugal Coupled Pump set :- Erecting and giving test of centrifugal coupled pump set with foot mounted motor excluding base plate coupling and foundation bolts etc. complete on provided concrete foundation/RSJ with accurate levelling with shims and proper alignment.			
1	15 TO 30 HP	each	2804.00	
2	31 TO 50 HP	each	3356.00	
3	51 TO 100 HP	each	4001.00	
4	101 TO 150 HP	each	4793.00	
5	151 TO 200 HP	each	5586.00	
6	201 TO 250 HP	each	6391.00	
7	251 TO 300 HP	each	7667.00	
8	More than 300HP(Add extra for each HP)	per hp	35.00	

C :- Pipe and Valves

Item No.	Description of Item	Unit	Rate	Remark
4425	Supplying and laying Pre-stressed concrete pipes (safe for 18 kg / sq cm test pressure) true to line and level with perfect linking at joint including cost of all materials, machinery, labour, loading, unloading, rolling, lifting and lowering into trench, cleaning socket and spigot ends with soap solution, applying soft soap to socket and spigot, fixing rubber sealing ring into correct position, jointing pipes perfectly by jacking or other approved			

Item No.		Description of Item	Unit	Rate	Remark
		method, arranging water for testing, giving necessary hydraulic test at specified test pressure etc. complete.			
	1	800 mm dia Pre-stressed concrete pipes.	m	3505.00	
	2	1000 mm dia Pre-stressed concrete pipes.	m	6373.00	
	3	1200 mm dia Pre-stressed concrete pipes.	m	8103.00	
4426		Manufacturing, supplying, laying in position, aligning, jointing, testing and commissioning of electric resistance welded / submerged arc welded mild steel (min Fe-410 grade) delivery pipes of specified diameter and plate thickness (As per relevant IS code) with welded ends wherever required and provided one coats of 400 micron thick food grade epoxy paint/ 500 micron polyurethane for inner surface and shotcrete lining/3LPE/1000 micron polyurethane on outer surface. Including cost of all materials, machinery, labour, cutting, bending, welding, finishing, painting, conveying to spot, lowering, aligning, jointing, arranging water for testing, ultrasonic/ hydraulic testing at fabrication site and after laying and jointing at specified test pressure etc. complete as per specifications and approved drawings.			
	1	300 mm Dia with 4mm Thickness	m	2661.00	
	2	350 mm Dia with 4 mm Thickness	m	3102.00	
	3	400 mm Dia with 4 mm Thickness	m	3543.00	
	4	450 mm Dia with 4 mm Thickness	m	3985.00	
	5	500 mm Dia with 5 mm Thickness	m	5216.00	
	6	600mm Dia with 5 mm Thickness	m	6256.00	
	7	700 mm Dia with 6 mm Thickness	m	8400.00	
	8	750 mm Dia with 6 mm Thickness	m	8998.00	
	9	800 mm Dia with 6 mm Thickness	m	9596.00	
	10	900 mm Dia with 6 mm Thickness	m	10792.00	
	11	1000 mm Dia with 6 mm Thickness	m	11988.00	
	12	1100 mm Dia with 7 mm Thickness	m	13184.00	
	13	1200 mm Dia with 8 mm Thickness	m	18162.00	

Item No.		Description of Item	Unit	Rate	Remark
	14	1300 mm Dia with 8 mm Thickness	m	19671.00	
	15	1400 mm Dia with 8 mm Thickness	m	21181.00	
	16	1500 mm Dia with 9 mm Thickness	m	25053.00	
	17	1600 mm Dia with 10 mm Thickness	m	29240.00	
	18	1700 mm Dia with 10 mm Thickness	m	31063.00	
	19	1800 mm Dia with 10 mm Thickness	m	32886.00	
	20	1900 mm Dia with 12 mm Thickness	m	40696.00	
	21	2000 mm Dia with 12 mm Thickness	m	42832.00	
	22	2100 mm Dia with 12 mm Thickness	m	44968.00	
	23	2200 mm Dia with 12 mm Thickness	m	47104.00	
	24	2300 mm Dia with 14 mm Thickness	m	56487.00	
	25	2400 mm Dia with 14 mm Thickness	m	58936.00	
	26	2500 mm Dia with 14 mm Thickness	m	61386.00	
	27	2600 mm Dia with 14 mm Thickness	m	63835.00	
	28	2700 mm Dia with 16 mm Thickness	m	74791.00	
	29	2800 mm Dia with 16 mm Thickness	m	77554.00	
	30	2900 mm Dia with 16 mm Thickness	m	80316.00	
	31	3000 mm Dia with 16 mm Thickness	m	83079.00	
4427	A	The rate of fabricated MS pipe of various diameter and thickness as per design and specifications without coating . (To be used for Diameter, thickness of MS pipes other than mentioned in item 4426)	Tonne	63517.00	
	B	Fabricating, supplying, laying in position, aligning, jointing, testing and commissioning of electric resistance welded / submerged arc welded fabricated MS pipe of various diameter and thickness as per design and specifications (To be used for Diameter, thickness of MS pipes other than mentioned in item 4426 As per relevant IS code) with welded ends wherever required and provided one coats of 400 micron thick food grade epoxy paint/ 500 micron polyurethane for inner surface and shotcrete lining/3LPE/1000 micron polyurethane on outer surface . Including cost of all materials, machinery, labour, cutting, bending, welding, finishing, painting,	Tonne	81004.00	

Item No.		Description of Item	Unit	Rate	Remark
		conveying to spot, lowering, aligning, jointing, arranging water for testing, ultrasonic/ hydraulic testing at fabrication site and after laying and jointing at specified test pressure etc. complete as per specifications and approved drawings.			
4428		Providing, laying, Jointing & field testing of High Density Polyethylene pipes,(HDPE) confirming to IS: 4984/ 14151/ 12786/ 13488 with necessary jointing material like mechanical connector or jointing pipes by heating to the ends of pipes with the help of Teflon coated electric mirror or heater to the required temperature and then pressing the ends together against each other, to form a monolithic & leak proof joint by thermosetting process it may be required to be done with Jacks/ hydraulic jacks/ by fusion machine (50mm and above fusion jointed and below 50mm mechanical jointed)			
	A	For PN 6 (6 kg/sq cm)			
	(i)	63 mm dia pipes	m	125.00	
	(ii)	75 mm dia pipes	m	178.00	
	(iii)	90 mm dia pipes	m	245.00	
	(iv)	110 mm dia. pipes	m	351.00	
	(v)	125 mm dia. pipes	m	457.00	
	(vi)	140 mm dia. pipes	m	568.00	
	(vii)	160 mm dia. pipes	m	740.00	
	(viii)	180 mm dia. pipes	m	926.00	
	(ix)	200 mm dia. pipes	m	1145.00	
	(x)	225 mm dia. pipes	m	1448.00	
	(xi)	250 mm dia. pipes	m	1775.00	
	(xii)	280 mm dia. pipes	m	2217.00	
	(xiii)	315 mm dia. pipes	m	2798.00	
	(xiv)	355 mm dia. pipes	m	3570.00	
	(xv)	400 mm dia. pipes	m	4607.00	
	(xvi)	450 mm dia. pipes	m	5834.00	
	(xvii)	500 mm dia. pipes	m	7210.00	

Item No.	Description of Item	Unit	Rate	Remark
(xviii)	560 mm dia. pipes	m	9020.00	
(xix)	630 mm dia. pipes	m	11399.00	
(xx)	710 mm dia. pipes	m	13782.00	
B	For PN 8 (8 kg/sq cm)			
(i)	63 mm dia pipes	m	156.00	
(ii)	75 mm dia pipes	m	219.00	
(iii)	90 mm dia pipes	m	307.00	
(iv)	110 mm dia. pipes	m	452.00	
(v)	125 mm dia. pipes	m	580.00	
(vi)	140 mm dia. pipes	m	721.00	
(vii)	160 mm dia. pipes	m	942.00	
(viii)	180 mm dia. pipes	m	1182.00	
(ix)	200 mm dia. pipes	m	1464.00	
(x)	225 mm dia. pipes	m	1848.00	
(xi)	250 mm dia. pipes	m	2274.00	
(xii)	280 mm dia. pipes	m	2843.00	
(xiii)	315 mm dia. pipes	m	3585.00	
(xiv)	355 mm dia. pipes	m	4570.00	
(xv)	400 mm dia. pipes	m	5914.00	
(xvi)	450 mm dia. pipes	m	7497.00	
(xvii)	500 mm dia. pipes	m	9245.00	
(xviii)	560 mm dia. pipes	m	11600.00	
(xix)	630 mm dia. pipes	m	14656.00	
(xx)	710 mm dia. pipes	m	17715.00	
4429	Providing , Laying and jointing socket & spigot centrifugally cast (spun) Ductile Iron pressure pipe with inside cement mortar lining with epoxy based seal coat (class K-7) conforming to IS 8329/2000 with suitable rubber gasket (Push on) joint as per IS 5382/85 including cost of rubber gasket.			
1	80mm dia	RM	909.00	
2	100mm dia	RM	1017.00	
3	150mm dia	RM	1356.00	

Item No.		Description of Item	Unit	Rate	Remark
	4	200mm dia	RM	1829.00	
	5	250mm dia	RM	2417.00	
	6	300mm dia	RM	2993.00	
	7	350mm dia	RM	3807.00	
	8	400mm dia	RM	4870.00	
	9	450mm dia	RM	5674.00	
	10	500mm dia	RM	6618.00	
	11	600mm dia	RM	8318.00	
	12	700mm dia	RM	12096.00	
	13	750mm dia	RM	14076.00	
	14	800mm dia	RM	15776.00	
	15	900mm dia	RM	19250.00	
	16	1000mm dia	RM	23121.00	
	17	1100mm dia	RM	26981.00	
	18	1200mm dia	RM	30526.00	
	19	1400mm dia	RM	37551.00	
4430		Supplying, installing and commissioning electrode actuated water level transmitter of approved make with all accessories to protect against dry running of pump etc. complete.	per set	96327.00	
4431		Supplying, installing and commissioning electro-magnetic type flow meter of approved make with all accessories including display panel in the pump house.	per set	733920.00	
4432		Supplying, installing, testing and Commissioning (SITC) electrically actuated Wafer type flanged Butterfly valve PN (Pressure numbers) 1.0 Class conforming to BS : 5155 of specified diameter and approved make with gear box, electric motor and extension stem and all other accessories for perfect linking with pipes on either side including loading, unloading, lifting and placing in correct position, cleaning ends, inserting gaskets into correct position, jointing			

Item No.		Description of Item	Unit	Rate	Remark
		pipes and valve to form water tight joints, cost of all jointing materials, machinery, labour, etc. complete.			
	1	400 mm diameter butterfly valve with accessories	per set	32216.00	
	2	500 mm diameter butterfly valve with accessories	per set	55437.00	
	3	600 mm diameter butterfly valve with accessories	per set	79882.00	
4433		Supplying, installing, testing and commissioning(SITC) electrically actuated Wafer type flanged Butterfly valve PN (Pressure numbers) 1.6 Class conforming to BS : 5155 of specified diameter and approved make with gear box, electric motor and extension stem and all other accessories for perfect linking with pipes on either side including loading, unloading, lifting and placing in correct position, cleaning ends, inserting gaskets into correct position, jointing pipes and valve to form water tight joints, cost of all jointing materials, machinery, labour etc. complete.			
	1	400 mm diameter butterfly valve with accessories	rate per set	35608.00	
	2	500 mm diameter butterfly valve with accessories	rate per set	58797.00	
	3	600 mm diameter butterfly valve with accessories	rate per set	83210.00	
4434		Providing And Fixing butterfly valves including jointing & testing with cost of joining material such as bolt, nuts and rubber insertion all complete as per IS : 13095-1991. (Valve above 200mm dia should be gear operated)			
	A	For PN 1.0			
	(i)	100 mm	per Set	3427.00	
	(ii)	150 mm	per Set	4696.00	
	(iii)	200 mm	per Set	8963.00	
	(iv)	250 mm	per Set	13827.00	
	(v)	300 mm	per Set	18770.00	
	(vi)	350 mm	per Set	30221.00	
	(vii)	400 mm	per Set	39993.00	
	(viii)	450 mm	per Set	49739.00	

Item No.	Description of Item	Unit	Rate	Remark
	(ix) 500 mm	per Set	99435.00	
	(x) 600 mm	per Set	125566.00	
	B For PN 1.6			
	(i) 100 mm	per Set	3941.00	
	(ii) 150 mm	per Set	5383.00	
	(iii) 200 mm	per Set	10280.00	
	(iv) 250 mm	per Set	15859.00	
	(v) 300 mm	per Set	21508.00	
	(vi) 350 mm	per Set	34639.00	
	(vii) 400 mm	per Set	45853.00	
	(viii) 450 mm	per Set	57043.00	
	(ix) 500 mm	per Set	114157.00	
	(x) 600 mm	per Set	144090.00	
4435	Supplying, installing, testing and Commissioning (SITC) electrically actuated Double flanged Butterfly valve PN 1.0 Class conforming to IS : 13095 of specified diameter and approved make with gear box, electric motor and extension stem and all other accessories for perfect linking with pipes on either side including loading, unloading, lifting and placing in correct position, cleaning ends, inserting gaskets into correct position, jointing pipes and valve to form water tight joints, cost of all jointing materials, machinery, labour etc. complete with all leads and lifts.			
	1 700 mm diameter butterfly valve with accessories	per Set	262630.00	
	2 800 mm diameter butterfly valve with accessories	per Set	327643.00	
	3 900 mm diameter butterfly valve with accessories	per Set	392400.00	
	4 1000 mm diameter butterfly valve with accessories	per Set	469634.00	
	5 1100 mm diameter butterfly valve with accessories	per Set	586282.00	
	6 1200 mm diameter butterfly valve with accessories	per Set	740522.00	

Item No.	Description of Item	Unit	Rate	Remark
4436	Supplying, installing, testing and Commissioning (SITC) electrically actuated Double flanged Butterfly valve PN 1.6 Class conforming to IS : 13095 of specified diameter and approved make with gear box, electric motor and extension stem and all other accessories for perfect linking with pipes on either side including loading, unloading, lifting and placing in correct position, cleaning ends, inserting gaskets into correct position, jointing pipes and valve to form water tight joints, cost of all jointing materials, machinery, labour etc. complete with all leads and lifts.			
1	700 mm diameter butterfly valve with accessories	per Set	294658.00	
2	800 mm diameter butterfly valve with accessories	per Set	361207.00	
3	900 mm diameter butterfly valve with accessories	per Set	446634.00	
4	1000 mm diameter butterfly valve with accessories	per Set	544457.00	
5	1100 mm diameter butterfly valve with accessories	per Set	667313.00	
6	1200 mm diameter butterfly valve with accessories	per Set	819807.00	
4437	Supplying and fixing Butterfly valve actuator DOL panel board with push button starter and all other accessories including wiring for specified number of valves etc. complete.	per Set	262504.00	
4438	Supply of Ductile Iron Double Flange (DI D/F) Swing check valves slanted/straight seated with metallic, corrosion proof and wear resistant seat faces , body and disc of ductile caste iron GGG 50/SG iron 420/12 or equivalent grade as per IS 3896 (part 2) and subsequent revisions . shaft of stainless steel, shaft bearing of zinc free bronze and seat faces with nickle weld overlay , micro finished. All the inside and outside of the body is to be coated with double coating of epoxy liquid. Drilled as per IS 1538			
A	For PN 1.0			
(i)	100 mm dia	per set	14424.00	
(ii)	150 mm dia	per set	27279.00	
(iii)	200 mm dia	per set	46408.00	

Item No.	Description of Item	Unit	Rate	Remark
	(iv) 250 mm dia	per set	65076.00	
	(v) 300 mm dia	per set	94142.00	
	(vi) 350 mm dia	per set	155981.00	
	(vii) 400 mm dia	per set	181669.00	
	(viii) 500 mm dia	per set	297385.00	
	(ix) 600 mm dia	per set	412051.00	
	(x) 700 mm dia	per set	729895.00	
	(xi) 800 mm dia	per set	744104.00	
	B For PN 1.6			
	(i) 100 mm dia	per set	15866.00	
	(ii) 150 mm dia	per set	30007.00	
	(iii) 200 mm dia	per set	51049.00	
	(iv) 250 mm dia	per set	71583.00	
	(v) 300 mm dia	per set	103556.00	
	(vi) 350 mm dia	per set	171580.00	
	(vii) 400 mm dia	per set	199836.00	
	(viii) 500 mm dia	per set	327124.00	
	(ix) 600 mm dia	per set	419104.00	
	(x) 700 mm dia	per set	746521.00	
	(xi) 800 mm dia	per set	762732.00	
4439	Supplying, installing, testing and commissioning (SITC) Cast steel double flanged dual plate Check valve Class 150 conforming to API 594 of approved make of specified diameter and to withstand specified pressure with all accessories true to line and perfect linking with pipes on either side including loading, unloading, lifting and placing in correct position, cleaning ends, inserting gaskets into correct position, jointing pipes and valve to form water tight joints, cost of all jointing materials, machinery, labour etc. complete with all leads and lifts.			
	1 400 mm diameter check valve with accessories	per set	76867.00	
	2 500 mm diameter check valve with accessories	per set	95896.00	
	3 600 mm diameter check valve with accessories	per set	119634.00	

Item No.	Description of Item	Unit	Rate	Remark
4	700 mm diameter check valve with accessories	per set	160790.00	
5	800 mm diameter check valve with accessories	per set	217671.00	
6	900 mm diameter check valve with accessories	per set	292562.00	
7	1000 mm diameter check valve with accessories	per set	394057.00	
8	1100 mm diameter check valve with accessories	per set	530949.00	
9	1200 mm diameter check valve with accessories	per set	716700.00	
4440	Supplying, installing, testing and commissioning (SITC) Cast steel double flanged dual plate Check valve Class 300 conforming to API 594 of approved make of specified diameter and to withstand specified pressure with all accessories true to line and perfect linking with pipes on either side including loading, unloading, lifting and placing in correct position, cleaning ends, inserting gaskets into correct position, jointing pipes and valve to form water tight joints, cost of all jointing materials, machinery, labour etc. complete with all leads and lifts.			
1	400 mm diameter check valve with accessories	per set	84874.00	
2	500 mm diameter check valve with accessories	per set	105485.00	
3	600 mm diameter check valve with accessories	per set	132395.00	
4	700 mm diameter check valve with accessories	per set	178302.00	
5	800 mm diameter check valve with accessories	per set	239915.00	
6	900 mm diameter check valve with accessories	per set	323483.00	
7	1000 mm diameter check valve with accessories	per set	435204.00	
8	1100 mm diameter check valve with accessories	per set	587046.00	
9	1200 mm diameter check valve with accessories	per set	790896.00	
4441	Supplying, fixing and commissioning C.I Scour valve (sluice valve) of approved make body and seat ring of bronze PN (Pressure numbers) conforming to IS: 14846 of specified diameter and to withstand specified pressure with all accessories true to line and perfect			

Item No.	Description of Item	Unit	Rate	Remark
	linking with pipes on either side including loading, unloading, lifting and placing in position, cleaning ends, inserting gaskets into correct position, jointing pipes and valve to form water tight joint, cost of all jointing materials, machinery, labour etc. complete.			
A	For PN 1.0			
(i)	50mm dia	Each	2377.00	
(ii)	65mm dia	Each	2810.00	
(iii)	80mm dia	Each	3331.00	
(iv)	100mm dia	Each	4494.00	
(v)	125mm dia	Each	4923.00	
(vi)	150mm dia	Each	6631.00	
(vii)	200mm dia	Each	11629.00	
(viii)	250 mm dia	Each	17273.00	
(ix)	300mm dia	Each	21335.00	
(x)	350mm dia	Each	38097.00	
(xi)	400mm dia	Each	46138.00	
(xii)	450mm dia	Each	54103.00	
(xiii)	500mm dia	Each	89289.00	
(xiv)	600mm dia	Each	103806.00	
(xv)	700 mm dia.	Each	241255.00	
(xvi)	750 mm dia.	Each	260762.00	
(xvii)	800 mm dia.	Each	281115.00	
(xviii)	900 mm dia.	Each	368941.00	
(xix)	1000 mm dia.	Each	482809.00	
(xx)	1100 mm dia.	Each	779158.00	
(xxi)	1200 mm dia.	Each	1013901.00	
B	For PN-1.6			
(i)	50mm dia	Each	2555.00	
(ii)	65mm dia	Each	3022.00	
(iii)	80mm dia	Each	3582.00	
(iv)	100mm dia	Each	4834.00	
(v)	125mm dia	Each	5204.00	

Item No.		Description of Item	Unit	Rate	Remark
	(vi)	150mm dia	Each	7367.00	
	(vii)	200mm dia	Each	12924.00	
	(viii)	250 mm dia	Each	17900.00	
	(ix)	300mm dia	Each	23175.00	
	(x)	350mm dia	Each	40801.00	
	(xi)	400mm dia	Each	49766.00	
	(xii)	450mm dia	Each	58341.00	
	(xiii)	500mm dia	Each	146065.00	
	(xiv)	600mm dia	Each	169131.00	
	(xv)	700 mm dia.	Each	301027.00	
	(xvi)	750 mm dia.	Each	325355.00	
	(xvii)	800 mm dia.	Each	350769.00	
	(xviii)	900 mm dia.	Each	460528.00	
	(xix)	1000 mm dia.	Each	602836.00	
	(xx)	1100 mm dia.	Each	973231.00	
	(xxi)	1200 mm dia.	Each	1266618.00	
4442		Supplying, fixing and commissioning C.I Tamper proof Air valve of approved make body and seat ring of bronze PN (Pressure numbers) 1.0 conforming to IS: 14845 of specified diameter with all fixtures including cost of all materials, machinery, labour etc. complete.			
	1	80 mm diameter air valve with accessories	Per Set	15394.00	
	2	100 mm diameter air valve with accessories	Per Set	18007.00	
	3	150mm diameter air valve with accessories	Per Set	33146.00	
	4	200 mm diameter air valve with accessories	Per Set	35696.00	
4443		Supplying, fixing and commissioning C.I Tamper proof Air valve of approved make body and seat ring of bronze PN (Pressure numbers) 1.6 conforming to IS: 14845 of specified diameter with all fixtures including cost of all materials, machinery, labour etc. complete.			
	1	80 mm diameter Air Valve with accessories	per set	16254.00	
	2	100 mm diameter Air Valve with accessories	per set	20079.00	

Item No.		Description of Item	Unit	Rate	Remark
	3	150 mm diameter Air Valve with accessories	per set	33624.00	
	4	200 mm diameter Air Valve with accessories	per set	36333.00	
4444		Supplying and fixing Mild Steel (M.S.) Fabricated expansion joint confirming to IS 2062 E250BR etc. complete. For PN 10 to PN 16			
	1	300 mm dia	each	38182.00	
	2	350 mm dia	each	40909.00	
	3	400 mm dia	each	51136.00	
	4	450 mm dia	each	57955.00	
	5	500 mm dia	each	65455.00	
	6	600 mm dia	each	76364.00	
	7	700 mm dia	each	88637.00	
	8	750 mm dia	each	109092.00	
	9	800 mm dia	each	130682.00	
	10	900 mm dia	each	147728.00	
	11	1000 mm dia	each	176137.00	
	12	1100 mm dia	each	198864.00	
	13	1200 mm dia	each	215910.00	
4445		Supplying and fixing Mild Steel (M.S.) fabricated expansion joint confirming to IS 2062E250BR etc. complete. For PN 20 to PN 25			
	1	300 mm dia	each	47727.00	
	2	350 mm dia	each	51136.00	
	3	400 mm dia	each	63920.00	
	4	450 mm dia	each	72443.00	
	5	500 mm dia	each	81818.00	
	6	600 mm dia	each	95454.00	
	7	700 mm dia	each	110795.00	
	8	750 mm dia	each	136363.00	
	9	800 mm dia	each	163352.00	
	10	900 mm dia	each	184659.00	
	11	1000 mm dia	each	220170.00	

Item No.	Description of Item	Unit	Rate	Remark
12	1100 mm dia	each	248579.00	
13	1200 mm dia	each	269887.00	
14	1300 mm dia	each	228471.00	
15	1400 mm dia	each	245050.00	
16	1500 mm dia	each	261631.00	
17	1600 mm dia	each	278210.00	
18	1700 mm dia	each	294789.00	
19	1800 mm dia	each	311370.00	
20	1900 mm dia	each	327949.00	
21	2000 mm dia	each	344528.00	
22	2100 mm dia	each	361109.00	
23	2200 mm dia	each	377688.00	
24	2300 mm dia	each	394268.00	
25	2400 mm dia	each	406057.00	
26	2500 mm dia	each	427428.00	
4446	Providing and fixing cast iron double flanged single door reflux (non return) valves including jointing & testing with cost of jointing material such as bolts, nuts and rubber insertion all complete as per IS: 5312(Part 1)			
A	For PN 1.0			
(i)	50mm dia	per set	1202.00	
(ii)	65mm dia	per set	1561.00	
(iii)	80mm dia	per set	1895.00	
(iv)	100mm dia	per set	2657.00	
(v)	150mm dia	per set	4366.00	
(vi)	200mm dia	per set	7819.00	
(vii)	250mm dia	per set	11080.00	
(viii)	300mm dia	per set	15404.00	
(ix)	350mm dia	per set	28172.00	
B	Providing and fixing cast iron double flanged multi door reflux (non return) valves including jointing & testing with cost of jointing material such as bolts, nuts and rubber insertion all complete as per IS: 5312(Part 2)			

Item No.	Description of Item	Unit	Rate	Remark
I	For PN 0.6			
(i)	400 mm dia	per set	60653.00	
(ii)	450 mm dia	per set	76867.00	
(iii)	500mm dia	per set	107582.00	
(iv)	600mm dia	per set	160418.00	
(v)	700mm dia	per set	188605.00	
(vi)	750mm dia	per set	292390.00	
(vii)	800mm dia	per set	334910.00	
(viii)	900mm dia	per set	390718.00	
(ix)	1000mm dia	per set	447516.00	
(x)	1100mm dia	per set	504919.00	
(xi)	1200mm dia	per set	562949.00	
II	For PN 1.0			
(i)	400 mm dia	per set	67296.00	
(ii)	450 mm dia	per set	83511.00	
(iii)	500mm dia	per set	128037.00	
(iv)	600mm dia	per set	182073.00	
(v)	700mm dia	per set	252980.00	
(vi)	750mm dia	per set	306463.00	
(vii)	800mm dia	per set	362369.00	
(viii)	900mm dia	per set	418177.00	
(ix)	1000mm dia	per set	474951.00	
(x)	1100mm dia	per set	532365.00	
(xi)	1200mm dia	per set	590396.00	

D:- Estimation Purpose

Item No.	Description of Item	Unit	Rate	Remark
4447	Survey, planning, design and construction of underground pressurized pipe distribution network for micro irrigation system excluding the cost of rising & gravity mains and sprinkler/drip system to facilitate pressurized irrigation with duty 0.35 lit/sec/ha and working/operating pressure of minimum 6 kg/cm² with following provisions :- 1- HDPE pipe of category PE 100 PN 6 for diameter of pipe below 300 mm conforming to relevant IS codes. 2- MS/DI pipe for diameter 300 mm and above conforming to relevant IS codes. 3- MS pipes with 400 micron food grade epoxy/ 500 micron polyurethane for inner surface and shotcrete lining/ 3 LPE /1000 micron polyurethane on outer surface. 4- DI pipes with cement mortar lining with seal coat for inner surface and zinc coating on outer surface. The rates are inclusive of :- A- All works like excavation, preparation of bedding, laying, joining, backfilling testing and commissioning and testing of the system as per specifications and codal requirements., crossing of all natural drainage, nallas as per requirement of work complete. B- Providing and fixing all required valves, bends, manifolds, controls etc conforming to related BIS/European standards and including Supply, Erection and Commissioning, testing of Outlet Management System control at minimum 20/30 ha which should be able to control the flow as per desired minimum pressure of 2 kg/cm² at 1.0 hectare with uniform distribution of water to all the users irrespective of its location, elevation and distance from the water supply source including recording, measuring, monitoring and control with suitable power source and alternatively by solar power with three days back up capacity with no recurring			

Item No.		Description of Item	Unit	Rate	Remark
		cost for Communication with GSM/GPRS/RADIO etc. System should be kept in Protective Enclosure capable of giving vandalism alert and shall be SCADA compliant to the main control room operations including of all material, labour, lead, lift and all incidental charges. (This item shall be used for estimation purpose at DPR stage only. For estimation purpose the CCA in consideration has been suitably sub- divided in 5000/4800 ha boundaries beyond rising/gravity mains. In case the total CCA under consideration is less than 5000/4800 ha the cost of RM/GM (rising main/gravity main) shall deemed to be included in this item.)			
	A	Up to 2.5 ha Chak			
	1	From 5000 to 500 Ha chak.	Rs./ha	20174.00	
	2	500 Ha to 20 Ha chak.	Rs./ha	24993.00	
	3	20 Ha to outlet to 2.5 ha. (including Cost of SCADA, valves, bends, manifolds, controls, Outlet Management System, outlet with manual valve at two and half hectare i/c communications, Protective Enclosure and solar power with three days backup)	Rs./ha	23731.00	
	4	Add For 8 time Duty below 20 Ha. Chak	Rs./ha	3472.00	
	B	Up to 1.0 ha Chak			
	1	From 4800 to 300 Ha chak.	Rs./ha	28858.00	
	2	300 Ha to 30 Ha chak.	Rs./ha	15846.00	
	3	30 Ha to outlet to 1 ha. (including Cost of SCADA, valves, bends, manifolds, controls ,Outlet Management System, outlet with manual valve at one hectare i/c communications, Protective Enclosure and solar power with three days backup)	Rs./ha	33777.00	
	4	Add For 10 time Duty below 30 Ha Chak	Rs./ha	2702.00	

Item No.	Description of Item	Unit	Rate	Remark
4448	Survey, planning, design and Construction of underground pressurized pipe distribution network for micro irrigation system excluding the cost of rising & gravity mains and sprinkler/drip system to facilitate pressurized irrigation with duty 0.35 lit/sec/ha and working/operating pressure of minimum 6 kg/cm² with following provisions :- 1. HDPE pipe of category PE 100 PN 6 for diameter of pipe below 300 mm conforming to relevant IS codes. 2. DI for pipe for diameter 300 mm and above up to 600mm conforming to relevant IS codes. 3. MS/DI for pipe for diameter above 600mm conforming to relevant IS codes 4. MS pipes with 400 micron food grade epoxy/ 500 micron polyurethane for inner surface and shotcrete lining/3 LPE/1000 micron polyurethane on outer surface. 5. DI pipes with cement mortar lining with seal coat for inner surface and zinc coating on outer surface. The rates are inclusive of :- A- All works like excavation, preparation of bedding, laying, joining, backfilling testing and commissioning and testing of the system as per specifications and codal requirements., crossing of all natural drainage, nallas as per requirement of work complete. B- Providing and fixing all required valves, bends, manifolds, controls etc. conforming to related BIS/European standards and including Supply, Erection and Commissioning, testing of Outlet Management System control at minimum 20/30 ha which should be able to control the flow as per desired minimum pressure of 2 kg/cm² at 1.0 hectare with uniform distribution of water to all the			

Item No.	Description of Item	Unit	Rate	Remark
	users irrespective of its location, elevation and distance from the water supply source including recording, measuring, monitoring and control with suitable power source and alternatively by solar power with three days back up capacity with no recurring cost for Communication with GSM/GPRS/RADIO etc. System should be kept in Protective Enclosure capable of giving vandalism alert and shall be SCADA compliant to the main control room operations including of all material, labour, lead, lift and all incidental charges. (This item shall be used for estimation purpose at DPR stage only. For estimation purpose the CCA in consideration has been suitably sub- divided in 5000/4800 ha boundaries beyond rising/gravity mains. In case the total CCA under consideration is less than 5000/4800 ha the cost of RM/GM (rising/gravity mains) shall deemed to be included in this item.)			
A	Up to 2.5 ha Chak			
1	From 5000 to 500 Ha chak.	Rs./ha	20785.00	
2	500 Ha to 20 Ha chak.	Rs./ha	28011.00	
3	20 Ha to outlet to 2.5 ha. (including Cost of SCADA, valves, bends, manifolds, controls ,Outlet Management System, outlet with manual valve at two and half hectare i/c communications, Protective Enclosure and solar power with three days backup)	Rs./ha	23731.00	
4	Add For 8 time Duty below 20 Ha. Chak	Rs./ha	3439.00	
B	Up to 1.0 ha Chak			
1	From 4800 to 300 Ha chak.	Rs./ha	29632.00	
2	300 Ha to 30 Ha chak.	Rs./ha	16316.00	
3	30 Ha to outlet to 1 ha. (including Cost of SCADA, valves, bends, manifolds, controls ,Outlet Management System, outlet with manual valve at one hectare i/c communications, Protective Enclosure and solar power with three days backup)	Rs./ha	33777.00	
4	Add For 10 time Duty below 30 Ha Chak	Rs./ha	2677.00	

Item No.	Description of Item	Unit	Rate	Remark
4449	Design and construction of underground pipe distribution network for hose irrigation system, excluding rising main but with pressurized irrigation with duty of 0.45lit/sec/ha and of working/operation pressure not exceeding 4kg/cm² with following provisions :- 1. HDPE/DWC/SPIRAL DWC/ MS/DI pipe conforming to BIS codes and relevant international specification for pipes 63mm to 900mm diameter, 2. Pipes of MS/DI conforming to relevant BIS codes for pipe dia greater than 900mm. 3. MS pipes shall be with 400 micron food grade epoxy/500 micron polyurethane for inner surface and shotcrete/3 LPE/1000 micron polyurethane coating on outer surface. 4. DI pipes shall be with cement mortar lining with seal coat for inner surface and zinc coating on outer surface The rates are inclusive of :- a. All works like excavation, preparation of bedding, laying, joining, backfilling testing and commissioning and testing of the system as per specifications and codal requirements, crossing of all natural drainage, nallas as per requirement of work complete. b. Providing and fixing all required valves, bends, manifolds, controls etc conforming to related BIS/European standards and including Supply, Erection and Commissioning, testing of Outlet Management System with outlet duty of 0.45 lit/sec/ha up to minimum 30 ha which should be able to control the flow as per desired minimum pressure of 1.5 meter exit gradient at service outlet which shall consist of orifice type of nozzle able to deliver desired flow of 4.5 lit/sec/ha at highest point of field facilitating uniform distribution of water to all the users irrespective of its location, elevation and distance from the water supply source including recording, measuring, monitoring and control with			

Item No.		Description of Item	Unit	Rate	Remark
		suitable power source and alternatively by solar power with three days back up capacity with no recurring cost for Communication with GSM/GPRS/RADIO etc. System should be kept in Protective Enclosure capable of giving vandalism alert and shall be SCADA compliant to the main control room operations including of all material, labour, lead, lift and all incidental charges. (This item shall be used for estimation purpose at DPR stage only. For estimation purpose the CCA in consideration has been suitably sub-divided in 4800 ha boundaries beyond rising/gravity mains. In case the total CCA under consideration is less than 4800 ha the cost of gravity main (GM) shall be deemed to be included in this item)			
	1	From 4800 to 300 Ha chak	Rs./ha	32351.00	
	2	From 300 ha to 30 Ha chak	Rs./ha	10351.00	
	3	300 Ha to outlet to 1 ha. (including Cost of SCADA, valves, bends, manifolds, controls, Outlet Management System, Outlet with manual valve at one hectare with 10 times duty i/c communications)	Rs./ha	32366.00	
		TOTAL	Rs./ha	75068.00	

E: Micro Irrigation

Item No.	Description of Item	Unit	Rate	Remark
4450	Providing, fixing and testing lateral including jointing with cost of jointing, transportation, labour charges lead and lift. etc complete.as per IS 12786 : 1989			
a.	12mm diameter Class II	Each	9.00	
b.	16mm diameter Class II	Each	12.01	
c.	20mm diameter Class II	Each	22.54	
d.	25mm diameter Class II	Each	23.00	
e.	32mm diameter Class II	Each	53.00	
4451	Providing, fixing and testing Online Dripper including jointing with cost of jointing, transportation, labour charges lead and lift. etc complete. as per IS 13487: 1992			
a.	Non Pressure Compensating-4 & 8 LPH	Each	3.72	
b.	Pressure Compensating-4 & 8 LPH	Each	4.51	
4452	Providing, fixing and testing Plain Emitting Pipe (Integral Drip Lateral PC Drip line) including jointing with cost of jointing, transportation, labour charges lead and lift. etc. complete. as per IS 13488 : 2008			
(i)	12mm dia for 1 to 3 LPH			
a.	30 CM - Spacing	Each	11.71	
b.	40 CM – Spacing	Each	11.30	
c.	50 CM – Spacing	Each	11.18	
d.	60 CM – Spacing	Each	10.95	
(ii)	12mm dia for 1 to 2.8 LPH			
f.	30 CM - Spacing	Each	10.19	
g.	40 CM – Spacing	Each	9.90	
h.	45 CM – Spacing	Each	9.66	
i.	50 CM – Spacing	Each	9.53	
j.	60 CM – Spacing	Each	9.34	
(iii)	16mm dia for 1 to 3 LPH			
	20 CM - Spacing	Each	15.53	
l.	30 CM – Spacing	Each	14.37	
m.	40 CM – Spacing	Each	13.68	
n.	50 CM – Spacing	Each	13.48	
o.	60 CM – Spacing	Each	13.28	

Item No.	Description of Item	Unit	Rate	Remark
	(iv) 16mm dia for 0.6 to 3 LPH			
	p. 10 CM – Spacing	Each	35.58	
	q. 20 CM – Spacing	Each	21.58	
	r. 30 CM – Spacing	Each	19.52	
	s. 40 CM – Spacing	Each	18.98	
	t. 50 CM – Spacing	Each	18.61	
	u. 60 CM - Spacing	Each	18.48	
4453	Providing, fixing and testing Micro Tube including jointing with cost of jointing, transportation, labour charges lead and lift. etc complete. as per IS 14482 : 1997			
	a. 5mm barbed connector	Each	3.60	
	b. 7mm barbed connector	Each	6.60	
	c. 13mm barbed connector	Each	24.36	
4454	Providing, fixing and testing Control Valve including jointing with cost of jointing, transportation, labour charges lead and lift. etc complete.			
	a. PP 32mm	Each	88.00	
	b. PP 50mm (Plain)	Each	356.00	
	c. PP 50mm (Threaded)	Each	582.00	
	d. PP 63mm (Plain)	Each	384.00	
	e. PP 63mm (Threaded)	Each	686.00	
	f. PP 75mm (Plain)	Each	753.00	
	g. PP 75mm (Threaded)	Each	1672.00	
	h. PP 90mm (Plain)	Each	1779.00	
	i. PP 90mm (Threaded)	Each	2310.00	
	j. PP 110mm (Plain)	Each	2737.00	
	k. PP 110mm (Threaded)	Each	2790.00	
4455	Providing, fixing and testing Flush Valve including jointing with cost of jointing, transportation, labour charges lead and lift. etc complete.			
	a. 50mm	Each	85.00	
	b. 63mm	Each	85.00	

Item No.	Description of Item	Unit	Rate	Remark
4456	Providing, fixing and testing Throttle Valves including jointing with cost of jointing, transportation, labour charges lead and lift. etc complete. as per IS 778 : 1984 & 1239			
	a. 40mm	Each	1232.00	
	b. 50mm	Each	1848.00	
	c. 60mm	Each	3422.00	
	d. 75mm	Each	4516.00	
4457	Supplying, installation and testing M.S. Sand Filter with the base frame cap, jointing of pipes (incoming and outgoing) with valves etc. duly painted with cost of transportation, labour charges lead and lift. etc complete.			
	a. 10-20m3/HRx40mm dia	Each	14172.00	
	b. 20-30m3/HRx50mm dia	Each	18176.00	
	c. GF 3.50M3/HR WITH BW ASSLY BIS-IND	Each	31050.00	
	d. GF ST. 3.50M3/HR (50mmx2) WITH PPBV-IND	Each	41080.70	
	e. GF ST. 3.60M3/HR (2.5"x2) WITH B.FLY VALVE	Each	59534.82	
	f. GF ST. 4.80M3/HR (50mmx4) WITH PPBV-IND	Each	86355.52	
	g. GF ST. 4.100M3/HR (75mmx2) WITH PPBV-IND	Each	69930.82	
	h. GF ST. 4.100M3/HR (75mmx2) WITH B.FLY VALVE	Each	72011.64	
	i. GF ST. 5.150M3/HR (75mmx3) WITH B.FLY BOM	Each	117343.30	
4458	Supplying, installation and testing of water tight M.S. Tank (Fertilizer Tank) with the base frame cap, jointing of pipes (incoming and outgoing) with valves etc. duly painted with cost of transportation, labour charges lead and lift. etc complete.			
	A 30 Ltr.	Each	4468.00	
	B 60 Ltr.	Each	5632.00	
	C 90 Ltr.	Each	7137.00	
	D 120 Ltr.	Each	8300.00	
	E 220 Ltr.	Each	10469.00	
4459	Providing, fixing and testing Ventury Injector Assembly including jointing with cost of transportation, labour charges lead and lift. etc complete. as per IS 14483 : Pt. I/97 1997			
	a. 20mm (Indian)	Each	2460.00	
	b. 20mm (Imported)	Each	6129.00	

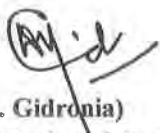
Item No.		Description of Item	Unit	Rate	Remark
	c.	50mm	Each	5757.00	
4460		Providing, fixing and testing By Pass Assembly including jointing with cost of jointing, transportation, labour charges lead and lift. etc complete.			
	a.	50mmx50mm	Each	1530.00	
	b.	75mmx75mm	Each	2760.00	
4461		Providing, fixing and testing Air Release Valve including jointing with cost of jointing, transportation, labour charges lead and lift. etc complete. as per IS 14845			
	a.	12mm (VACUUM BREAKER VALVE 0.5" PLASTIC-IND)	Each	156.00	
	b.	25mm (AIR VACUUM RELEASE VALVE AV10-1"-IND)	Each	438.00	
	c.	NAVC 10-50mm COMBINATION AV PN10 BSP	Each	5506.48	
	d.	NAVC 16-50mm COMBINATION AV PN16 BSP	Each	8352.63	
	e.	NAVK 10-25mm KINETIC AV PN10 BSP	Each	1156.76	
	f.	NAVK 10-50mm KINETIC AV PN10 BSP	Each	1876.52	
4462		Providing, fixing and testing Butter Fly Valve including jointing with cost of jointing, transportation, labour charges lead and lift. etc complete. as per IS 13095 : 1991			
	a.	50mm	Each	1548.00	
	b.	60mm	Each	1878.00	
	c.	75mm	Each	2080.00	
	d.	100mm	Each	2617.00	
	e.	125mm	Each	3230.00	
	f.	150mm	Each	4585.00	
4463		Providing, fixing and testing Pressure Release Valve including jointing with cost of jointing, transportation, labour charges lead and lift. etc complete.			
	a.	DOROT 40mm S100 BSP-ANG.C.I. QR-2W-6510 (1.5" Metal)	Each	19974.00	
	b.	NET 100 A CI 50mm QRV BSP 2W POLY Blue (2"Metal)	Each	19974.00	
4464		Providing, fixing and testing Non Return Valve (NRV) including jointing with cost of jointing, transportation, labour charges lead and lift. etc complete. as per IS 778 : 1984			
	a.	50mm	Each	1677.00	
	b.	60mm	Each	2012.00	

Item No.	Description of Item	Unit	Rate	Remark
	c. 75mm	Each	2381.00	
	d. 100mm	Each	3354.00	
4465	Providing, fixing and testing Pressure Gauge including jointing with cost of jointing, transportation, labour charges lead and lift. etc complete.			
	a. 50mm Regular	Each	242.00	
	b. 50mm Glycerine	Each	625.00	
4466	Providing, fixing and testing Barbed including jointing with cost of jointing, transportation, labour charges lead and lift. etc complete.			
	(i) Barbed Start Connector			
	a. 12mm	Each	2.00	
	b. 16 mm	Each	2.00	
	(ii) Barbed Nipple/Joiner			
	a. 12 mm	Each	2.00	
	b. 16 mm	Each	3.04	
	c. 17x17 mm	Each	3.23	
	d. 20 mm	Each	6.50	
	(iii) Barbed End Cap			
	a. 12mm	Each	2.50	
	b. 16 mm	Each	2.50	
	c. 20 mm	Each	5.04	
	(iv) Barbed Tee			
	a. 12 mm	Each	3.04	
	b. 16 mm	Each	3.92	
	(v) Barbed Reducer			
	a. 16x12 mm	Each	2.00	
	b. 17x12 mm	Each	3.10	
	c. 17x16 mm	Each	3.23	
	d. 20x16 mm	Each	18.50	
4467	Providing, fixing and testing Micro Connector including jointing with cost of jointing, transportation, labour charges lead and lift. etc complete.			
	a. Barb/Female	Each	2.40	
	b. Barb/Male	Each	2.40	
4468	Providing, fixing and testing Micro Sprinkler & Fogger including jointing with cost of jointing, transportation, labour charges lead and lift. etc			
	a. Gyronet Head 27lph/40lph/70lph/120lph	Each	24.00	

Item No.	Description of Item	Unit	Rate	Remark
	b. Gyronet jet Head 40lph/58lph/70lph/90lph	Each	27.00	
	c. Fogger with anti leak stake 1 m Extension tube and take off	Each	155.00	
	d. Spinnet Sprinkler 40-200 LPH	Each	100.00	
	e. Imported Micro Sprinklers with complete assembly Consisting of Micro Sprinkler, Stake 60cm Extension tube and take off/tee	Each	70.00	
4469	Providing, fixing and testing MLNL Sprinkler & Accessories including jointing with cost of jointing, transportation, labour charges lead and lift. etc complete. as per IS 12232 Part-1			
	a. MINI SPRINKLER 450 P/C WITH ASSLY W/O RO	Each	298.16	
	b. D-NET 5801/11 HEAD PC	Each	208.30	
	c. PP NIPPLE 32MM COMPRESSION – PUSH TYPE	Each	64.94	
	d. PP END CAP 32MM COMPRESSION – PUSH TYPE	Each	46.00	
	e. PP ELBOW 32MM COMPRESSION % MALE THRD PUSH TYPE	Each	67.04	
	f. PP SERVICE SADDLE 75MM % 32MM (1")	Each	105.52	
	g. MIC METAL ROD 2MM DIA, 120 CM LENGTH – IND	Each	90.64	
	h. MALE CONNECTOR 9/12MM AUTOMATE-IND	Each	3.38	
	i. FEMALE CONNECTOR 9/12MM AUTOMATE-IND	Each	3.38	
	j. M/F ADAPTOR ½" ATM	Each	8.12	
	k. PVC TUBE 13MM 1.2M LONG	Each	24.36	
	l. DUMMY PLUG 9/12MM	Each	3.38	
	m. PP TEE 32MM ALL SIDE MALE THREAD	Each	73.06	
	n. PP MALE THRD ADOPTER 32MM (1") – PUSH TYPE	Each	43.30	
	o. PP BALL VALVE 1"- 32 MM FOR COMPRESSION FIT	Each	226.32	
	p. PP SERVICE SADDLE 90MM X 32 MM (1") PL	Each	119.06	
4470	Providing Drill bit all complete.			
	a. Manual Drill Bit	Each	523.32	
	b. Ejecto/Metal Punch	Each	150.00	
	c. Punch 8mm Plastic (India)	Each	343.00	
4471	Providing, fixing and testing Pressure Gauge Adaptor including jointing with cost of jointing, transportation, labour charges lead and lift. etc complete.			
	a. Adaptor	Each	60.00	

Item No.	Description of Item	Unit	Rate	Remark
4472	Providing, fixing and testing Dummy Plug including jointing with cost of jointing, transportation, labour charges lead and lift. etc complete.			
4473	a. Dripper plug/ Groove plug/Dummy Dripper	Each	1.50	
4474	Providing Agronomy Consultancy Service Charge (G.S.T. will be Extra) including cost of material all complete.	Rs/Cases	2000.00	
4475	Installation charges/Ha. (G.S.T. will be Extra)	Rs/Ha.	2000.00	
4475	Capacity building, Social awareness, training of personnel's/ cultivators by social scientist/ (agency/ NGOs etc.) for 5 years including all expenses Such as conveyance, stationary, photography, documentation, fooding, lodging, etc. Activities involved:- A. Component of survey : -Listing of beneficiaries i.e. category wise (SC /ST /OBC/Gen/H/TG) small and marginal farmer, Soil health card. -Agricultural Statistics i.e. area wise detail of mono crop, double crop, multi crop, Kharif and rabi crops recommendation along with soil health card. -Present crop pattern details including bench marking. -Average input cost of crops at present and after completion of project. -Community survey & community micro planning -Community need based action plan (with presence of at least 70% beneficiaries). -Geotagging of structure & distribution networks for micro irrigation system. B. Awareness campaign: -Utilization of existing Govt. buildings if any, for training & awareness programme of farmers. If not available then building be constructed nearer to village. -Training of beneficiaries, WUA in order to adopt micro irrigation. - Formation of beneficiaries' user committee (or WUA). -Five year awareness building, motivation, community mobilisation, follow up with community	Rs/Ha./ Year	25,000.00	

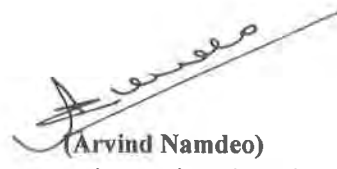
Item No.	Description of Item	Unit	Rate	Remark
	C. Impact assessment -Conduct Third party Assessment by Govt Body/ Govt approved National / State level Firm/ Institute After Construction of project at the end of third year after second stage of micro planning. -Social audit of scheme involving min 60% of the beneficiaries. D. Operation, Maintenance & Handover (Micro plan Committee) Smooth hand over of Project to the beneficiaries user committee or (WUA) for Operation & Maintenance.			



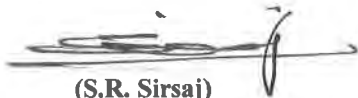
(D.N. Gidronia)
Executive Engineer/Member
Office of the Engineer-in-Chief
Water Resources Department
Chhattisgarh, Raipur



(Pranab Kumar Pal)
Executive Engineer/Member
E/M Heavy Plant & Machinery Division
Raipur



(Arvind Namdeo)
Executive Engineer/Member
Office of the Engineer-in-Chief
Water Resources Department
Chhattisgarh, Raipur



(S.R. Sirsaj)
Superintending Engineer/Member
Office of the Engineer-in-Chief
Water Resources Department
Chhattisgarh, Raipur



(B.R. Ladia)
Superintending Engineer (Bodhi)/Member
Office of the Engineer-in-Chief
Water Resources Department
Chhattisgarh, Raipur



(A.K. Badhiye)
Superintending Engineer
(M.I.S.)/Member
Office of the Engineer-in-Chief
Water Resources Department
Chhattisgarh, Raipur

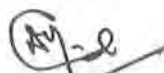


(Celestine Xaxa)
Chief Engineer/(Monitoring)/President
Office of the Engineer-in-Chief
Water Resources Department
Chhattisgarh, Raipur

Chapter 18

PAINTING

Item No.	Description of Item	Unit	Rate	Remark
1859	Coating of 100% solids direct to metal rigid Polyurethane coating as per AWWA C222 standards on spillway gates, sluice gates, canal gates (both Vertical & Radial) Stop log, skin plate,(Upstream & downstream) with Vertical Stiffeners, DI & MS pipe of LIS for which surface preparation by ballast cleaning with copper slag to near white metallic surface (as per SSPC SP-10/ NACE 2 1/2) with anchor profile of 75 microns, coating to be achieved by one or more coat of 100% solids. Solvent free direct to metal polyurethane coating using plural component airless spray system, such as graco, gusmer, wiwa cosmo star etc. to provide dry film thickness off 500, +5 microns nominal SSPC -PA 2. This will include expense on mobilization & demobilization of equipment.	sq m	880.00	



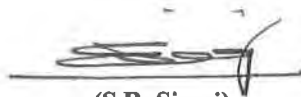
(D.N. Gidronia)
Executive Engineer/Member
Office of the Engineer-in-Chief
Water Resources Department
Chhattisgarh, Raipur



(Pranav Kumar Pal)
Executive Engineer/Member
E/M Heavy Plant & Machinery Division
Raipur



(Arvind Namdeo)
Executive Engineer/Member
Office of the Engineer-in-Chief
Water Resources Department
Chhattisgarh, Raipur



(S.R. Sirsaj)
Superintending Engineer/Member
Office of the Engineer-in-Chief
Water Resources Department
Chhattisgarh, Raipur



(B.R. Ladia)
Superintending Engineer (Bodhi)/Member
Office of the Engineer-in-Chief
Water Resources Department
Chhattisgarh, Raipur



(A.K. Badhiye)
Superintending Engineer
(M.I.S.)/Member
Office of the Engineer-in-Chief
Water Resources Department
Chhattisgarh, Raipur



(Celestine Xaxa)
Chief Engineer/(Monitoring)/President
Office of the Engineer-in-Chief
Water Resources Department
Chhattisgarh, Raipur

CHAPTER - 26

SUPPLY AND ERECTION OF GATE

Item No.	Description of item	Unit	Rate	Remarks
2613	Providing machining and assembling of Iron Items for gates as wedges, couplings, guides, assembly complete with testing, including cost of all materials, with machinery, labour, cutting, aligning, welding, finishing, cleaning, etc., complete			
1.	Wedges	kg	95.00	
2.	Coupling, Guides	kg	99.00	
2614	Providing Fabrication, machining and assembling of different types of MS Anchors/MS Anchors/MS chuck nut for Gates assembly, complete with testing ,including cost of all materials, with machinery, labour, cutting, aligning, welding, finishing, cleaning, etc., complete as per specifications			
1.	MS Chuck Nut	kg	119.00	
2.	U,J ,H,I type anchors	kg	71.00	
3.	Anchor bolts with two nut and two washers	kg	86.00	
2615	Providing Casting machining and assembling of Head stocks assembly with handle complete for operating gates , ,including cost of all materials as head stock body, Nut, Worm wheel, Gear, Bush ,Pin ,operating handle etc. with machinery, labour, cutting, aligning, welding, finishing, cleaning, etc., complete			
a.	Head Stock Worm & wheel type coupled set 63mm dia. threaded Nut two tone capacity, approx-322 kg weight	kg	179.00	
b.	Head Stock Worm & wheel type, single set, 63mm dia. or 56mm dia. one tone capacity ----approx-175 kg weight	kg	156.00	
c.	Head Stock screw jack type 50mm dia. threaded Nut , 0.750 tonne capacity----- approx-45 kg weight	kg	120.00	
d.	Head Stock screw jack type 45mm dia or 40mm dia threaded Nut 0.700 tonne capacity ----- approx-42 kg	kg	119.00	
e.	Head Stock screw jack type 36mm dia. threaded Nut 0.400 tonne capacity----- approx-19.5 kg	kg	165.00	
2616	Straightening and machining work of structural steel sections (departmental materials) complete job , with all machinery as planner machine etc., labour, cutting, aligning, finishing, cleaning, etc., complete as per specifications			
1.	Straightening work any steel sections	kg	3.00	
2.	Machining work of structural steel sections like as Guide T, Track etc. with planner machine	sqm	2,000.00	

Item No.	Description of item	Unit	Rate	Remarks
2617	Providing ,fabrication, threading (Square threading as required) , machining, straightening of MS Round bar complete with testing ,including cost of all materials, with machinery, labour, cutting, aligning, welding, finishing, cleaning, etc., complete as per specifications			
a.	Rate for double start square threading for 63mm dia. round bar with materials	kg	109.00	
b.	Rate for double start square threading for 63mm dia. round bar without materials	m	1,373.00	
c.	Rate for single start square threading for 63mm dia. round bar with materials	kg	101.00	
d.	Rate for single start square threading for 63mm dia. round bar without materials	m	1,282.00	
e.	Rate for double start square threading for 56mm dia. round bar with materials	kg	97.00	
f.	Rate for double start square threading for 56mm dia. round bar without materials	m	1084.00	
g.	Rate for single start square threading for 56mm dia./50mmdia /45mm dia round bar with materials	kg	98.00	
h.	Rate for single start square threading for 56mm dia./50mmdia /45mm dia round bar without materials	m	770.00	
i.	Rate for single start square threading for 36mm dia./32mm dia round bar with materials	kg	93.00	
j.	Rate for single start square threading for 36mm dia./32mm dia round bar without materials	m	390.00	
2618	a Providing, Fabrication, machining with straightening work of Guide Tee, Track, Sealing frame, Leaf frame or any part of gates, complete as per drawing with testing, including cost of all materials, machinery, labour, tools and tackles cutting, aligning, welding, finishing, cleaning, etc., Applying one coat of zinc rich epoxy primer and two coat of cold applied coal tar epoxy paint, etc., complete as per specifications and approved drawings with all leads and lifts , including packing and forwarding, transportation charges for structural steel components and other materials.			
1.	Rate of work with all materials	kg	69.00	
2.	Rate of work without materials	kg	21.00	

Item No.		Description of item	Unit	Rate	Remarks
	b	Erection work of fabricated gates any parts of gates and any accessories of gates, complete as per drawing with testing, including cost of all materials required for completing the job like welding rods, tools tackles etc., with machinery, labour, tools and tackles cutting, aligning, welding, finishing, cleaning, etc. applying one coat of zinc rich epoxy primer and two coats of cold applied coal tar epoxy paint, etc., complete as per specification and approved drawings with all lead and lifts, including packing & forwarding transportation charges for structural steel components and other materials.	kg	25.00	
2619		Providing of MS Nut Bolts of required size and type, as per specifications with testing, including all lead and lifts, packing & forwarding charges for all components etc. complete.	kg	67.00	
2620		Providing of High tensile MS Nut Bolts of required size and type, as per specifications with testing, including all lead and lifts, packing & forwarding charges for all components etc. complete.	kg	90.00	
2621		Providing of Stainless steel counter shank nut bolts with washer of required size and type, as per specifications with testing, including all lead and lifts, packing & forwarding charges for all components etc. complete.	kg	313.00	
2622		Providing of Rubber seals as per IS:11855 for dam sluice, canal, barrage, stop dam, anicut of required size and type and specifications with testing, including packing & forwarding charges for all components etc. complete.			
	a.	Rubber seal musical note type 75mm x33mm x12mm (33mm Bulb) uncladed	m	430.00	
	b.	Rubber seal musical note type 75mm x33mm x12mm (33mm Bulb) Teflon claded	m	1090.00	
	c.	Rubber seal musical note type 100mm x44mm x14mm (44mm Bulb) uncladed	m	720.00	
	d.	Rubber seal musical note type 100mm x44mm x14mm (44mm Bulb) Teflon claded	m	1,620.00	
	e.	Rubber seal Z type 100mm x55mm x25mm x20mm (L-55mm/25mm) uncladed	m	920.00	
	f.	Rubber seal Z type 120mm x75mm x35mm x20mm (L-75mm/35mm) uncladed	m	1,050.00	
	g.	Rubber seal Z type 150mm x75mm x35mm x20mm (L-75mm/35mm) uncladed	m	1,230.00	
	h.	Rubber seal Flat type 75mm x12mm uncladed	m	256.00	
	i.	Rubber seal Flat type 80mm x10mm uncladed	m	275.00	
	j.	Rubber seal Flat type 100mm x14mm uncladed	m	427.00	
	k.	Rubber seal Flat type 150mm x20mm uncladed	m	915.00	

Item No.		Description of item	Unit	Rate	Remarks
	l.	Rubber seal Corners musical note type 100mm x44mm x14mm (44mm bulb),Teflon cladded inside bulb or outside bulb 300mm x300mm long ,set of two pieces	m	3,240.00	
	m.	Rubber seal Corners musical note type 100mm x44mm x14mm (44mm bulb),Teflon cladded inside bulb or outside bulb 300mm x300mm long, set of two pieces	m	1,440.00	
2623		Supplying and fixing bulb type (musical note) uncladded rubber seals and stainless steel counter sunk bolts/ nuts/ washers of approved quality including cost of all materials, labour, removing of existing worn-out/damaged bulb type rubber seals from gates, cleaning surface, making holes in new rubber seals, fixing new seals, bolts, nuts, washers tightly in position, labour, scaffolding etc. complete.	m	1,600.00	
2624		Supplying and fixing bulb type teflon cladded rubber seals and stainless steel counter sunk bolts, nuts, washers of approved quality including cost of all materials, removing of existing worn-out/ damaged bulb type rubber seals from gates, cleaning surface, making holes in new seals, fixing new rubber seals, bolts, nuts, washers tightly in position, labour, scaffolding etc. complete.	m	2,160.00	
2625		Supplying and fixing flat rubber seals and stainless steel counter sunk bolts/ nuts/ washers of approved quality including cost of all materials, labour, removing of existing worn-out/ damaged flat type rubber seals from gates, cleaning surface, making holes in new seals, fixing new rubber seals/ bolts/ nuts/ washers tightly in position, scaffolding etc. complete.	m	1,157.00	
2626		Supplying and fixing Z-type rubber seals and stainless steel counter sunk bolts/ nuts/ washers of approved quality including cost of all materials, labour, removing existing worn-out/ damaged Z- type rubber seals from gates, cleaning surface, making holes in new seals fixing new seals bolts/ nuts/ washers tightly in position, scaffolding etc. complete.	m	2,428.00	
2627		Providing and fixing 100 x 50 mm 10 gauge non- galvanized weld mesh to concrete/ masonry surface including cost of all materials, machinery, labour, fixing wire mesh to exposed reinforcement bars or by driving rafter nails, scaffolding etc. complete.	sqm	260.00	
2628		Providing & filling replacing gear oil of approved quality up to the required gauge level for Reduction gear unit of hoists/ gantry cranes including cost of all materials, machinery, labour etc. complete.	litre	283.00	
2629		Providing and applying grease of approved quality to gate and hoist components requiring greasing as part of annual maintenance using grease gun wherever necessary including cost of all materials, machinery, labour, scaffolding etc. complete.	kg	360.00	

Item No.	Description of item	Unit	Rate	Remarks
2630	Providing and applying cardium compound of approved quality to wire ropes of hoists/ gantry cranes as part of annual maintenance including cost of all materials, machinery, labour etc. complete.	kg	163.00	
2631	Providing and filling/ replacing hydraulic oil of approved quality up to the required gauge level including cost of all materials, machinery, labour etc. complete.	liter	148.00	
2632	Cleaning gates/ hoists/ embedded parts for re- painting by removing rust, oil, paint, grease etc., by using wire brush, scrubber, rust remover and applying a coat of rust inhibitive compound etc., complete.	sqm	48.00	
2633	Transportation charges with utility van and with four men (two helper , one welder and one fitter) with welding parts, cutting items and extra tools and tackles required for fitting work gate parts and head etc.			
	1. upto 50 km	Each	4,000.00	
	2. for above 50km, per Km extra charge	Each	50.00	
2634	Oiling, Greasing work of gate parts like Headstock, Headstock parts, Roller Assembly, Operating Rod, Sealing Frame, Guide Tee with all labor tools & tackles etc & material for vertical lift sliding type fix wheel gate			
	1. For gate size up to 1.0m x1.0m	Each job	1200.00	
	2. For gate size up above 1.0m x1.0m	Each job	2000.00	
2635	Labour charge for Test and trial of Anicut/Barrage M.S.shutters including fixing head stock check nuts of desired size as per site requirement with removal of trees, shrubs and other floating materials etc. on bay and gate groove cleaning of gate grooves, sill, beam, fixing in position steel shutters for barrages/Anicuts including all relevant required work.	per Sqm of gate size	965.00	
2636	Hiring charges of mobile crane for Transportation of heavy machineries equipment's, plants etc. and their components, materials, loading & unloading work, at different project sites Upto 12 ton crane.	Per hour (including journey time to reach and return from site)	800.00	
2637	Providing and installation of new gate frame of M.S. suitable for gate size with M.S. angles & M.S. plates not less then 8 mm in thickness, anchorages and sealing arrangement with required civil work, complete as per gate size.			
	1 Upto 0.25 Sqm	each	9500.00	
	2 0.25-1.00 Sqm	each	11800.00	

Item No.	Description of item	Unit	Rate	Remarks
3	1.00-2.00 Sqm	each	14900.00	
4	2.00-3.50Sqm	each	15850.00	
5	3.50-5.00 Sqm	each	17650.00	
2638	Providing and erection of complete gate shutter with 8 mm thickness skin plate M.S. & stiffeners made of angles and channels not less then 8 mm complete as per gate size.			
1	Upto 0.25 Sqm	Per sqm	30500.00	
2	0.25-1 Sqm	Per sqm	29600.00	
3	1.00-2.00 Sqm	Per sqm	28900.00	
4	2.00-3.50Sqm	Per sqm	27800.00	
5	3.50-5.00 Sqm	Per sqm	27250.00	



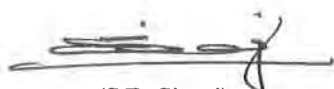
(D.N. Gidronia)
Executive Engineer/Member
Office of the Engineer-in-Chief
Water Resources Department
Chhattisgarh, Raipur



(Pranab Kumar Pal)
Executive Engineer/Member
E/M Heavy Plant & Machinery Division
Raipur



(Arvind Namdeo)
Executive Engineer/Member
Office of the Engineer-in-Chief
Water Resources Department
Chhattisgarh, Raipur



(S.R. Sirsaj)
Superintending Engineer/Member
Office of the Engineer-in-Chief
Water Resources Department
Chhattisgarh, Raipur



(B.K. Ladia)
Superintending Engineer (Bodhi)/Member
Office of the Engineer-in-Chief
Water Resources Department
Chhattisgarh, Raipur



(A.K. Badhiye)
Superintending Engineer
(M.I.S.)/Member
Office of the Engineer-in-Chief
Water Resources Department
Chhattisgarh, Raipur



(Celestine Xaxa)
Chief Engineer/(Monitoring)/President
Office of the Engineer-in-Chief
Water Resources Department
Chhattisgarh, Raipur