

ANNEXURE 1
BILLS OF QUANTITIES

Bill of Quantities for Water Supply work for DMA 1 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Material Section							
1	<p>Providing and supplying at site of work DI Pipes (push on joints pressure pipes of DI of following class and Dia meters confirming to the indian Standard specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality)excluding GST levied by GOI and GOM in all respect including Thid party inspection charges of TPI Agency approved by the MJP including transit insurance,Railway frieght,unloading from railway wagon,loading in to the truck transportation to departmental store, unloading,stacking etc. completed as directed by engineer-in-charge(IS:1536:2001 for pipes and IS:158:1969 and 15:12820:1989 or latest edition/revision with amendments for rubber gaskets).(IS:8329:2000 latest version).</p>						
	MJP 18-19,Page No.86, item no. 3						
	D.I. K-9						
i)	100mm DI K9	Rmt	156	793.00			123866.60
ii)	150mm DI K9	Rmt	170	1151.00			195324.70
iii)	300mm DI K9	Rmt	108	2576.00			277692.80
iv)	350mm DI K9	Rmt	250	3268.00			816019.60
v)	400mm DI K9	Rmt	217	3810.00			825627.00
vi)	450mm DI K10	Rmt	149	4640.00			691360.00
2	<p>Providing and supplying at site of work double flange sluice valve confirming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.</p>						

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Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP 18-19,Page No.234, item no. (2a)						
	Sluice Valves PN - 1 (Without bypass arrangement)						
i)	100mm	No.	30.00	5807.00			174210.00
ii)	150mm	No.	5.00	8709.00			43545.00
iii)	250mm	No.	5.00	24407.00			122035.00
	For flow meter & pressure reducing valves						
i)	150mm	No.	2.00	8709.00			17418.00
ii)	600mm	No.	2.00	137770.00			275540.00
3	Providing and supplying kinetic double orifice type air valves confirming to IS 14845 as per MJP's standard specifications having small orifice elastic ball resting on a gun metal orifice nipple, large orifice vulcanite ball seating on moulded seat ring, with built-in kinetic features, isolating sluice valve mounted in horizontal position and operated by wheel gearing, inlet face and drilled, including insurance, third party inspection charges, loading, unloading, transportation upto departmental stores, excluding GST levied by GOI and GOM in all respect etc. complete.						
	MJP 18-19,Page No.246, item no. 9						
	b) Kinetic Air valve flanged, Type PN - 1.6						
	200mm	No.	1.00	30341.00			30341.00
	Pressure Loggers						
4	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	2.00	55000.00			110000

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Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	(Vendor supply item)						
	Residual chlorine analyser						
5	Design, installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	3.00	191451.00			574353
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
6	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and tranportation to store/site, loading, unloading and stacking, all taxes , etc complete.						
	a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269	No.					878967.21
	b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	Kg					
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg					

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Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Battery Operated electromagnetic flow meter						
7	Providing, erecting, testing and commissioning of battery operated electromagnetic flow meter built in GSM (with Simcard charges for 36 months validity) of various diameters as per the following specifications including 36 months guarantee etc complete.						
	MJP ELEC/MECH,Page No.93, item no. WM4						
i)	150 mm line size	No.	1	123503		123503	123503
	Pressure Reducing Valve						
8	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						
	MJP ELEC/MECH,Page No.106, item no. SA8						
	400 mm dia	No.	1	536270			536270

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Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Mechanical Type Meters.						
9	A) Domestic Meters						
	b) Multijet meters						
	Providing, installing and giving satisfactory field testing of						
	Domestic water meter, horizontal inferential multijet type						
	with magnetic drive and dry dial suitable for ambient 50° C						
	Temperature duly sealed against tampering complete with						
	couplings at both ends and conforming to class B as per						
	ISO 4064 along with manufacturer's test certificate and						
	guarantee certificate, including cost of all materials and						
	labour etc with OIML , MID certification for Abroad and						
	FCRI for India including 36 months guarantee etc complete						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 1 b, Page no. 74)						
	15mm	No.	146	1755			256230
	20mm	No.	3	2137			6411
	25mm	No.	2	3619			7238
	40mm	No.	20	6581			131620
10	Ultrasonic Water Meter						
	A) AMR Domestic Meters						
	Providing, installing and giving satisfactory field testing of						
	domestic battery operated AMR water meters with no						
	measurement of air along with manufacturing test certificate						
	and guarantee certificate with battery life of minimum 10						
	years with GSM / RF technology for communication to server						
	with PC software including 36 months guarantee, etc.						
	complete.						

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	(MJP Elec/Mech CSR 2018-19, section 19, WM 2m A, Page no. 77 and 78)						
	15mm	No.	146	7984			1165664
	20mm	No.	3	8708			26124
	25mm	No.	2	10154			20308
	40mm	No.	20	14493			289860
Sub total of Material							7719527.91

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Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
LABOUR SECTION							
11	Excavation for Water supply work						
	D.I.Pipes -K9						
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling , etc. complete. Lift 0 to 1.5m	Cum	451.45	145.00	7.25	152.25	68733.77
	MJP 18-19,Page No.47, item no. 1						
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete . Lift 0 to 1.5m	Cum	150.48	165.00	8.25	173.25	26071.43
	MJP 18-19,Page No.47, item no. 2						
iii	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.5m	Cum	451.45	185.00	9.25	194.25	87694.81
	MJP 18-19,Page No.47, item no. 3						

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Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 m to 1.5m	Cum	537.02	454.00	22.70	476.70	255995.72
	MJP 18-19,Page No.47, item no. 5						
v	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. (Lift 1.50 M to 3.0 M)	Cum	150.48	791.00	39.55	830.55	124984.86
	MJP 18-19,Page No.48, item no. 7						
12	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)						146494.54
	MJP 18-19,Page No.73, item no. 10						

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Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.73, item no. 10						
i)	Dia.100	Nos.					
ii)	Dia.150	Nos.					
iii)	Dia.200	Nos.					
iv)	Dia.250	Nos.					
v)	Dia.300	Nos.					
vi)	Dia.400	Nos.					
vii)	Dia.500	Nos.					
13	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr	618.00	64.00	3.20	67.20	41529.60
	MJP 18-19,Page No.50, item no. 14						
14	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	248.14	66.00	3.30	69.30	17195.78
	MJP 18-19,Page No.50, item no. 15						
15	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	148.20	66.00	3.30	69.30	10270.47
	MJP 18-19,Page No.51, item no. 16						

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Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
16	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	a) In PCC M-100	Cum	15.00	3751.00	187.55	3938.55	59078.25
	MJP 18-19,Page No.59, item no. 1						
17	Carriage of surplus excavated material over distance exceeding 50m includig loading and unloading.	Cum					363274.41
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						
18	Providing and casting in situ cement concrete of trap granite/quartzite/gneiss metal of approved quality for RCC work as per the detail drawings and designs or as directed by Engineer in charge including normal dewatering,centering,formwork,compaction,finishing the form surface with CM 1:3 of sufficient minimum thickness if special finish to be provided and curing etc., complete (by weigh batching or mix design for M-250 and M-300 only.Use of L&T,ACC,Ambuja,Birala Gold,Manikgad,Rajashree etc. cement is permitted.(excluding M.S. or Tor Steel)						
	MJP 18-19,Page No.59, item no. 2						
	For foundation						
	In RCC M-250	Cum	150.00	5183.00	259.15	5442.15	816322.50

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Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
19	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire	MT	16.50	48500.00	2425.00	50925.00	840262.50
	MJP 18-19,Page No.62, item no. 8						
20	Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.						
	MJP 18-19,Page No.84, item no. 2						
	D.I. K-9						
i)	100mm DI K9	Rmt	156.20	58.00	2.90	60.90	9,512.58
ii)	150mm DI K9	Rmt	169.70	79.00	3.95	82.95	14,076.62
iii)	300mm DI K9	Rmt	107.80	152.00	7.60	159.60	17,204.88
iv)	350mm DI K9	Rmt	249.70	186.00	9.30	195.30	48,766.41
v)	400mm DI K9	Rmt	216.70	230.00	11.50	241.50	52,333.05
vi)	450mm DI K10	Rmt	149.00	242.00	12.10	254.10	37,860.90

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Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
21	Lowering, laying and fixing in proper alignment and position all types of C.I. air valevs as directed by engineer-in charge including cost of conveyance from stores to site of work, cost of all materialand giving satisfactory hydraullice testing, etc. complete. (for all class valves)						
	MJP 18-19,Page No.247, item no. 10						
	b) Air valve double ball (PN-1 and PN-1.6)						
	200mm	No	1.00	662.00	33.10	695.10	695.10
22	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting,placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments,labour,operation charges,etc.required for testing.the rate under this item shall also include cost of retesting,if necessary and reinstatement to original position using water supplied by the contractor						
	MJP 18-19,Page No.93, item no. 12						
	D.I.-K-9						
i)	100mm DI K9	Km	0.16	6,546.00	327.30	6,873.30	1,073.61
ii)	150mm DI K9	Km	0.17	8,763.00	438.15	9,201.15	1,561.44
iii)	300mm DI K9	Km	0.11	16,892.00	844.60	17,736.60	1,912.01
iv)	350mm DI K9	Km	0.25	20,587.00	1,029.35	21,616.35	5,397.60
v)	500mm DI K9	Km	0.22	31,039.00	1,551.95	32,590.95	7,062.46
vi)	600mm DI K10	Km	0.15	41,385.00	2,069.25	43,454.25	6,474.68

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Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
23	Lowering, laying and jointly in position following CID/F Reflex valves, Butterfly valves and Sluice valves including cost of all labour jointly material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)						
	MJP 18-19,Page No.240, item no. 4						
i)	100mm	No.	30.00	1877.00	93.85	1970.85	59125.50
ii)	150mm	No.	7.00	2950.00	147.50	3097.50	21682.50
iii)	250mm	No.	5.00	3999.00	199.95	4198.95	20994.75
iv)	600mm	No.	2.00	8065.00	403.25	8468.25	16936.50
24	Providing and fixing CI road box including loading, unloading and carting to site of work including all necessary excavation in all types of starta and fixing in murum packing etc. complete.						
	MJP 18-19,Page No.388, item no. 5						
	a) 100mm x 225mm (20kg) for 100mm, 150mm, 200mm, 250mm	No.	40.00	1327.00	66.35	1393.35	55734.00
	Pressure Loggers						
25	Erection, installation, calliberation, commissioning of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	2.00	13197.00	659.85	13856.85	27713.70
	(Vendor supply item)						

Bill of Quantities for Water Supply work for DMA 1 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
26	Residual chlorine analyser						
	Erection ,installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	3.00	13197.00	659.85	659.85	1979.55
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						

Bill of Quantities for Water Supply work for DMA 1 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
27	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and ratchet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						
	(RA)						
	15mm	Nos.	291.00	2022.00	101.10	2123.10	617822.10
	20mm	Nos.	6.00	2247.00	112.35	2359.35	14156.10
	25mm	Nos.	3.00	2327.00	116.35	2443.35	7330.05
	40mm	Nos.	40	3642.00	182.10	3824.10	152964.00
28	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete. work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.88, item no.4	Joint					200000.00
29	Repairing damage water connection to house hold including labour, materials etc. complete. (Work shall be measured and paid for, per number on actual quantity.) (RA)	Nos.	50.00	406.00	20.30	426.30	21315.00

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Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
30	Repairing to the damaged drainage connection including labour, materials etc. complete. (RA)						400000.00
	(Work shall be measured and paid for, per running meter basis on actual quantity.)						
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
	RA						
31	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows - (RA items)						
	1) Bulk flow meter (150mm) - 3M X 3.5M X 2M	Nos	1.00	247336.00	12366.80	259702.80	259702.80
	2) Pressure loggers = 0.9M X 0.9M X 1.5M	Nos	2.00	40140.00	2007.00	42147.00	84294.00
	3) Residual quality analyser - 0.9M X 0.9M X 1.5M	Nos	3.00	40140.00	2007.00	42147.00	126441.00
	4) PRV : 400mm (1.2M X 1.3M X 1.8M)	Nos	1.00	62315.00	3115.75	65430.75	65430.75
	5) Air valve - 1.2M X 1.2M X 1.5M	Nos	1.00	53618.00	2680.90	56298.90	56298.90
32	Providing and constructing B.B. masonry valve Chamber with 15 CM thick 1:3:6 proportion PCC bedding ,excluding excavation,B.B. masonry in CM 1:5 proportion precast R.C.C frame and cover etc completed as directed by Engineer-In-Charge	Nos	342.00	4149.00	207.45	4356.45	1489905.90
	Note: wall thickness:0.23 M for depth of 1.2 M and 0.35 m for balance depth exceeding 1.2 M.						
	As above 60 x 45 cm internal size and depth upto 0.90 m with precast RCC slab cover.						
	MJP schedule, MJP 18-19,Page No.385, item no. 1						
Sub Total Labour							6761667.07

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Sub total (Material + Labour)							14481194.98

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Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Reinstatement of Road works							
	Bituminous Road						
i	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2). Spec. No. MORTH -305						
	From Material available from road way cutting (PWD SSR 2017-18 item 2.25)	Cum	276.65	112.00	5.60	117.60	32533.52
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	69.16	419.00	20.95	439.95	30427.56
ii	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	137.69	1606.00	80.30	1686.30	232194.02
iii	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver.(RA based on-PWD SSR 2017-18 item 3.23)	Cum	229.49	1862.00	93.10	1955.10	448677.12

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Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iv	DENSE BITUMINOUS MACADAM --Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder, @ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-40 grade with stone dust(RA based on-PWD SSR 2017-18 item 3.45)	Cum	55.08	5558.00	277.90	5835.90	321428.24
v	BITUMINOUS CONCRETE --Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler(RA based on-PWD SSR 2017-18 item 3.51)	Cum	36.72	6917.00	345.85	7262.85	266680.96
vi	Prime Coat						
	Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	917.96	17	0.85	17.85	16385.63

Bill of Quantities for Water Supply work for DMA 1 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
vii	Tack Coat						

Bill of Quantities for Water Supply work for DMA 1 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg/sqm on the prepared bituminous/granular surface cleaned with mechanical broom. etc. complete.(Spec. No. MORTH-503)	Sqm	917.96	8	0.40	8.40	7710.89
	Concrete Road						
viii	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting (PWD SSR 2017-18 item 2.25)	Cum	118.56	112.00	5.60	117.60	13942.94
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	29.64	419.00	20.95	439.95	13040.38

Bill of Quantities for Water Supply work for DMA 1 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
ix	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	59.01	1606.00	80.30	1686.30	99511.72
x	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete. (RA based on-PWD SSR 2017-18 item 5.13)	Cum	39.34	2784.00	139.20	2923.20	115002.34
xi	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver,compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any (RA based on-MORTH)	Cum	110.16	5735.00	286.75	6021.75	663328.88

Bill of Quantities for Water Supply work for DMA 1 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
xii	Providing road lane marking (PWD SSR 2017-18 item 6.23)	Sqm	367.19	123.00	6.15	129.15	47421.94
Total cost of Road Reinstatement							2308286.15

Bill of Quantities for Water Supply work for DMA 2 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Material Section							
1	Providing and supplying at site of work DI Pipes (push on joints pressure pipes of DI of following class and Dia meters confirming to the indian Standard specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality)excluding GST levied by GOI and GOM in all respect including Thid party inspection charges of TPI Agency approved by the MJP including transit insurance,Railway frieght,unloading from railway wagon,loading in to the truck transportation to departmental store, unloading,stacking etc. completed as directed by engineer-in-charge(IS:1536:2001 for pipes and IS:158:1969 and 15:12820:1989 or latest edition/revision with amendments for rubber gaskets).(IS:8329:2000 latest version).						
	MJP 18-19,Page No.86, item no. 3						
	D.I. K-9						
i)	Dia.100 mm	Rmt	5,609	793.00			4448175
ii)	Dia.150 mm	Rmt	193	1151.00			221568
iii)	Dia. 200 mm	Rmt	1,810	1565.00			2832807
iv)	Dia.300 mm	Rmt	375	2576.00			966258
v)	Dia.400 mm	Rmt	26	3810.00			100584
vi)	Dia.500 mm	Rmt	651	5314.00			3460477

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Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
2	Providing and supplying at site of work double flange sluice valve conforming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.						
	MJP 18-19,Page No.234, item no. (2a)						
	Sluice Valves PN - 1 (Without bypass arrangement)						
i)	100mm	No.	50.00	5807.00			290350.00
iii)	150mm	No.	5.00	8709.00			43545.00
iii)	200mm	No.	15.00	15786.00			236790.00
iv)	300mm	No.	3.00	30986.00			92958.00
v)	400mm	No.	3.00	60013.00			180039.00
vi)	500mm	No.	3.00	92991.00			278973.00
	For flow meter & PRV						
i)	150mm	No.	2.00	8709.00			17418.00
ii)	300mm	No.	2.00	30986.00			61972.00
iii)	500mm	No.	3.00	92991.00			278973.00

Bill of Quantities for Water Supply work for DMA 2 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
3	Providing and supplying kinetic double orifice type air valves confirming to IS 14845 as per MJP's standard specifications having small orifice elastic ball resting on a gun metal orifice nipple, large orifice vulcanite ball seating on moulded seat ring, with built-in kinetic features, isolating sluice valve mounted in horizontal position and operated by wheel gearing, inlet face and drilled, including insurance, third party inspection charges, loading, unloading, transportation upto departmental stores, excluding GST levied by GOI and GOM in all respect etc. complete.						
	MJP 18-19,Page No.246, item no. 9						
	b) Kinetic Air valve flanged, Type PN - 1.6						
	200mm	No.	1.00	30341.00			30341.00
	Pressure Loggers						
4	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	5.00	55000.00			275000
	(Vendor supply item)						
	Residual chlorine analyser						

Bill of Quantities for Water Supply work for DMA 2 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
5	Design, installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	2.00	191451.00			382902
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
6	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and tranportation to store/site, loading, unloading and stacking, all taxes , etc complete.						
	a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269	No.					3608960.19
	b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	Kg					
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg					

Bill of Quantities for Water Supply work for DMA 2 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
7	Providing, erecting, testing and commissioning of battery operated electromagnetic flow meter built in GSM (with Simcard charges for 36 months validity) of various diameters as per the following specifications including 36 months guarantee etc complete.						
	MJP ELEC/MECH,Page No.93, item no. WM4						
i)	150 mm line size	No.	1	123503			123503
8	Pressure Reducing Valve						
	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						
	MJP ELEC/MECH,Page No.106, item no. SA8						
	600 mm dia	No.	1	1073774			1073774
	Mechanical Type Meters.						
9	A) Domestic Meters						
b)	Multijet meters						
	Providing, installing and giving satisfactory field testing of						
	Domestic water meter, horizontal inferential multijet type						
	with magnetic drive and dry dial suitable for ambient 50° C						
	Temperature duly sealed against tampering complete with						
	couplings at both ends and conforming to class B as per						
	ISO 4064 along with manufacturer's test certificate and						
	guarantee certificate, including cost of all materials and						
	labour etc with OIML , MID certification for Abroad and						
	FCRI for India including 36 months guarantee etc complete						

Bill of Quantities for Water Supply work for DMA 2 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	(MJP Elec/Mech CSR 2018-19, section 19, WM 1 b, Page no. 74)						
	15mm	No.	538	1755			944190
	20mm	No.	11	2137			23507
	25mm	No.	1	3619			3619
	40mm	No.	10	6741			67410
			560				
10	Ultrasonic Water Meter						
A)	AMR Domestic Meters						
	Providing, installing and giving satisfactory field testing of domestic battery operated AMR water meters with no measurement of air along with manufacturing test certificate and guarantee certificate with battery life of minimum 10 years with GSM / RF technology for communication to server with PC software including 36 months guarantee, etc. complete.						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 2m A, Page no. 77 and 78)						
	15mm	No.	538	7984			4295392
	20mm	No.	11	8708			95788
	25mm	No.	1	10154			10154
	40mm	No.	10	14493			144930
			560				
						Sub Total Material	24590355.49
LABOUR SECTION							
11	Excavation for Water supply work						
	D.I.Pipes -K9						

Bill of Quantities for Water Supply work for DMA 2 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling , etc. complete. (Lift 0 m to 1.50 m)	Cum	2628.93	145.00	7.25	152.25	400253.98
	MJP 18-19,Page No.47, item no. 1						
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete (Lift 0 m to 1.50 m)	Cum	876.31	165.00	8.25	173.25	151820.47
	MJP 18-19,Page No.47, item no. 2						
iii	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. (Lift 0 m to 1.50 m)	Cum	2628.93	185.00	9.25	194.25	510668.87
	MJP 18-19,Page No.47, item no. 3						
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 m to 1.5m	Cum	3702.15	454.00	22.70	476.70	1764816.00
	MJP 18-19,Page No.47, item no. 5						

Bill of Quantities for Water Supply work for DMA 2 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
v	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. (Lift 1.50 m to 3.0 m)	Cum	876.31	791.00	39.55	830.55	727818.15
	MJP 18-19,Page No.48, item no. 7						
12	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)						601493.37
	MJP 18-19,Page No.73, item no. 10						
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.73, item no. 10						
i)	Dia.100	Nos.					
ii)	Dia.150	Nos.					
iii)	Dia.200	Nos.					
iv)	Dia.250	Nos.					
v)	Dia.300	Nos.					
vi)	Dia.400	Nos.					

Bill of Quantities for Water Supply work for DMA 2 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
vii)	Dia.500	Nos.					
13	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr	618.00	64.00	3.20	67.20	41529.60
	MJP 18-19,Page No.50, item no. 14						
14	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	912.04	66.00	3.30	69.30	63204.37
	MJP 18-19,Page No.50, item no. 15						
15	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	989.89	66.00	3.30	69.30	68599.46
	MJP 18-19,Page No.51, item no. 16						
16	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	a) In PCC M-100	Cum	15.00	3751.00	187.55	3938.55	59078.25
	MJP 18-19,Page No.59, item no. 1						

Bill of Quantities for Water Supply work for DMA 2 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
17	Carriage of surplus excavated material over distance exceeding 50m includig loading , unloading, spreading etc as directed.	Cum					2353817.47
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						
18	Providing and casting in situ cement concrete of trap granite/quartzite/gneiss metal of approved quality for RCC work as per the detail drawings and designs or as directed by Engineer in charge including normal dewatering,centering,formwork,compaction,finishing the form surface with CM 1:3 of sufficient minimum thickness if special finish to be provided and curing etc., complete (by weigh batching or mix design for M-250 and M-300 only.Use of L&T,ACC,Ambuja,Birala Gold,Manikgad,Rajashree etc. cement is permitted.(excluding M.S. or Tor Steel)						
	MJP 18-19,Page No.59, item no. 2						
	For foundation						
	In RCC M-250	Cum	150.00	5183.00	259.15	5442.15	816322.50

Bill of Quantities for Water Supply work for DMA 2 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
19	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire	MT	16.50	48500.00	2425.00	50925.00	840262.50
	MJP 18-19,Page No.62, item no. 8						
20	Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.						
	MJP 18-19,Page No.84, item no. 2						
	D.I. K-9						
i)	Dia.100 mm	Rmt	5,609.30	58.00	2.90	60.90	341,606.37
ii)	Dia.150 mm	Rmt	192.50	79.00	3.95	82.95	15,967.88
iii)	Dia. 200 mm	Rmt	1,810.10	104.00	5.20	109.20	197,662.92
iv)	Dia.300 mm	Rmt	375.10	152.00	7.60	159.60	59,865.96
v)	Dia.400 mm	Rmt	26.40	230.00	11.50	241.50	6,375.60
vi)	Dia.500 mm	Rmt	651.20	280.00	14.00	294.00	191,452.80

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Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
21	Lowering, laying and fixing in proper alignment and position all types of C.I. air valevs as directed by engineer-in charge including cost of conveyance from stores to site of work, cost of all materialand giving satisfactory hydraullice testing, etc. complete. (for all class valves)						
	MJP 18-19,Page No.247, item no. 10						
	b) Air valve double ball (PN-1 and PN-1.6)						
	200mm	No	1.00	662.00	33.10	695.10	695.10
22	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting,placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments,labour,operation charges,etc.required for testing.the rate under this item shall also include cost of retesting,if necessary and reinstatement to original position using water supplied by the contractor						
	MJP 18-19,Page No.93, item no. 12						
	D.I.-K-9						
i)	Dia.100 mm	Km	5.61	6,546.00	327.30	6,873.30	38,554.40
ii)	Dia.150 mm	Km	0.19	8,763.00	438.15	9,201.15	1,771.22
iii)	Dia. 200 mm	Km	1.81	11,508.00	575.40	12,083.40	21,872.16
iv)	Dia.300 mm	Km	0.38	16,892.00	844.60	17,736.60	6,653.00
v)	Dia.400 mm	Km	0.03	25,549.00	1,277.45	26,826.45	708.22
vi)	Dia.500 mm	Km	0.65	31,039.00	1,551.95	32,590.95	21,223.23

Bill of Quantities for Water Supply work for DMA 2 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
23	Lowering, laying and jointly in position following CID/F Reflex valves, Butterfly valves and Sluice valves including cost of all labour jointly material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)						
	MJP 18-19,Page No.240, item no. 4						
i)	100mm	No.	50.00	1877.00	93.85	1970.85	98542.50
ii)	150mm	No.	7.00	2337.00	116.85	2453.85	17176.95
iii)	200mm	No.	15.00	2950.00	147.50	3097.50	46462.50

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Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iv)	300mm	No.	5.00	3069.00	153.45	3222.45	16112.25
v)	400mm	No.	3.00	3999.00	199.95	4198.95	12596.85
vi)	500mm	No.	6.00	4148.00	207.40	4355.40	26132.40
24	Providing and fixing CI road box including loading, unloading and carting to site of work including all necessary excavation in all types of starta and fixing in murum packing etc. complete.						
	MJP 18-19,Page No.388, item no. 5						
	a) 100mm x 225mm (20kg) for 100mm, 150mm, 200mm, 250mm	No.	70.00	1327.00	66.35	1393.35	97534.50
	Pressure Loggers						
25	Erection, installation, calliberation, commissioning of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	5.00	13197.00	659.85	13856.85	69284.25

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Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	(Vendor supply item)						
26	Residual chlorine analyser						
	Erection ,installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	2.00	13197.00	659.85	13856.85	27713.70
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						

Bill of Quantities for Water Supply work for DMA 2 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
27	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and ratchet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						
	(RA)						
	15mm	Nos.	1076.00	2022.00	101.10	2123.10	2284455.60
	20mm	Nos.	22.00	2247.00	112.35	2359.35	51905.70
	25mm	Nos.	2.00	2327.00	116.35	2443.35	4886.70
	40mm	Nos.	20.00	3642.00	182.10	3824.10	76482.00

Bill of Quantities for Water Supply work for DMA 2 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
28	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete. Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19, Page No.88, item no. 4	Joint					200000.00
29	Repairing damage water connection to house hold including labour, materials etc. complete. (Work shall be measured and paid for, per number on actual quantity.) (RA)	Nos.	60.00	406.00	20.30	426.30	25578.00
30	Repairing to the damaged drainage connection including labour, materials etc. complete. (RA) (Work shall be measured and paid for, per running meter basis on actual quantity.)						400000.00
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
	RA						
31	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows - (RA items)						
	1) Sluice valve 500mm (1.3M X 2M X 2.2M)	Nos	3.00	94039.00	4701.95	98740.95	296222.85
	2) Bulk flow meter (150mm) - 3M X 3.5M X 2M	Nos	1.00	247336.00	12366.80	259702.80	259702.80
	3) Pressure loggers = 0.9M X 0.9M X 1.5M	Nos	5.00	40140.00	2007.00	42147.00	210735.00

Bill of Quantities for Water Supply work for DMA 2 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	4) Residual quality analyser - 0.9M X 0.9M X 1.5M	Nos	2.00	40140.00	2007.00	42147.00	84294.00
	5) Air valve - 1.2M X 1.2M X 1.5M	Nos	1.00	53618.00	2680.90	56298.90	56298.90
	6) Pressure reducing valve 600mm (1.3M X 2M X 2.2M)	Nos	1.00	94039.00	4701.95	98740.95	98740.95
32	Providing and constructing B.B. masonry valve Chamber with 15 CM thick 1:3:6 proportion PCC bedding ,excluding excavation,B.B. masonry in CM 1:5 proportion precast R.C.C frame and cover etc completed as directed by Engineer-In-Charge	Nos	1120.00	4149.00	207.45	4356.45	4879224.00
	Note: wall thickness:0.23 M for depth of 1.2 M and 0.35 m for balance depth exceeding 1.2 M.						
	As above 60 x 45 cm internal size and depth upto 0.90 m with precast RCC slab cover.						
	MJP schedule, MJP 18-19,Page No.385, item no. 1						
						Sub Total Labour	18644176.24
						Sub total (Material + Labour)	43234531.73

Bill of Quantities for Water Supply work for DMA 2 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Reinstatement of Road works							
Bituminous Road							
i	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2). Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 PWD SSR 2017-18 item 2.25)	Cum	1847.80	112.00	5.60	117.60	217300.93
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	461.95	419.00	20.95	439.95	203234.57
ii	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	1137.23	1606.00	80.30	1686.30	1917708.84
iii	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver. (RA based on-PWD SSR 2017-18 item 3.23)	Cum	1895.38	1862.00	93.10	1955.10	3705659.88

Bill of Quantities for Water Supply work for DMA 2 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iv	<p>DENSE BITUMINOUS MACADAM--Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder, @ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-40 grade with stone dust(RA based on-PWD SSR 2017-18 item 3.45)</p>	Cum	454.89	5558.00	277.90	5835.90	2654701.30
v	<p>BITUMINOUS CONCRETE--Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler(RA based on-PWD SSR 2017-18 item 3.51)</p>	Cum	303.26	6917.00	345.85	7262.85	2202539.15

Bill of Quantities for Water Supply work for DMA 2 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
vi	Prime Coat						
	Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	7581.53	17	0.85	17.85	135330.22
	Sr no 145 PWD SSR Item no 3.29						
vii	Tack Coat						
	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg/sqm on the prepared bituminous/granular surface cleaned with mechanical broom. etc. complete.(Spec. No. MORTH-503)	Sqm	7581.53	8	0.40	8.40	63684.81
	Sr no 146 PWD SSR Item no 3.30						
	Concrete Road						
viii	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2). Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 PWD SSR Item No 2.25	Cum	791.91	112.00	5.60	117.60	93128.97
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	197.98	419.00	20.95	439.95	87100.53

Bill of Quantities for Water Supply work for DMA 2 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
ix	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	487.38	1606.00	80.30	1686.30	821875.22
x	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete. (RA based on-PWD SSR 2017-18 item 5.13)	Cum	324.92	2784.00	139.20	2923.20	949813.45

Bill of Quantities for Water Supply work for DMA 2 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
xi	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver,compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any(RA based on-MoRTH)	Cum	909.78	5735.00	286.75	6021.75	5478485.78
xii	Providing road lane marking Sr No. 222 PWD SSR 2017-18 item 6.23)	Sqm	3032.61	123.00	6.15	129.15	391661.58
Total cost of Road Reinstatement							18922225.24

Bill of Quantities for Water Supply work for DMA 3 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Material Section							
1	Providing and supplying at site of work DI Pipes (push on joints pressure pipes of DI of following class and Dia meters confirming to the indian Standard specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality)including all statutory duties and taxes such as GST levied by GOI and GOM in all approved by the MJP including transit insurance,Railway frieght,unloading from railway wagon,loading in to the truck transportation to departmental store / site of work,loading,stacking etc. complete as directed by engineer-in-charge(IS:1536:2001 for pipes and IS:158:1969 and 15:12820:1989 or latest edition/revision with amendments for rubber gaskets).(IS:8329:2000 latest version).						
	MJP 18-19,Page No.86, item no. 3						
	D.I. K-9						
i)	Dia.100 mm	Rmt	1,029	793.00			815680
ii)	Dia.150 mm	Rmt	40	1151.00			46385
iii)	Dia.300 mm	Rmt	141	2576.00			364246
2	Providing and supplying at site of work double flange sluice valve confirming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.						
	MJP 18-19,Page No.234, item no. (2a)						

Bill of Quantities for Water Supply work for DMA 3 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Sluice Valves PN - 1 (Without bypass arrangement)						
i)	100mm	No.	17.00	5807.00			98719.00
ii)	150mm	No.	3.00	8709.00			26127.00
iii)	200mm	No.	2.00	15786.00			31572.00
iv)	300mm	No.	2.00	30986.00			61972.00
v)	350mm	No.	1.00	45583.00			45583.00
	For flow meter and PRV						
i)	300mm	No.	6.00	30986.00			185916.00
ii)	350mm	No.	2.00	45583.00			91166.00
3	Providing and supplying kinetic double orifice type air valves confirming to IS 14845 as per MJP's standard specifications having small orifice elastic ball resting on a gun metal orifice nipple, large orifice vulcanite ball seating on moulded seat ring, with built-in kinetic features, isolating sluice valve mounted in horizontal position and operated by wheel gearing, inlet face and drilled, including insurance, third party inspection charges, loading, unloading, transportation upto departmental stores, excluding GST levied by GOI and GOM in all respect etc. complete.						
	MJP 18-19,Page No.246, item no. 9						
	b) Kinetic Air valve flanged, Type PN - 1.6						
	200mm	No.	1.00	30341.00			30341.00

Bill of Quantities for Water Supply work for DMA 3 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Pressure Loggers						
4	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender. (Vendor supply item)	No.	5.00	55000.00			275000
	Residual chlorine analyser						
5	Design, installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement. Overall Range : 0 8mg/l (ppm) Accuracy : 2% of full scale Supply voltage : 230 V ac Outout : 4 20 mA Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance. IP 65 Nema 4 housing protection class required. MJP ELEC/MECH,Page No.104, item no. 5.5	No.	5.00	191451.00			957255
6	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and tranportation to store/site, loading, unloading and stacking, all taxes , etc complete.						

Bill of Quantities for Water Supply work for DMA 3 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269	No.					367893.45
	b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	Kg					
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg					
	Battery operated Full Bore Electromagnetic Flow Meter						
7	Providing, erecting, testing and commissioning of battery operated electromagnetic flow meter built in GSM (with Simcard charges for 36 months validity) of various diameters as per the following specifications including 36 months guarantee etc complete.						
	MJP ELEC/MECH,Page No.93, item no. WM4						
i)	150 mm line size	No.	1	123503			123503
8	Pressure Reducing Valve						
	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						
	MJP ELEC/MECH,Page No.106, item no. SA8						
	200 mm dia	No.	3	206052			618156
	Mechanical Type Meters.						
9	A) Domestic Meters						
b)	Multijet meters						
	Providing, installing and giving satisfactory field testing of						
	Domestic water meter, horizontal inferential multijet type						
	with magnetic drive and dry dial suitable for ambient 50° C						

Bill of Quantities for Water Supply work for DMA 3 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Temperature duly sealed against tampering complete with couplings at both ends and conforming to class B as per ISO 4064 along with manufacturer's test certificate and guarantee certificate, including cost of all materials and labour etc with OIML , MID certification for Abroad and FCRI for India including 36 months guarantee etc complete						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 1 b, Page no. 74)						
	15mm	No.	343	1755			601965
	20mm	No.	7	2137			14959
	40mm	No.	10	6741			67410
10	Ultrasonic Water Meter						
A)	AMR Domestic Meters						
	Providing, installing and giving satisfactory field testing of domestic battery operated AMR water meters with no measurement of air along with manufacturing test certificate and guarantee certificate with battery life of minimum 10 years with GSM / RF technology for communication to server with PC software including 36 months guarantee, etc. complete.						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 2m A, Page no. 77 and 78)						
	15mm		343	7984			2738512
	20mm		7	8708			60956
	40mm		10	14493			144930
Total for Material Section							7768246.95

Bill of Quantities for Water Supply work for DMA 3 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
LABOUR SECTION							
11	Excavation for Water supply work						
	D.I.Pipes -K9						
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling , etc. complete. Lift 0 to 1.50 m	Cum	337.15	145.00	7.25	152.25	51331.60
	MJP 18-19,Page No.47, item no. 1						
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	112.38	165.00	8.25	173.25	19470.61
	MJP 18-19,Page No.47, item no. 2						
iii	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	337.15	185.00	9.25	194.25	65492.04

Bill of Quantities for Water Supply work for DMA 3 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP 18-19,Page No.47, item no. 3						
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 m to 1.5m	Cum	497.09	454.00	22.70	476.70	236961.09
	MJP 18-19,Page No.47, item no. 5						
v	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. Lift 0 to 1.50 m	Cum	112.38	770.00	38.50	808.50	90862.83
	MJP 18-19,Page No.48, item no. 7						
12	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)						61315.58
	MJP 18-19,Page No.73, item no. 10						

Bill of Quantities for Water Supply work for DMA 3 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.73, item no. 10						
i)	Dia.100	Nos.					
ii)	Dia.150	Nos.					
iii)	Dia.200	Nos.					
iv)	Dia.250	Nos.					
v)	Dia.300	Nos.					
vi)	Dia.400	Nos.					
vii)	Dia.500	Nos.					
13	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr	618.00	64.00	3.20	67.20	41529.60
	MJP 18-19,Page No.50, item no. 14						
14	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	95.94	66.00	3.30	69.30	6648.47
	MJP 18-19,Page No.50, item no. 15						
15	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	131.63	66.00	3.30	69.30	9121.66
	MJP 18-19,Page No.51, item no. 16						

Bill of Quantities for Water Supply work for DMA 3 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
16	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	a) In PCC M-100	Cum	15.00	3751.00	187.55	3938.55	59078.25
	MJP 18-19,Page No.59, item no. 1						
17	Carriage of surplus excavated material over distance exceeding 50m includig loading , unloading, spreading etc as directed.	Cum					195414
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						
18	Providing and casting in situ cement concrete of trap granite/quartzite/gneiss metal of approved quality for RCC work as per the detail drawings and designs or as directed by Engineer in charge including normal dewatering,centering,formwork,compaction,finishing the form surface with CM 1:3 of sufficient minimum thickness if special finish to be provided and curing etc., complete (by weigh batching or mix design for M-250 and M-300 only.Use of L&T,ACC,Ambuja,Birala Gold,Manikgad,Rajashree etc. cement is permitted.(excluding M.S. or Tor Steel)						
	MJP 18-19,Page No.59, item no. 2						
	For foundation						
	In RCC M-250	Cum	150.00	5183.00	259.15	5442.15	816322.50

Bill of Quantities for Water Supply work for DMA 3 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
19	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire	MT	16.50	48500.00	2425.00	50925.00	840262.50
	MJP 18-19,Page No.62, item no. 8						
20	Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.						
	MJP 18-19,Page No.84, item no. 2						
	D.I. K-9						
i)	Dia.100 mm	Rmt	1,029	58.00	2.90	60.90	62,642
ii)	Dia.150 mm	Rmt	40	79.00	3.95	82.95	3,343
iii)	Dia.300 mm	Rmt	141	152.00	7.60	159.60	22,567
21	Lowering, laying and fixing in proper alignment and position all types of C.I. air valevs as directed by engineer-in charge including cost of conveyance from stores to site of work, cost of all materialand giving satisfactory hydraullice testing, etc. complete. (for all class valves)						

Bill of Quantities for Water Supply work for DMA 3 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP 18-19,Page No.247, item no. 10						
	b) Air valve double ball (PN-1 and PN-1.6)						
	200mm	No	1.00	662.00	33.10	695.10	695.10
22	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting,placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments,labour,operation charges,etc.required for testing.the rate under this item shall also include cost of retesting,if necessary and reinstatement to original position using water supplied by the contractor						
	MJP 18-19,Page No.93, item no. 12						
	D.I.-K-9						
i)	Dia.100 mm	Km	1.03	6,546.00	327.30	6,873.30	7,069.88
ii)	Dia.150 mm	Km	0.04	8,763.00	438.15	9,201.15	370.81
iii)	Dia.300 mm	Km	0.14	16,892.00	844.60	17,736.60	2,507.96
23	Lowering, laying and jointly in position following CID/F Reflex valves, Butterfly valves and Sluice valves including cost of all labour jointly material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)						
	MJP 18-19,Page No.240, item no. 4						
i)	100mm	No.	17.00	1877.00	93.85	1970.85	33504.45
iii)	150mm	No.	3.00	2950.00	147.50	3097.50	9292.50
iv)	200mm	No.	2.00	3069.00	153.45	3222.45	6444.90

Bill of Quantities for Water Supply work for DMA 3 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
vi)	300mm	No.	8.00	4148.00	207.40	4355.40	34843.20
vii)	350mm	No.	3.00	5112.00	255.60	5367.60	16102.80
24	Providing and fixing CI road box including loading, unloading and carting to site of work including all necessary excavation in all types of starta and fixing in murum packing etc. complete.						
	MJP 18-19,Page No.388, item no. 5						
	a) 100mm x 225mm (20kg) for 100mm, 150mm, 200mm, 250mm	No.	22.00	1327.00	66.35	1393.35	30653.70
	Pressure Loggers						
25	Erection, installation, calliberation, commissioning of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	5.00	13197.00	659.85	13856.85	69284.25
	(Vendor supply item)						
26	Residual chlorine analyser						

Bill of Quantities for Water Supply work for DMA 3 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Design, installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	5.00	13197.00	659.85	13856.85	69284.25
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
27	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and ratchet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						

Bill of Quantities for Water Supply work for DMA 3 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	(RA)						
	15mm	Nos.	686.00	1975.00	98.75	2073.75	1422592.50
	20mm	Nos.	14.00	2271.25	113.56	2384.81	33387.38
	40mm	Nos.	20.00	3642.00	182.10	3824.10	76482.00
28	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete.	Joint					200000.00
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.88, item no. 4						
29	Repairing damage water connection to house hold including labour, materials etc. complete.	Nos.	50.00	406.00	20.30	426.30	21315.00
	(Work shall be measured and paid for, per number on actual quantity.)						
30	Repairing to the damaged drainage connection including labour, materials etc. complete.						400000.00
	(Work shall be measured and paid for, per running meter basis on actual quantity.)						
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
31	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows -						

Bill of Quantities for Water Supply work for DMA 3 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	1) Sluice valve (250mm and less) - Road box 300mm (1.2M X 1.3M X 1.8M)	Nos	2.00	62315.00	3115.75	65430.75	130861.50
	350mm (1.2M X 1.3M X 1.8M)	Nos	1.00	62315.00	3115.75	65430.75	65430.75
	2) Bulk flow meter (150mm) - 3M X 3.5M X 2M	Nos	1.00	247336.00	12366.80	259702.80	259702.80
	3) Pressure loggers = 0.9M X 0.9M X 1.5M	Nos	5.00	40140.00	2007.00	42147.00	210735.00
	4) Residual quality analyser - 0.9M X 0.9M X 1.5M	Nos	5.00	40140.00	2007.00	42147.00	210735.00
	5) Air valve - 1.2M X 1.2M X 1.5M	Nos	1.00	53618.00	2680.90	56298.90	56298.90
	6) Pressure reducing valve (for 250 and less) - 1.2M X 1.2M X 1.5M	Nos	3.00	53618.00	2680.90	56298.90	168896.70
32	Providing and constructing B.B. masonry valve Chamber with 15 CM thick 1:3:6 proportion PCC bedding ,excluding excavation, B.B. masonry in CM 1:5 proportion precast R.C.C frame and cover etc completed as directed by Engineer-In- Charge	Nos	720.00	4149.00	207.45	4356.45	3136644.00
	Note: wall thickness: 0.23 M for depth of 1.2 M and 0.35 m for balance depth exceeding 1.2 M.						
	As above 60 x 45 cm internal size and depth upto 0.90 m with precast RCC slab cover.						
	MJP schedule, MJP 18-19, Page No.385, item no. 1						
Sub Total Labour							9255498.50
Sub total (Material + Labour)							17023745.45

Bill of Quantities for Water Supply work for DMA 3 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Reinstatement of Road works							
	Bituminous Road						
i	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting	Cum	245.70	112.00	5.60	117.60	28894.48
	From Material available from Borrow pit	Cum	61.43	419.00	20.95	439.95	27024.08
ii	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material	Cum	158.85	1606.00	80.30	1686.30	267871.92
iii	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver.	Cum	264.75	1862.00	93.10	1955.10	517618.83

Bill of Quantities for Water Supply work for DMA 3 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iv	DENSE BITUMINOUS MACADAM :--Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder, @ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust	Cum	63.54	5358.00	267.90	5625.90	357473.91
v	BITUMINOUS CONCRETE :--Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler	Cum	42.36	6667.00	333.35	7000.35	296538.33
vi	Prime Coat						
	Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	1059.01	17	0.85	17.85	18903.37

Bill of Quantities for Water Supply work for DMA 3 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
vii	Tack Coat						
	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg/sqm on the prepared bituminous/granular surface cleaned with mechanical broom. etc. complete.(Spec. No. MORTH-503)	Sqm	1059.01	8	0.40	8.40	8895.71
	Concrete Road						
viii	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting	Cum	105.30	112.00	5.60	117.60	12383.35
	From Material available from Borrow pit	Cum	26.33	419.00	20.95	439.95	11581.75
ix	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material	Cum	68.08	1606.00	80.30	1686.30	114802.25

Bill of Quantities for Water Supply work for DMA 3 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
x	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete.	Cum	45.39	2784.00	139.20	2923.20	132673.09
xi	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver,compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by anv	Cum	127.08	5735.00	286.75	6021.75	765253.02
xii	Providing road lane marking	Sqm	423.61	123.00	6.15	129.15	54708.59
	Providing road lane marking (PWD SSR 2017-18 item 6.23)						
				Total cost of Road Reinstatement			2614622.67

Bill of Quantities for Water Supply work for DMA 4 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Material Section							
1	Providing and supplying at site of work DI Pipes (push on joints pressure pipes of DI of following class and Dia meters confirming to the indian Standard specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality)excluding GST levied by GOI and GOM in all respect including Thid party inspection charges of TPI Agency approved by the MJP including transit insurance,Railway frieght,unloading from railway wagon,loading in to the truck transportation to departmental store, unloading,stacking etc. completed as directed by engineer-in-charge(IS:1536:2001 for pipes and IS:158:1969 and 15:12820:1989 or latest edition/revision with amendments for rubber gaskets).(IS:8329:2000 latest version).						
	MJP 18-19,Page No.86, item no. 3						
	D.I. K-9						
i)	Dia.100 mm	Rmt	2	793.00			1745
iii)	Dia. 200 mm	Rmt	84	1565.00			131147
iii)	Dia.300 mm	Rmt	26	2576.00			68006
2	Providing and supplying at site of work double flange sluice valve confirming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.						
	MJP 18-19,Page No.234, item no. (2a)						
	Sluice Valves PN - 1 (Without bypass arrangement)						
i)	100mm	No.	12.00	5807.00			69684.00
	For flow meter						
i)	100mm	No.	2.00	5807.00			11614.00
ii)	300mm	No.	2.00	30986.00			61972.00
iii)	400mm	No.	1.00	60013.00			60013.00

Bill of Quantities for Water Supply work for DMA 4 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Pressure Loggers						
3	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender. (Vendor supply item)	No.	4.00	55000.00			220000
	Residual chlorine analyser						
4	Design, installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement. Overall Range : 0 8mg/l (ppm) Accuracy : 2% of full scale Supply voltage : 230 V ac Outout : 4 20 mA Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance. IP 65 Nema 4 housing protection class required. MJP ELEC/MECH,Page No.104, item no. 5.5	No.	4.00	191451.00			765804
5	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and tranportation to store/site, loading, unloading and stacking, all taxes , etc complete. a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269 b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	No. Kg					60269.40

Bill of Quantities for Water Supply work for DMA 4 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg					
	Battery Operated electromagnetic flow meter						
6	Providing, erecting, testing and commissioning of battery operated electromagnetic flow meter built in GSM (with Simcard charges for 36 months validity) of various diameters as per the following specifications including 36 months guarantee etc complete.						
	MJP ELEC/MECH,Page No.93, item no. WM4						
i)	100 mm line size	No.	1	115122			115122
7	Pressure Reducing Valve						
	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						
	MJP ELEC/MECH,Page No.106, item no. SA8						
	200 mm dia	No.	1	206052			206052
	Mechanical Type Meters.						
8	A) Domestic Meters						
b)	Multijet meters						
	Providing, installing and giving satisfactory field testing of						
	Domestic water meter, horizontal inferential multijet type						
	with magnetic drive and dry dial suitable for ambient 50° C						
	Temperature duly sealed against tampering complete with						
	couplings at both ends and conforming to class B as per						
	ISO 4064 along with manufacturer's test certificate and						
	guarantee certificate, including cost of all materials and						
	labour etc with OIML , MID certification for Abroad and						
	FCRI for India including 36 months guarantee etc complete						

Bill of Quantities for Water Supply work for DMA 4 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	(MJP Elec/Mech CSR 2018-19, section 19, WM 1 b, Page no. 74)						
	15mm	No.	123	1755			215865
	20mm	No.	3	2137			6411
	40mm	No.	10	6741			67410
9	Ultrasonic Water Meter						
A)	AMR Domestic Meters						
	Providing, installing and giving satisfactory field testing of domestic battery operated AMR water meters with no measurement of air along with manufacturing test certificate and guarantee certificate with battery life of minimum 10 years with GSM / RF technology for communication to server with PC software including 36 months guarantee, etc. complete.						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 2m A, Page no. 77 and 78)						
	15mm	No.	123	7984			982032
	20mm	No.	3	8708			26124
	40mm	No.	10	14493			144930
Total of Material Section							3214200.4
LABOUR SECTION							
10	Excavation for Water supply work						
	D.I.Pipes -K9						
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling , etc. complete. Lift 0 -1.50 m	Cum	38.06	145.00	7.25	152.25	5795.29
	MJP 18-19,Page No.47, item no. 1						

Bill of Quantities for Water Supply work for DMA 4 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	12.69	165.00	8.25	173.25	2198.21
	MJP 18-19,Page No.47, item no. 2						
iii	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0- to 1.50 m	Cum	38.06	185.00	9.25	194.25	7393.99
	MJP 18-19,Page No.47, item no. 3						
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 m to 1.5m	Cum	50.67	454.00	22.70	476.70	24152.58
	MJP 18-19,Page No.47, item no. 5						
v	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. Lift 0 -1.50 m	Cum	12.69	770.00	38.50	808.50	10258.33
	MJP 18-19,Page No.48, item no. 7						

Bill of Quantities for Water Supply work for DMA 4 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
11	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)						10044.90
	MJP 18-19,Page No.73, item no. 10						
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.73, item no. 10						
i)	Dia.100	Nos.					
ii)	Dia.150	Nos.					
iii)	Dia.200	Nos.					
iv)	Dia.250	Nos.					
v)	Dia.300	Nos.					
vi)	Dia.400	Nos.					
vii)	Dia.500	Nos.					
12	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr	618.00	64.00	3.20	67.20	41529.60
	MJP 18-19,Page No.50, item no. 14						
13	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	16.18	66.00	3.30	69.30	1121.27
	MJP 18-19,Page No.50, item no. 15						

Bill of Quantities for Water Supply work for DMA 4 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
14	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	13.85	66.00	3.30	69.30	959.87
	MJP 18-19,Page No.51, item no. 16						
15	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	a) In PCC M-100	Cum	15.00	3751.00	187.55	3938.55	59078.25
	MJP 18-19,Page No.59, item no. 1						
16	Carriage of surplus excavated material over distance exceeding 50m including loading , unloading, spreading etc as directed.	Cum					21646
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						
17	Providing and casting in situ cement concrete of trap granite/quartzite/gneiss metal of approved quality for RCC work as per the detail drawings and designs or as directed by Engineer in charge including normal dewatering,centering,formwork,compaction,finishing the form surface with CM 1:3 of sufficient minimum thickness if special finish to be provided and curing etc., complete (by weigh batching or mix design for M-250 and M-300 only.Use of L&T,ACC,Ambuja,Birala Gold,Manikgad,Rajashree etc. cement is permitted.(excluding M.S. or Tor Steel)						
	MJP 18-19,Page No.59, item no. 2						
	For foundation						
	In RCC M-250	Cum	150.00	5183.00	259.15	5442.15	816322.50

Bill of Quantities for Water Supply work for DMA 4 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
18	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire	MT	16.50	48500.00	2425.00	50925.00	840262.50
	MJP 18-19,Page No.62, item no. 8						
19	Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.						
	MJP 18-19,Page No.84, item no. 2						
	D.I. K-9						
i)	Dia.100 mm	Rmt	2.20	58.00	2.90	60.90	133.98
ii)	Dia. 200 mm	Rmt	83.80	104.00	5.20	109.20	9,150.96
iii)	Dia.300 mm	Rmt	26.40	152.00	7.60	159.60	4,213.44
20	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting,placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments,labour,operation charges,etc.required for testing.the rate under this item shall also include cost of retesting,if necessary and reinstatement to original position using water supplied by the contractor						

Bill of Quantities for Water Supply work for DMA 4 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP 18-19,Page No.93, item no. 12						
	D.I.-K-9						
i)	Dia.100 mm	Km	0.002	6,546.00	327.30	6,873.30	15.12
ii)	Dia. 200 mm	Km	0.08	11,508.00	575.40	12,083.40	1,012.59
iii)	Dia.300 mm	Km	0.03	16,892.00	844.60	17,736.60	468.25
21	Lowering, laying and jointly in position following CID/F Reflex valves, Butterfly valves and Sluice valves including cost of all labour jointly material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)						
	MJP 18-19,Page No.240, item no. 4						
i)	100mm	No.	14.00	1877.00	93.85	1970.85	27591.90
ii)	300mm	No.	2.00	4148.00	207.40	4355.40	8710.80
iii)	400mm	No.	1.00	6167.00	308.35	6475.35	6475.35
22	Providing and fixing CI road box including loading, unloading and carting to site of work including all necessary excavation in all types of starta and fixing in murum packing etc. complete.						
	MJP 18-19,Page No.388, item no. 5						
	a) 100mm x 225mm (20kg) for 100mm, 150mm, 200mm, 250mm	No.	12.00	1327.00	66.35	1393.35	16720.20
	Pressure Loggers						
23	Erection, installation, calliberation, commissioning of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	4.00	13197.00	659.85	13856.85	55427.40
	(Vendor supply item)						

Bill of Quantities for Water Supply work for DMA 4 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
24	Residual chlorine analyser						
	Erection ,installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	4.00	13197.00	659.85	13856.85	55427.40
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
25	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and ratchet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						
	(RA)						
	15mm	Nos.	246.00	2022.00	101.10	2123.10	522282.60
	20mm	Nos.	6.00	2247.00	112.35	2359.35	14156.10
	40mm	Nos.	20.00	3642.00	182.10	3824.10	76482.00

Bill of Quantities for Water Supply work for DMA 4 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
26	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete.	Joint					200000.00
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.88, item						
27	Repairing damage water connection to house hold including labour, materials etc. complete. (Work shall be measured and paid for, per number on actual quantity.) (RA)	Nos.	50.00	406.00	20.30	426.30	21315.00
28	Repairing to the damaged drainage connection including labour, materials etc. complete. (RA) (Work shall be measured and paid for, per running meter basis on actual quantity.)						400000.00
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
	RA						
29	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows - (RA items)						
	1) Bulk flow meter (100mm) - 3M X 3.5M X 2M	Nos	1.00	247336.00	12366.80	259702.80	259702.80
	2) Pressure loggers = 0.9M X 0.9M X 1.5M	Nos	4.00	40140.00	2007.00	42147.00	168588.00
	3)Residual quality analyser - 0.9M X 0.9M X 1.5M	Nos	4.00	40140.00	2007.00	42147.00	168588.00
	4) Pressure reducing valve (for 250 and less) - 1.2M X 1.2M X 1.5M	Nos	1.00	53618.00	2680.90	56298.90	56298.90

Bill of Quantities for Water Supply work for DMA 4 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
30	Providing and constructing B.B. masonry valve Chamber with 15 CM thick 1:3:6 proportion PCC bedding ,excluding excavation,B.B. masonry in CM 1:5 proportion precast R.C.C frame and cover etc completed as directed by Engineer-In-Charge	Nos	272.00	4149.00	207.45	4356.45	1184954.40
	Note: wall thickness:0.23 M for depth of 1.2 M and 0.35 m for balance depth exceeding 1.2 M.						
	As above 60 x 45 cm internal size and depth upto 0.90 m with precast RCC slab cover.						
	MJP schedule, MJP 18-19,Page No.385, item no. 1						
						Sub Total Labour	5098478.34
						Sub total (Material + Labour)	8312678.74

Bill of Quantities for Water Supply work for DMA 4 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Reinstatement of Road works							
	Bituminous Road						
i)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2). Spec. No. MORTH -305						
	From Material available from road way cutting Sr No 102 PWD SSR 2017-18 item 2.25)	Cum	25.86	112.00	5.60	117.60	3040.57
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	6.46	419.00	20.95	439.95	2843.75
ii)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	14.75	1606.00	80.30	1686.30	24877.14
iii)	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver. (RA based on-PWD SSR 2017-18 item 3.23)	Cum	24.59	1862.00	93.10	1955.10	48071.02

Bill of Quantities for Water Supply work for DMA 4 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iv)	DENSE BITUMINOUS MACADAM :--Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder, @ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-40 grade with stone dust(RA based on-PWD SSR 2017-18 item 3.45)	Cum	5.90	5558.00	277.90	5835.90	34437.65
v)	BITUMINOUS CONCRETE :--Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler(RA based on-PWD SSR 2017-18 item 3.51)	Cum	3.93	6917.00	345.85	7262.85	28572.05
vi)	Prime Coat Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	98.35	17	0.85	17.85	1755.55
vii)	Sr no 145 PWD SSR Item no 3.29 Tack Coat						

Bill of Quantities for Water Supply work for DMA 4 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg/sqm on the prepared bituminous/granular surface cleaned with mechanical broom. etc. complete.(Spec. No. MORTH-503)	Sqm	98.35	8	0.40	8.40	826.14
	Sr no 146 PWD SSR Item no 3.30						
	Concrete Road						
viii)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting (PWD SSR 2017-18 item 2.25)	Cum	18.47	112.00	5.60	117.60	2171.84
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	4.62	419.00	20.95	439.95	2031.25

Bill of Quantities for Water Supply work for DMA 4 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
ix)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	10.54	1606.00	80.30	1686.30	17769.39
x)	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete. (RA based on-PWD SSR 2017-18 item 5.13)	Cum	7.03	2784.00	139.20	2923.20	20535.48
xi)	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver, compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any (RA based on-MoRTH)	Cum	19.67	5735.00	286.75	6021.75	118447.82
xii)	Providing road lane marking Sr no 222 PWD SSR 2017-18 item 6.23)	Sqm	39.34	123.00	6.15	129.15	5080.76
Total cost of Road Reinstatement							310460.40

Bill of Quantities for Water Supply work for DMA 5 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Material Section							
1	Providing and supplying at site of work DI Pipes (push on joints pressure pipes of DI of following class and Dia meters confirming to the indian Standard specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality)excluding GST levied by GOI and GOM in all respect including Thid party inspection charges of TPI Agency approved by the MJP including transit insurance,Railway frieght,unloading from railway wagon,loading in to the truck transportation to departmental store, unloading,stacking etc. completed as directed by engineer-in-charge(IS:1536:2001 for pipes and IS:158:1969 and 15:12820:1989 or latest edition/revision with amendments for rubber gaskets).(IS:8329:2000 latest version).						
MJP 18-19,Page No.86, item no. 3							
D.I. K-9							
i)	Dia.100 mm	Rmt	5,302	793.00			4204407
ii)	Dia. 200 mm	Rmt	679	1565.00			1062322
iii)	Dia.300 mm	Rmt	441	2576.00			1136274
iv)	Dia.350 mm	Rmt	37	3268.00			121896
2	Providing and supplying at site of work double flange sluice valve confirming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.						
MJP 18-19,Page No.234, item no. (2a)							
Sluice Valves PN - 1 (Without bypass arrangement)							
i)	100mm	No.	12.00	5807.00			69684.00
iii)	150mm	No.	2.00	8709.00			17418.00

Bill of Quantities for Water Supply work for DMA 5 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iii)	200mm	No.	2.00	15786.00			31572.00
	For flow meter						
i)	150mm	No.	2.00	8709.00			17418.00
ii)	400mm	No.	1.00	60013.00			60013.00
iii)	500mm	No.	2.00	92991.00			185982.00
	Pressure Loggers						
3	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	6.00	55000.00			330000
	(Vendor supply item)						
	Residual chlorine analyser						
4	Design, installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	4.00	191451.00			765804
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						

Bill of Quantities for Water Supply work for DMA 5 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
5	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and transportation to store/site, loading, unloading and stacking, all taxes , etc complete.						
	a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269	No.					1957470
	b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	Kg					
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg					
	Battery Operated electromagnetic flow meter						
6	Providing, erecting, testing and commissioning of battery operated electromagnetic flow meter built in GSM (with Simcard charges for 36 months validity) of various diameters as per the following specifications including 36 months guarantee etc complete.						
	MJP ELEC/MECH,Page No.93, item no. WM4						
i)	150 mm line size	No.	1	123503			123503
7	Pressure Reducing Valve						
	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						
	MJP ELEC/MECH,Page No.106, item no. SA8						
	100 mm dia	No.	1	116159			116159
	300 mm dia	No.	2	313075			626150
	400 mm dia	No.	1	525712			525712
	Mechanical Type Meters.						
8	A) Domestic Meters						
b)	Multijet meters						
	Providing, installing and giving satisfactory field testing of						

Bill of Quantities for Water Supply work for DMA 5 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Domestic water meter, horizontal inferential multijet type with magnetic drive and dry dial suitable for ambient 50° C Temperature duly sealed against tampering complete with couplings at both ends and conforming to class B as per ISO 4064 along with manufacturer's test certificate and guarantee certificate, including cost of all materials and labour etc with OIML , MID certification for Abroad and FCRI for India including 36 months guarantee etc complete (MJP Elec/Mech CSR 2018-19, section 19, WM 1 b, Page no. 74)						
	15mm	No.	147	1755			257985
	20mm	No.	3	2137			6411
	40mm	No.	10	6741			67410
9	Ultrasonic Water Meter						
A)	AMR Domestic Meters						
	Providing, installing and giving satisfactory field testing of domestic battery operated AMR water meters with no measurement of air along with manufacturing test certificate and guarantee certificate with battery life of minimum 10 years with GSM / RF technology for communication to server with PC software including 36 months guarantee, etc. complete. (MJP Elec/Mech CSR 2018-19, section 19, WM 2m A, Page no. 77 and 78)						
	15mm	No.	147	7984			1173648
	20mm	No.	3	8708			26124
	40mm	No.	10	14493			144930
			160				
					Total for material section		13028291.31
LABOUR SECTION							

Bill of Quantities for Water Supply work for DMA 5 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
10	Excavation for Water supply work						
	D.I.Pipes -K9						
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling , etc. complete. Lift 0 to 1.50 m	Cum	1801.72	145.00	7.25	152.25	274311.12
	MJP 18-19,Page No.47, item no. 1						
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	600.57	165.00	8.25	173.25	104049.05
	MJP 18-19,Page No.47, item no. 2						
iii	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	1801.72	185.00	9.25	194.25	349983.16
	MJP 18-19,Page No.47, item no. 3						
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 m to 1.5m	Cum	2654.44	454.00	22.70	476.70	1265371.98
	MJP 18-19,Page No.47, item no. 5						

Bill of Quantities for Water Supply work for DMA 5 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
V	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. Lift 0 to 1.50 m	Cum	600.57	770.00	38.50	808.50	485562.22
	MJP 18-19,Page No.48, item no. 7						
11	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)						326244.94
	MJP 18-19,Page No.73, item no. 10						
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.73, item no. 10						
i)	Dia.100	Nos.					
ii)	Dia.150	Nos.					
iii)	Dia.200	Nos.					
iv)	Dia.300	Nos.					
v)	Dia.400	Nos.					
12	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr	1236.00	64.00	3.20	67.20	83059.20

Bill of Quantities for Water Supply work for DMA 5 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP 18-19,Page No.50, item no. 14						
13	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	514.98	66.00	3.30	69.30	35687.78
	MJP 18-19,Page No.50, item no. 15						
14	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	703.30	66.00	3.30	69.30	48738.62
	MJP 18-19,Page No.51, item no. 16						
15	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	a) In PCC M-100	Cum	15.00	3751.00	187.55	3938.55	59078.25
	MJP 18-19,Page No.59, item no. 1						
16	Carriage of surplus excavated material over distance exceeding 50m including loading , unloading, spreading etc as directed.	Cum					1664189.97
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						

Bill of Quantities for Water Supply work for DMA 5 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
17	Providing and casting in situ cement concrete of trap granite/quartzite/gneiss metal of approved quality for RCC work as per the detail drawings and designs or as directed by Engineer in charge including normal dewatering, centering, formwork, compaction, finishing the form surface with CM 1:3 of sufficient minimum thickness if special finish to be provided and curing etc., complete (by weigh batching or mix design for M-250 and M-300 only. Use of L&T, ACC, Ambuja, Biral Gold, Manikgad, Rajashree etc. cement is permitted. (excluding M.S. or Tor Steel)						
	MJP 18-19, Page No.59, item no. 2						
	For foundation						
	In RCC M-250	Cum	150.00	5183.00	259.15	5442.15	816322.50
18	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire	MT	16.50	48500.00	2425.00	50925.00	840262.50
	MJP 18-19, Page No.62, item no. 8						
19	Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.						

Bill of Quantities for Water Supply work for DMA 5 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP 18-19,Page No.84, item no. 2						
	D.I. K-9						
i)	Dia.100 mm	Rmt	5,301.90	58.00	2.90	60.90	322,885.71
ii)	Dia. 200 mm	Rmt	678.80	104.00	5.20	109.20	74,124.96
iii)	Dia.300 mm	Rmt	441.10	152.00	7.60	159.60	70,399.56
iv)	Dia.400 mm	Rmt	37.30	230.00	11.50	241.50	9,007.95
20	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting,placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments,labour,operation charges,etc.required for testing.the rate under this item shall also include cost of retesting,if necessary and reinstatement to original position using water supplied by the contractor						
	MJP 18-19,Page No.93, item no. 12						
	D.I.-K-9						
i)	Dia.100 mm	Km	5.30	6,546.00	327.30	6,873.30	36,441.55
ii)	Dia. 200 mm	Km	0.68	11,508.00	575.40	12,083.40	8,202.21
iii)	Dia.300 mm	Km	0.44	16,892.00	844.60	17,736.60	7,823.61
iv)	Dia.400 mm	Km	0.04	25,549.00	1,277.45	26,826.45	1,000.63
21	Lowering, laying and jointly in position following CID/F Reflex valves, Butterfly valves and Sluice valves including cost of all labour jointly material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)						
	MJP 18-19,Page No.240, item no. 4						
i)	150mm	No.	4.00	2950.00	147.50	3097.50	12390.00

Bill of Quantities for Water Supply work for DMA 5 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
22	Providing and fixing CI road box including loading, unloading and carting to site of work including all necessary excavation in all types of starta and fixing in murum packing etc. complete.						
	MJP 18-19,Page No.388, item no. 5						
	a) 100mm x 225mm (20kg) for 100mm, 150mm, 200mm, 250mm	No.	16.00	1327.00	66.35	1393.35	22293.60
	Pressure Loggers						
23	Erection, installation, calliberation, commissioning of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	6.00	13197.00	659.85	13856.85	83141.10
	(Vendor supply item)						

Bill of Quantities for Water Supply work for DMA 5 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
24	Residual chlorine analyser						
	Erection ,installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	4.00	13197.00	659.85	13856.85	55427.40
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
25	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and rachet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						
	(RA)						
	15mm	Nos.	294.00	2022.00	101.10	2123.10	624191.40
	20mm	Nos.	6.00	2247.00	112.35	2359.35	14156.10

Bill of Quantities for Water Supply work for DMA 5 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	40mm	Nos.	20.00	3642.00	182.10	3824.10	76482.00
26	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete. Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19, Page No.88, item no. 4	Joint					200000.00
27	Repairing damage water connection to house hold including labour, materials etc. complete. (Work shall be measured and paid for, per number on actual quantity.) (RA)	Nos.	50.00	406.00	20.30	426.30	21315.00
28	Repairing to the damaged drainage connection including labour, materials etc. complete. (RA) (Work shall be measured and paid for, per running meter basis on actual quantity.)						400000.00
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
	RA						
29	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows - (RA items)						
	1) Bulk flow meter (150mm) - 3M X 3.5M X 2M	Nos	1.00	247336.00	12366.80	259702.80	259702.80
	2) Pressure loggers = 0.9M X 0.9M X 1.5M	Nos	6.00	40140.00	2007.00	42147.00	252882.00
	3) Residual quality analyser - 0.9M X 0.9M X 1.5M	Nos	4.00	40140.00	2007.00	42147.00	168588.00
	4) Pressure reducing valve (for 250 and less) - 1.2M X 1.2M X 1.5M	Nos	1.00	53618.00	2680.90	56298.90	56298.90

Bill of Quantities for Water Supply work for DMA 5 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
30	Providing and constructing B.B. masonry valve Chamber with 15 CM thick 1:3:6 proportion PCC bedding ,excluding excavation,B.B. masonry in CM 1:5 proportion precast R.C.C frame and cover etc completed as directed by Engineer-In-Charge	Nos	320.00	4149.00	207.45	4356.45	1394064.00
	Note: wall thickness:0.23 M for depth of 1.2 M and 0.35 m for balance depth exceeding 1.2 M.						
	As above 60 x 45 cm internal size and depth upto 0.90 m with precast RCC slab cover.						
	MJP schedule, MJP 18-19,Page No.385, item no. 1						
						Sub Total Labour	10523679.76
						Sub total (Material + Labour)	23551971.07

Bill of Quantities for Water Supply work for DMA 5 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Reinstatement of Road works						
	Bituminous Road						
i)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2). Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 PWD SSR 2017-18 item 2.25)	Cum	1312.82	112.00	5.60	117.60	154388.20
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	328.21	419.00	20.95	439.95	144394.32
ii)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	847.76	1606.00	80.30	1686.30	1429572.42
iii)	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver. (RA based on-PWD SSR 2017-18 item 3.23)	Cum	1412.93	1862.00	93.10	1955.10	2762415.78

Bill of Quantities for Water Supply work for DMA 5 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iv)	DENSE BITUMINOUS MACADAM --Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder,@ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-40 grade with stone dust(RA based on-PWD SSR 2017-18 item 3.45)	Cum	339.10	5558.00	277.90	5835.90	1978969.74
v)	BITUMINOUS CONCRETE --Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler(RA based on-PWD SSR 2017-18 item 3.51)	Cum	226.07	6917.00	345.85	7262.85	1641901.61
vi)	Prime Coat Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	5651.71	17	0.85	17.85	100883.07
vii)	Sr no 146 PWD SSR Item no 3.30 Tack Coat						

Bill of Quantities for Water Supply work for DMA 5 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg/sqm on the prepared bituminous/granular surface cleaned with mechanical broom. etc. complete.(Spec. No. MORTH-503)	Sqm	5651.71	8	0.40	8.40	47474.39
	Sr no 145 PWD SSR Item no 3.29						
	Concrete Road						
viii)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 PWD SSR 2017-18 item 2.25)	Cum	562.64	112.00	5.60	117.60	66166.37
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	140.66	419.00	20.95	439.95	61883.28
ix)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	363.32	1606.00	80.30	1686.30	612673.89

Bill of Quantities for Water Supply work for DMA 5 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
x)	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete.(RA based on-PWD SSR 2017-18 item 5.13)	Cum	242.22	2784.00	139.20	2923.20	708046.54
xi)	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver,compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any(RA based on-MoRTH)	Cum	678.21	5735.00	286.75	6021.75	4083983.97
xii)	Providing road lane marking (PWD SSR 2017-18 item 6.23)	Sqm	2260.69	123.00	6.15	129.15	291967.47
	Sr no 222 PWD SSR Item no 6.23						
Total cost of Road Reinstatement							14084721.03

Bill of Quantities for Water Supply work for DMA 7 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Material Section							
1	Providing and supplying at site of work DI Pipes (push on joints pressure pipes of DI of following class and Dia meters confirming to the indian Standard specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality)excluding GST levied by GOI and GOM in all respect including Thid party inspection charges of TPI Agency approved by the MJP including transit insurance,Railway frieght,unloading from railway wagon,loading in to the truck transportation to departmental store, unloading,stacking etc. completed as directed by engineer-in-charge(IS:1536:2001 for pipes and IS:158:1969 and 15:12820:1989 or latest edition/revision with amendments for rubber gaskets).(IS:8329:2000 latest version).						
	MJP 18-19,Page No.86, item no. 3						
	D.I. K-9						
i)	100mm DI K9	Rmt	3,376	793.00			2677089
ii)	150mm DI K9	Rmt	568	1151.00			653308
iii)	200mm DI K9	Rmt	6	1565.00			9234
iv)	300mm DI K9	Rmt	267	2576.00			688565
2	Providing and supplying at site of work double flange sluice valve confirming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.						
	MJP 18-19,Page No.234, item no. (2a)						

Bill of Quantities for Water Supply work for DMA 7 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Sluice Valves PN - 1 (Without bypass arrangement)						
i)	100mm	No.	35.00	5807.00			203245.00
ii)	150mm	No.	5.00	8709.00			43545.00
iii)	250mm	No.	5.00	24407.00			122035.00
iv)	300mm	No.	5.00	30986.00			154930.00
	For flow meter and PRV						
i)	100mm	No.	2.00	5807.00			11614.00
ii)	300mm	No.	6.00	30986.00			185916.00
iii)	350mm	No.	3.00	45583.00			136749.00
	Pressure Loggers						
3	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	4.00	55000.00			220000
	(Vendor supply item)						
	Residual chlorine analyser						
4	Design, installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	4.00	191451.00			765804
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						

Bill of Quantities for Water Supply work for DMA 7 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
5	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and transportation to store/site, loading, unloading and stacking, all taxes , etc complete.						
	a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269	No.					1208458.38
	b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	Kg					
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg					
	Battery Operated electromagnetic flow meter						
6	Providing, erecting, testing and commissioning of battery operated electromagnetic flow meter built in GSM (with Simcard charges for 36 months validity) of various diameters as per the following specifications including 36 months guarantee etc complete.						
	MJP ELEC/MECH,Page No.93, item no. WM4						
i)	100 mm line size	No.	2	115122			230244
7	Pressure Reducing Valve						

Bill of Quantities for Water Supply work for DMA 7 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						
	MJP ELEC/MECH,Page No.106, item no. SA8						
	300 mm dia	No.	1	323633			323633
	Mechanical Type Meters.						
8	A) Domestic Meters						
b)	Multijet meters						
	Providing, installing and giving satisfactory field testing of Domestic water meter, horizontal inferential multijet type with magnetic drive and dry dial suitable for ambient 50° C Temperature duly sealed against tampering complete with couplings at both ends and conforming to class B as per ISO 4064 along with manufacturer's test certificate and guarantee certificate, including cost of all materials and labour etc with OIML , MID certification for Abroad and FCRI for India including 36 months guarantee etc complete						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 1 b, Page no. 74)						
	15mm	No.	391	1755			686205
	20mm	No.	8	2137			17096
	25mm	No.	1	3619			3619
	40mm	No.	10	6741			67410
			410				
9	Ultrasonic Water Meter						
A)	AMR Domestic Meters						

Bill of Quantities for Water Supply work for DMA 7 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Providing, installing and giving satisfactory field testing of domestic battery operated AMR water meters with no measurement of air along with manufacturing test certificate and guarantee certificate with battery life of minimum 10 years with GSM / RF technology for communication to server with PC software including 36 months guarantee, etc. complete.						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 2m A, Page no. 77 and 78)						
	15mm	No.	391	7984			3121744
	20mm	No.	8	8708			69664
	25mm	No.	1	10154			10154
	40mm	No.	10	14493			144930
			410				
						Total for material section	11755189.98
LABOUR SECTION							
10	Excavation for Water supply work						
	D.I.Pipes -K9						
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling , etc. complete. Lift 0 to 1.50 m	Cum	1158.76	145.00	7.25	152.25	176420.65
	MJP 18-19,Page No.47, item no. 1						

Bill of Quantities for Water Supply work for DMA 7 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	386.25	165.00	8.25	173.25	66918.18
	MJP 18-19,Page No.47, item no. 2						
iii	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	1158.76	185.00	9.25	194.25	225088.41
	MJP 18-19,Page No.47, item no. 3						
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	1721.26	454.00	22.70	476.70	820525.45
	MJP 18-19,Page No.47, item no. 5						
v	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. Lift 0 to 1.50 m	Cum	386.25	770.00	38.50	808.50	312284.82

Bill of Quantities for Water Supply work for DMA 7 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP 18-19,Page No.48, item no. 7						
11	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)						201409.73
	MJP 18-19,Page No.73, item no. 10						
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.73, item no. 10						
i)	100mm DI K9	Nos.					
ii)	150mm DI K9	Nos.					
iii)	200mm DI K9	Nos.					
iv)	250mm DI K9	Nos.					
v)	300mm DI K9	Nos.					
vi)	350mm DI K9	Nos.					
vii)	500mm DI K9	Nos.					
viii)	600mm DI K10	Nos.					
12	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr	618.00	64.00	3.20	67.20	41529.60

Bill of Quantities for Water Supply work for DMA 7 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP 18-19,Page No.50, item no. 14						
13	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	317.69	66.00	3.30	69.30	22015.92
	MJP 18-19,Page No.50, item no. 15						
14	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	455.12	66.00	3.30	69.30	31539.68
	MJP 18-19,Page No.51, item no. 16						
15	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	a) In PCC M-100	Cum	15.00	3751.00	187.55	3938.55	59078.25
	MJP 18-19,Page No.59, item no. 1						
16	Carriage of surplus excavated material over distance exceeding 50m including loading , unloading, spreading etc as directed.	Cum	2521.41	406.77	20.34	427.11	1076915.86
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						

Bill of Quantities for Water Supply work for DMA 7 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
17	Providing and casting in situ cement concrete of trap granite/quartzite/gneiss metal of approved quality for RCC work as per the detail drawings and designs or as directed by Engineer in charge including normal dewatering,centering,formwork,compaction,finishing the form surface with CM 1:3 of sufficient minimum thickness if special finish to be provided and curing etc., complete (by weigh batching or mix design for M-250 and M-300 only.Use of L&T,ACC,Ambuja,Birala Gold,Manikgad,Rajashree etc. cement is permitted.(excluding M.S. or Tor Steel)						
	MJP 18-19,Page No.59, item no. 2						
	For foundation						
	In RCC M-250	Cum	150.00	5183.00	259.15	5442.15	816322.50
18	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire	MT	16.50	48500.00	2425.00	50925.00	840262.50
	MJP 18-19,Page No.62, item no. 8						

Bill of Quantities for Water Supply work for DMA 7 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
19	Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.						
	MJP 18-19,Page No.84, item no. 2						
	D.I. K-9						
i)	100mm DI K9	Rmt	3,375.90	58.00	2.90	60.90	205,592.31
ii)	150mm DI K9	Rmt	567.60	79.00	3.95	82.95	47,082.42
iii)	200mm DI K9	Rmt	5.90	104.00	5.20	109.20	644.28
20	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting,placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments,labour,operation charges,etc.required for testing.the rate under this item shall also include cost of retesting,if necessary and reinstatement to original position using water supplied by the contractor						
	MJP 18-19,Page No.93, item no. 12						
	D.I.-K-9						
i)	100mm DI K9	Km	3.38	6,546.00	327.30	6,873.30	23,203.57
ii)	150mm DI K9	Km	0.57	8,763.00	438.15	9,201.15	5,222.57
iii)	200mm DI K9	Km	0.01	11,508.00	575.40	12,083.40	71.29

Bill of Quantities for Water Supply work for DMA 7 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
21	Lowering, laying and jointly in position following CID/F Reflex valves, Butterfly valves and Sluice valves including cost of all labour jointly material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)						
	MJP 18-19,Page No.240, item no. 4						
i)	100mm	No.	37.00	1877.00	93.85	1970.85	72921.45
ii)	300mm	No.	11.00	4148.00	207.40	4355.40	47909.40
22	Providing and fixing CI road box including loading, unloading and carting to site of work including all necessary excavation in all types of starta and fixing in murum packing etc. complete.						
	MJP 18-19,Page No.388, item no. 5						
	a) 100mm x 225mm (20kg) for 100mm, 150mm, 200mm, 250mm	No.	45.00	1327.00	66.35	1393.35	62700.75
	Pressure Loggers						
23	Erection, installation, callibration, commissioning of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	4.00	13197.00	659.85	13856.85	55427.40
	(Vendor supply item)						

Bill of Quantities for Water Supply work for DMA 7 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
24	Residual chlorine analyser						
	Erection ,installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	4.00	13197.00	659.85	13856.85	55427.40
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						

Bill of Quantities for Water Supply work for DMA 7 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
25	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and ratchet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						
	(RA)						
	15mm	Nos.	782.00	2022.00	101.10	2123.10	1660264.20
	20mm	Nos.	16.00	2247.00	112.35	2359.35	37749.60
	25mm	Nos.	2.00	2327.00	116.35	2443.35	4886.70
	40mm	Nos.	20.00	3642.00	182.10	3824.10	76482.00
26	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete.	Joint					200000.00
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19, Page No.88, item no. 4						
27	Repairing damage water connection to house hold including labour, materials etc. complete.	Nos.	50.00	406.00	20.30	426.30	21315.00
	(Work shall be measured and paid for, per number on actual quantity.) (RA)						

Bill of Quantities for Water Supply work for DMA 7 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
28	Repairing to the damaged drainage connection including labour, materials etc. complete. (RA)						400000.00
	(Work shall be measured and paid for, per running meter basis on actual quantity.)						
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
	RA						
29	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows - (RA items)						
	1) Sluice valve						
	300mm (1.2M X 1.3M X 1.8M)	Nos	5.00	62315.00	3115.75	65430.75	327153.75
	2) Bulk flow meter (150mm) - 3M X 3.5M X 2M	Nos	2.00	247336.00	12366.80	259702.80	519405.60
	3) Pressure loggers = 0.9M X 0.9M X 1.5M	Nos	4.00	40140.00	2007.00	42147.00	168588.00
	4) Residual quality analyser - 0.9M X 0.9M X 1.5M	Nos	4.00	40140.00	2007.00	42147.00	168588.00
	5) Pressure reducing valve						
	400mm (1.2M X 1.3M X 1.8M)	Nos	1.00	62315.00	3115.75	65430.75	65430.75
32	Providing and constructing B.B. masonry valve Chamber with 15 CM thick 1:3:6 proportion PCC bedding ,excluding excavation,B.B. masonry in CM 1:5 proportion precast R.C.C frame and cover etc completed as directed by Engineer-In-Charge	Nos	820.00	4149.00	207.45	4356.45	3572289.00
	Note: wall thickness:0.23 M for depth of 1.2 M and 0.35 m for balance depth exceeding 1.2 M.						

Bill of Quantities for Water Supply work for DMA 7 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	As above 60 x 45 cm internal size and depth upto 0.90 m with precast RCC slab cover.						
	MJP schedule, MJP 18-19,Page No.385, item no. 1						
						Sub Total Labour	12488666.99
						Sub total (Material + Labour)	24243856.97

Bill of Quantities for Water Supply work for DMA 7 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Reinstatement of Road works							
	Bituminous Road						
i)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2). Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 PWD SSR 2017-18 item 2.25)	Cum	849.55	112.00	5.60	117.60	99907.50
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	212.39	419.00	20.95	439.95	93440.28
ii)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	553.44	1606.00	80.30	1686.30	933269.03
iii)	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver. (RA based on-PWD SSR 2017-18 item 3.23)	Cum	922.40	1862.00	93.10	1955.10	1803390.35

Bill of Quantities for Water Supply work for DMA 7 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iv)	DENSE BITUMINOUS MACADAM --Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder,@ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-40 grade with stone dust(RA based on-PWD SSR 2017-18 item 3.45)	Cum	221.38	5558.00	277.90	5835.90	1291932.58
v)	BITUMINOUS CONCRETE --Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler(RA based on-PWD SSR 2017-18 item 3.51)	Cum	147.58	6917.00	345.85	7262.85	1071884.09
vi)	Prime Coat						
	Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	3689.61	17	0.85	17.85	65859.58

Bill of Quantities for Water Supply work for DMA 7 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Sr no 145 PWD SSR Item no 3.29						

Bill of Quantities for Water Supply work for DMA 7 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
vii)	Tack Coat						
	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg/sqm on the prepared bituminous/granular surface cleaned with mechanical broom. etc. complete.(Spec. No. MORTH-503)	Sqm	3689.61	8	0.40	8.40	30992.75
	Sr no 146 PWD SSR Item no 3.30						
	Concrete Road						
viii)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting sr no 102 PWD SSR 2017-18 item 2.25)	Cum	364.09	112.00	5.60	117.60	42817.50
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	91.02	419.00	20.95	439.95	40045.83
ix)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	237.19	1606.00	80.30	1686.30	399972.44

Bill of Quantities for Water Supply work for DMA 7 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
x)	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete. (RA based on-PWD SSR 2017-18 item 5.13)	Cum	158.13	2784.00	139.20	2923.20	462234.65
xi)	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver,compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any (RA based on-MoRTH)	Cum	442.75	5735.00	286.75	6021.75	2666150.89
xii)	Providing road lane marking sr no 222 PWD SSR 2017-18 item 6.23)	Sqm	1475.85	123.00	6.15	129.15	190605.38
Total cost of Road Reinstatement							9192502.85

Bill of Quantities for Water Supply work for DMA 8 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Material Section							
1	Providing and supplying at site of work DI Pipes (push on joints pressure pipes of DI of following class and Dia meters confirming to the indian Standard specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality)excluding GST levied by GOI and GOM in all respect including Thid party inspection charges of TPI Agency approved by the MJP including transit insurance,Railway frieght,unloading from railway wagon,loading in to the truck transportation to departmental store, unloading,stacking etc. completed as directed by engineer-in-charge(IS:1536:2001 for pipes and IS:158:1969 and 15:12820:1989 or latest edition/revision with amendments for rubber gaskets).(IS:8329:2000 latest version).						
	MJP 18-19,Page No.86, item no. 3						
	D.I. K-9						
i)	100mm DI K9	Rmt	3,049	793.00			2417698
ii)	150mm DI K9	Rmt	199	1151.00			229049
iii)	200mm DI K9	Rmt	8	1565.00			12051
iv)	300mm DI K9	Rmt	359	2576.00			924784
v)	350mm DI K9	Rmt	110	3810.00			419100
vi)	450mm DI K9	Rmt	785	4640.00			3644256
vii)	500mm DI K9	Rmt	989	5314.00			5255015
2	Providing and supplying at site of work double flange sluice valve confirming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.						
	MJP 18-19,Page No.234, item no. (2a)						

Bill of Quantities for Water Supply work for DMA 8 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Sluice Valves PN - 1 (Without bypass arrangement)						
i)	100mm	No.	30.00	5807.00			174210.00
ii)	150mm	No.	4.00	8709.00			34836.00
iii)	300mm	No.	4.00	30986.00			123944.00
iv)	350mm	No.	4.00	45583.00			182332.00
v)	400mm	No.	4.00	60013.00			240052.00
	For flow meter and PRV						
i)	100mm	No.	2.00	5807.00			11614.00
ii)	150mm	No.	2.00	8709.00			17418.00
iii)	400mm	No.	2.00	60013.00			120026.00
iv)	450mm	No.	1.00	64520.00			64520.00
3	Providing and supplying kinetic double orifice type air valves confirming to IS 14845 as per MJP's standard specifications having small orifice elastic ball resting on a gun metal orifice nipple, large orifice vulcanite ball seating on moulded seat ring, with built-in kinetic features, isolating sluice valve mounted in horizontal position and operated by wheel gearing, inlet face and drilled, including insurance, third party inspection charges, loading, unloading, transportation upto departmental stores, excluding GST levied by GOI and GOM in all respect etc. complete.						
	MJP 18-19,Page No.246, item no. 9						
	b) Kinetic Air valve flanged, Type PN - 1.6						
	200mm	No.	1.00	30341.00			30341.00
	Pressure Loggers						
4	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	2.00	55000.00			110000

Bill of Quantities for Water Supply work for DMA 8 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	(Vendor supply item)						
	Residual chlorine analyser						
5	Design, installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	4.00	191451.00			765804
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
6	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and tranportation to store/site, loading, unloading and stacking, all taxes , etc complete.						
	a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269	No.					2294081.37
	b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	Kg					
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg					
	Betty Operated electromagnetic flow meter						

Bill of Quantities for Water Supply work for DMA 8 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
7	Providing, erecting, testing and commissioning of battery operated electromagnetic flow meter built in GSM (with Simcard charges for 36 months validity) of various diameters as per the following specifications including 36 months guarantee etc complete.						
	MJP ELEC/MECH,Page No.93, item no. WM4						
i)	100 mm line size	No.	1	115122			115122
8	Pressure Reducing Valve						
	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						
	MJP ELEC/MECH,Page No.106, item no. SA8						
	100 mm dia	No.	1	126717			126717
	300 mm dia	No.	1	323336			323336
	Mechanical Type Meters.						
9	A) Domestic Meters						
b)	Multijet meters						
	Providing, installing and giving satisfactory field testing of Domestic water meter, horizontal inferential multijet type with magnetic drive and dry dial suitable for ambient 50° C Temperature duly sealed against tampering complete with couplings at both ends and conforming to class B as per ISO 4064 along with manufacturer's test certificate and guarantee certificate, including cost of all materials and labour etc with OIML , MID certification for Abroad and FCRI for India including 36 months guarantee etc complete						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 1 b, Page no. 74)						
	15mm	No.	146	1755			256230
	20mm	No.	3	2137			6411

Bill of Quantities for Water Supply work for DMA 8 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	25mm	No.	1	3619			3619
	40mm	No.	10	6741			67410
			160				
10	Ultrasonic Water Meter						
A)	AMR Domestic Meters						
	Providing, installing and giving satisfactory field testing of domestic battery operated AMR water meters with no measurement of air along with manufacturing test certificate and guarantee certificate with battery life of minimum 10 years with GSM / RF technology for communication to server with PC software including 36 months guarantee, etc. complete.						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 2m A, Page no. 77 and 78)						
	15mm	No.	146	7984			1165664
	20mm	No.	3	8708			26124
	25mm	No.	1	10154			10154
	40mm	No.	10	14493			144930
			160				
Total for material section							19316847.87
LABOUR SECTION							
11	Excavation for Water supply work						
	D.I.Pipes -K9						
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling , etc. complete. Lift 0 to 1.50 m	Cum	1444.43	145.00	7.25	152.25	219914.07
	MJP 18-19,Page No.47, item no. 1						

Bill of Quantities for Water Supply work for DMA 8 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	481.48	165.00	8.25	173.25	83415.68
	MJP 18-19,Page No.47, item no. 2						
iii	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	1444.43	185.00	9.25	194.25	280580.02
	MJP 18-19,Page No.47, item no. 3						
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 m to 1.5m	Cum	1977.68	454.00	22.70	476.70	942759.63
	MJP 18-19,Page No.47, item no. 5						
v	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. Lift 1.50 to 3.0 m	Cum	481.48	791.00	39.55	830.55	399889.73
	MJP 18-19,Page No.48, item no. 7						

Bill of Quantities for Water Supply work for DMA 8 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
12	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)						382346.90
	MJP 18-19,Page No.73, item no. 10						
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.73, item no. 10						
i)	Dia.100	Nos.					
ii)	Dia.150	Nos.					
iii)	Dia.200	Nos.					
iv)	Dia.250	Nos.					
v)	Dia.300	Nos.					
vi)	Dia.400	Nos.					
vii)	Dia.500	Nos.					
13	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr	618.00	64.00	3.20	67.20	41529.60
	MJP 18-19,Page No.50, item no. 14						

Bill of Quantities for Water Supply work for DMA 8 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
14	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	553.16	66.00	3.30	69.30	38333.99
	MJP 18-19,Page No.50, item no. 15						
15	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	531.28	66.00	3.30	69.30	36817.43
	MJP 18-19,Page No.51, item no. 16						
16	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	a) In PCC M-100	Cum	15.00	3751.00	187.55	3938.55	59078.25
	MJP 18-19,Page No.59, item no. 1						
17	Carriage of surplus excavated material over distance exceeding 50m includig loading , unloading, spreading etc as directed.	Cum					836877.25
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						

Bill of Quantities for Water Supply work for DMA 8 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
18	Providing and casting in situ cement concrete of trap granite/quartzite/gneiss metal of approved quality for RCC work as per the detail drawings and designs or as directed by Engineer in charge including normal dewatering,centering,formwork,compaction,finishing the form surface with CM 1:3 of sufficient minimum thickness if special finish to be provided and curing etc., complete (by weigh batching or mix design for M-250 and M-300 only.Use of L&T,ACC,Ambuja,Birala Gold,Manikgad,Rajashree etc. cement is permitted.(excluding M.S. or Tor Steel)						
	MJP 18-19,Page No.59, item no. 2						
	For foundation						
	In RCC M-250	Cum	150.00	5183.00	259.15	5442.15	816322.50
19	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire	MT	16.50	48500.00	2425.00	50925.00	840262.50
20	Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.						

Bill of Quantities for Water Supply work for DMA 8 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP 18-19,Page No.84, item no. 2						
	D.I. K-9						
i)	100mm DI K9	Rmt	3,048.80	58.00	2.90	60.90	185,671.92

Bill of Quantities for Water Supply work for DMA 8 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
ii)	150mm DI K9	Rmt	199.00	79.00	3.95	82.95	16,507.05
iii)	200mm DI K9	Rmt	7.70	104.00	5.20	109.20	840.84
iv)	300mm DI K9	Rmt	359.00	152.00	7.60	159.60	57,296.40
iv)	350mm DI K9	Rmt	110.00	230.00	11.50	241.50	26,565.00
v)	450mm DI K9	Rmt	785.40	242.00	12.10	254.10	199,570.14
21	Lowering, laying and fixing in proper alignment and position all types of C.I. air valevs as directed by engineer-in charge including cost of conveyance from stores to site of work, cost of all materialand giving satisfactory hydraullice testing, etc. complete. (for all class valves)						
	MJP 18-19,Page No.247, item no. 10						
	b) Air valve double ball (PN-1 and PN-1.6)						
	200mm	No	1.00	662.00	33.10	695.10	695.10
22	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting,placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments,labour,operation charges,etc.required for testing.the rate under this item shall also include cost of retesting,if necessary and reinstatement to original position using water supplied by the contractor						
	MJP 18-19,Page No.93, item no. 12						
	D.I.-K-9						
i)	100mm DI K9	Km	3.05	6,546.00	327.30	6,873.30	20,955.32
ii)	150mm DI K9	Km	0.20	8,763.00	438.15	9,201.15	1,831.03
iii)	200mm DI K9	Km	0.01	11,508.00	575.40	12,083.40	93.04
iv)	300mm DI K9	Km	0.36	16,892.00	844.60	17,736.60	6,367.44
v)	350mm DI K9	Km	0.11	25,549.00	1,277.45	26,826.45	2,950.91

Bill of Quantities for Water Supply work for DMA 8 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
vi)	450mm DI K9	Km	0.79	26,922.00	1,346.10	28,268.10	22,201.77
vii)	500mm DI K9	Km	0.79	31039	1551.95	32590.95	25,597

Bill of Quantities for Water Supply work for DMA 8 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
23	Lowering, laying and jointly in position following CID/F Reflex valves, Butterfly valves and Sluice valves including cost of all labour jointly material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)						
	MJP 18-19,Page No.240, item no. 4						
i)	100mm	No.	32.00	1877.00	93.85	1970.85	63067.20
iii)	150mm	No.	6.00	2950.00	147.50	3097.50	18585.00
iii)	400mm	No.	6.00	6167.00	308.35	6475.35	38852.10
24	Providing and fixing CI road box including loading, unloading and carting to site of work including all necessary excavation in all types of starta and fixing in murum packing etc. complete.						
	MJP 18-19,Page No.388, item no. 5						
	a) 100mm x 225mm (20kg) for 100mm, 150mm, 200mm, 250mm	No.	34.00	1327.00	66.35	1393.35	47373.90
	Pressure Loggers						
25	Erection, installation, calliberation, commissioning of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	2.00	13197.00	659.85	13856.85	27713.70
	(Vendor supply item)						

Bill of Quantities for Water Supply work for DMA 8 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
26	Residual chlorine analyser						
	Erection ,installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	4.00	13197.00	659.85	13856.85	55427.40
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
27	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and ratchet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						
	(RA)						
	15mm	Nos.	292.00	2022.00	101.10	2123.10	619945.20
	20mm	Nos.	6.00	2247.00	112.35	2359.35	14156.10

Bill of Quantities for Water Supply work for DMA 8 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	25mm	Nos.	2.00	2327.00	116.35	2443.35	4886.70
	40mm	Nos.	20.00	3642.00	182.10	3824.10	76482.00
28	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete. Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.88, item no. 4	Joint					200000.00
29	Repairing damage water connection to house hold including labour, materials etc. complete. (Work shall be measured and paid for, per number on actual quantity.) (RA)	Nos.	50.00	406.00	20.30	426.30	21315.00
30	Repairing to the damaged drainage connection including labour, materials etc. complete. (RA) (Work shall be measured and paid for, per running meter basis on actual quantity.)						400000.00
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
	RA						
31	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows - (RA items)						
	1) Sluice valve (250mm and less)						
	300mm (1.2M X 1.3M X 1.8M)	Nos	4.00	62315.00	3115.75	65430.75	261723.00
	350mm (1.2M X 1.3M X 1.8M)	Nos	4.00	62315.00	3115.75	65430.75	261723.00
	400mm (1.2M X 1.3M X 1.8M)	Nos	4.00	62315.00	3115.75	65430.75	261723.00
	2)Bulk flow meter (100mm) - 3M X 3.5M X 2M	Nos	1.00	247336.00	12366.80	259702.80	259702.80

Bill of Quantities for Water Supply work for DMA 8 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	3) Pressure loggers = 0.9M X 0.9M X 1.5M	Nos	2.00	40140.00	2007.00	42147.00	84294.00
	4) Residual quality analyser - 0.9M X 0.9M X 1.5M	Nos	4.00	40140.00	2007.00	42147.00	168588.00
	5) Air valve - 1.2M X 1.2M X 1.5M	Nos	1.00	53618.00	2680.90	56298.90	56298.90
	6)Pressure reducing valve (for 250 and less) - 1.2M X 1.2M X 1.5M	Nos	1.00	53618.00	2680.90	56298.90	56298.90
	300mm (1.2M X 1.3M X 1.8M)	Nos	1.00	62315.00	3115.75	65430.75	65430.75
32	Providing and constructing B.B. masonry valve Chamber with 15 CM thick 1:3:6 proportion PCC bedding ,excluding excavation,B.B. masonry in CM 1:5 proportion precast R.C.C frame and cover etc completed as directed by Engineer-In-Charge	Nos	320.00	4149.00	207.45	4356.45	1394064.00
	Note: wall thickness:0.23 M for depth of 1.2 M and 0.35 m for balance depth exceeding 1.2 M.						
	As above 60 x 45 cm internal size and depth upto 0.90 m with precast RCC slab cover.						
	MJP schedule, MJP 18-19,Page No.385, item no. 1						
						Sub Total Labour	10002921.07
						Sub total (Material + Labour)	29319768.94

Bill of Quantities for Water Supply work for DMA 8 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Reinstatement of Road works							
Bituminous Road							
i)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2). Spec. No. MORTH -305						
	From Material available from road way cutting (PWD SSR 2017-18 item 2.25)	Cum	1416.74	112.00	5.60	117.60	166608.15
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	354.18	419.00	20.95	439.95	155823.25
ii)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	845.61	1606.00	80.30	1686.30	1425945.82
iii)	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver. (RA based on-PWD SSR 2017-18 item 3.23)	Cum	1409.34	1862.00	93.10	1955.10	2755407.97

Bill of Quantities for Water Supply work for DMA 8 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iv)	DENSE BITUMINOUS MACADAM --Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder, @ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-40 grade with stone dust (RA based on-PWD SSR 2017-18 item 3.45)	Cum	338.24	5558.00	277.90	5835.90	1973949.41
v)	BITUMINOUS CONCRETE --Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler (RA based on-PWD SSR 2017-18 item 3.51)	Cum	225.50	6917.00	345.85	7262.85	1637736.36
vi)	Prime Coat						
	Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	5637.38	17	0.85	17.85	100627.14
vii)	Tack Coat						

Bill of Quantities for Water Supply work for DMA 8 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg/sqm on the prepared bituminous/granular surface cleaned with mechanical broom. etc. complete.(Spec. No. MORTH-503)	Sqm	5637.38	8	0.40	8.40	47353.95
	Concrete Road						
viii)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting (PWD SSR 2017-18 item 2.25)	Cum	425.02	112.00	5.60	117.60	49982.45
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	106.26	419.00	20.95	439.95	46746.98
ix)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	253.68	1606.00	80.30	1686.30	427783.75

Bill of Quantities for Water Supply work for DMA 8 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
x)	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete.(RA based on-PWD SSR 2017-18 item 5.13)	Cum	169.12	2784.00	139.20	2923.20	494375.24
xi)	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver,compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any(RA based on-MoRTH)	Cum	473.54	5735.00	286.75	6021.75	2851536.48
xii)	Providing road lane marking (PWD SSR 2017-18 item 6.23)	Sqm	1924.58	123.00	6.15	129.15	248559.51
Total cost of Road Reinstatement							12382436.45

Bill of Quantities for Water Supply work for DMA 10 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Material Section							
1	Providing and supplying at site of work DI Pipes (push on joints pressure pipes of DI of following class and Dia meters confirming to the indian Standard specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality)excluding GST levied by GOI and GOM in all respect including Thid party inspection charges of TPI Agency approved by the MJP including transit insurance,Railway frieght,unloading from railway wagon,loading in to the truck transportation to departmental store, unloading,stacking etc. completed as directed by engineer-in-charge(IS:1536:2001 for pipes and IS:158:1969 and 15:12820:1989 or latest edition/revision with amendments for rubber gaskets).(IS:8329:2000 latest version).						
	MJP 18-19,Page No.86, item no. 3						
	D.I. K-9						
i)	100mm DI K9	Rmt	1,236	793.00			979751.50
ii)	150mm DI K9	Rmt	1,159	1151.00			1334469.40
iii)	200mm DI K9	Rmt	13	1565.00			20814.50
2	Providing and supplying at site of work double flange sluice valve confirming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.						
	MJP 18-19,Page No.234, item no. (2a)						

Bill of Quantities for Water Supply work for DMA 10 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Sluice Valves PN - 1 (Without bypass arrangement)						
i)	100mm	No.	8.00	5807.00			46456.00
ii)	150mm	No.	2.00	8709.00			17418.00
	For flow meter						
i)	150mm	No.	6.00	8709.00			52254.00
ii)	300mm	No.	2.00	30986.00			61972.00
iii)	500mm	No.	3.00	92991.00			278973.00
3	Providing and supplying kinetic double orifice type air valves confirming to IS 14845 as per MJP's standard specifications having small orifice elastic ball resting on a gun metal orifice nipple, large orifice vulcanite ball seating on moulded seat ring, with built-in kinetic features, isolating sluice valve mounted in horizontal position and operated by wheel gearing, inlet face and drilled, including insurance, third party inspection charges, loading, unloading, transportation upto departmental stores, excluding GST levied by GOI and GOM in all respect etc. complete.						
	MJP 18-19,Page No.246, item no. 9						
	b) Kinetic Air valve flanged, Type PN - 1.6						
	200mm	No.	3.00	30341.00			91023.00
	Pressure Loggers						
4	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	4.00	55000.00			220000

Bill of Quantities for Water Supply work for DMA 10 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
5	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and transportation to store/site, loading, unloading and stacking, all taxes, etc complete.						
	a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269	No.					700510.62
	b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	Kg					
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg					
	Battery Operated electromagnetic flow meter						
6	Providing, erecting, testing and commissioning of battery operated electromagnetic flow meter built in GSM (with Simcard charges for 36 months validity) of various diameters as per the following specifications including 36 months guarantee etc complete.						
	MJP ELEC/MECH,Page No.93, item no. WM4						
i)	150 mm line size	No.	1	123503			123503
7	Pressure Reducing Valve						
	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						
	MJP ELEC/MECH,Page No.106, item no. SA8						
	100 mm dia	No.	1	126717			126717
	200 mm dia	No.	1	206052			206052
	400 mm dia	No.	1	536270			536270

Bill of Quantities for Water Supply work for DMA 10 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Mechanical Type Meters.						
8	A) Domestic Meters						
b)	Multijet meters						
	Providing, installing and giving satisfactory field testing of						
	Domestic water meter, horizontal inferential multijet type						
	with magnetic drive and dry dial suitable for ambient 50° C						
	Temperature duly sealed against tampering complete with						
	couplings at both ends and conforming to class B as per						
	ISO 4064 along with manufacturer's test certificate and						
	guarantee certificate, including cost of all materials and						
	labour etc with OIML , MID certification for Abroad and						
	FCRI for India including 36 months guarantee etc complete						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 1 b, Page no. 74)						
	15mm	No.	193	1755			338715
	20mm	No.	4	2137			8548
	25mm	No.	3	3619			10857
	40mm	No.	50	6741			337050
			250				
9	Ultrasonic Water Meter						
A)	AMR Domestic Meters						
	Providing, installing and giving satisfactory field testing of						
	domestic battery operated AMR water meters with no						
	measurement of air along with manufacturing test certificate						
	and guarantee certificate with battery life of minimum 10 years						
	with GSM / RF technology for communication to server with PC						
	software including 36 months guarantee, etc. complete.						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 2m A, Page no. 77 and 78)						
	15mm	No.	193	7984			1540912
	20mm	No.	4	8708			34832
	25mm	No.	3	10154			30462
	40mm	No.	50	14493			724650

Bill of Quantities for Water Supply work for DMA 10 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
			250				
						Total for material section	7822210.02
LABOUR SECTION							
10	Excavation for Water supply work						
	D.I.Pipes -K9						
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling , etc. complete. Lift 0 to 1.50 m	Cum	853.79	145.00	7.25	152.25	129990.02
MJP 18-19,Page No.47, item no. 1							
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	284.60	165.00	8.25	173.25	49306.56
MJP 18-19,Page No.47, item no. 2							
iii	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	853.79	185.00	9.25	194.25	165849.34
MJP 18-19,Page No.47, item no. 3							

Bill of Quantities for Water Supply work for DMA 10 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 m to 1.5m	Cum	1217.96	454.00	22.70	476.70	580601.77
MJP 18-19,Page No.47, item no. 5							
v	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. Lift 0 to 1.50 m	Cum	284.60	791.00	39.55	830.55	236372.66
MJP 18-19,Page No.48, item no. 7							
11	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)						116751.77
MJP 18-19,Page No.73, item no. 10							
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.73, item no. 10						
i)	Dia.100	Nos.					
ii)	Dia.150	Nos.					
iii)	Dia.200	Nos.					
iv)	Dia.250	Nos.					

Bill of Quantities for Water Supply work for DMA 10 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
v	Dia.300	Nos.					
vi)	Dia.400	Nos.					
vii)	Dia.500	Nos.					
12	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr	618.00	64.00	3.20	67.20	41529.60
	MJP 18-19,Page No.50, item no. 14						
13	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	283.18	66.00	3.30	69.30	19624.37
	MJP 18-19,Page No.50, item no. 15						
14	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	325.91	66.00	3.30	69.30	22585.42
	MJP 18-19,Page No.51, item no. 16						
15	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	a) In PCC M-100	Cum	15.00	3751.00	187.55	3938.55	59078.25
	MJP 18-19,Page No.59, item no. 1						
16	Carriage of surplus excavated material over distance exceeding 50m includig loading , unloading, spreading etc as directed.	Cum					768494

Bill of Quantities for Water Supply work for DMA 10 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						
17	Providing and casting in situ cement concrete of trap granite/quartzite/gneiss metal of approved quality for RCC work as per the detail drawings and designs or as directed by Engineer in charge including normal dewatering,centering,formwork,compaction,finishing the form surface with CM 1:3 of sufficient minimum thickness if special finish to be provided and curing etc., complete (by weigh batching or mix design for M-250 and M-300 only.Use of L&T,ACC,Ambuja,Birala Gold,Manikgad,Rajashree etc. cement is permitted.(excluding M.S. or Tor Steel)						
	MJP 18-19,Page No.59, item no. 2						
	For foundation						
	In RCC M-250	Cum	150.00	5183.00	259.15	5442.15	816322.50
18	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire	MT	16.50	48500.00	2425.00	50925.00	840262.50
	MJP 18-19,Page No.62, item no. 8						

Bill of Quantities for Water Supply work for DMA 10 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
19	Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.						
	MJP 18-19,Page No.84, item no. 2						
	D.I. K-9						
i)	100mm DI K9	Rmt	1,235.50	58.00	2.90	60.90	75,241.95
ii)	150mm DI K9	Rmt	1,159.40	79.00	3.95	82.95	96,172.23
iii)	200mm DI K9	Rmt	13.30	104.00	5.20	109.20	1,452.36
20	Lowering, laying and fixing in proper alignment and position all types of C.I. air valevs as directed by engineer-in charge including cost of conveyance from stores to site of work, cost of all materialand giving satisfactory hydraullice testing, etc. complete. (for all class valves)						
	MJP 18-19,Page No.247, item no. 10						
	b) Air valve double ball (PN-1 and PN-1.6)						
	200mm	No	3.00	662.00	33.10	695.10	2,085.30
21	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting,placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments,labour,operation charges,etc.required for testing.the rate under this item shall also include cost of retesting,if necessary and reinstatement to original position using water supplied by the contractor						

Bill of Quantities for Water Supply work for DMA 10 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP 18-19,Page No.93, item no. 12						
	D.I.-K-9						
i)	100mm DI K9	Km	1.24	6,546.00	327.30	6,873.30	8,491.96
ii)	150mm DI K9	Km	1.16	8,763.00	438.15	9,201.15	10,667.81
iii)	200mm DI K9	Km	0.01	11,508.00	575.40	12,083.40	160.71
22	Lowering, laying and jointly in position following CID/F Reflex valves, Butterfly valves and Sluice valves including cost of all labour jointly material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)						
	MJP 18-19,Page No.240, item no. 4						
i)	150mm	No.	8.00	2950.00	147.50	3097.50	24780.00
23	Providing and fixing CI road box including loading, unloading and carting to site of work including all necessary excavation in all types of starta and fixing in murum packing etc. complete.						
	MJP 18-19,Page No.388, item no. 5						
	a) 100mm x 225mm (20kg) for 100mm, 150mm, 200mm, 250mm	No.	10.00	1327.00	66.35	1393.35	13933.50
	Pressure Loggers						
24	Erection, installation, calliberation, commissioning of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	4.00	13197.00	659.85	13856.85	55427.40
	(Vendor supply item)						

Bill of Quantities for Water Supply work for DMA 10 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
25	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and ratchet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						
	(RA)						
	15mm	Nos.	386.00	2022.00	101.10	2123.10	819516.60
	20mm	Nos.	8.00	2247.00	112.35	2359.35	18874.80
	25mm	Nos.	6.00	2327.00	116.35	2443.35	14660.10
	40mm	Nos.	100.00	3642.00	182.10	3824.10	382410.00
26	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete.	Joint					200000.00
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.88, item						
27	Repairing damage water connection to house hold including labour, materials etc. complete.	Nos.	50.00	406.00	20.30	426.30	21315.00
	(Work shall be measured and paid for, per number on actual quantity.) (RA)						
28	Repairing to the damaged drainage connection including labour, materials etc. complete. (RA)						400000.00
	(Work shall be measured and paid for, per running meter basis on actual quantity.)						

Bill of Quantities for Water Supply work for DMA 10 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
	RA						
29	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows - (RA items)						
	1) Bulk flow meter (150mm) - 3M X 3.5M X 2M	Nos	1.00	247336.00	12366.80	259702.80	259702.80
	2) Pressure loggers = 0.9M X 0.9M X 1.5M	Nos	4.00	40140.00	2007.00	42147.00	168588.00
	3) Air valve - 1.2M X 1.2M X 1.5M	Nos	3.00	53618.00	2680.90	56298.90	168896.70
	4) Pressure reducing valve (for 250 and less) - 1.2M X 1.2M X 1.5M	Nos	2.00	53618.00	2680.90	56298.90	112597.80
	400mm (1.2M X 1.3M X 1.8M)	Nos	1.00	62315.00	3115.75	65430.75	65430.75
30	Providing and constructing B.B. masonry valve Chamber with 15 CM thick 1:3:6 proportion PCC bedding ,excluding excavation,B.B. masonry in CM 1:5 proportion precast R.C.C frame and cover etc completed as directed by Engineer-In-Charge	Nos	500.00	4149.00	207.45	4356.45	2178225.00
	Note: wall thickness:0.23 M for depth of 1.2 M and 0.35 m for balance depth exceeding 1.2 M.						
	As above 60 x 45 cm internal size and depth upto 0.90 m with precast RCC slab cover.						
	MJP schedule, MJP 18-19,Page No.385, item no. 1						
Sub Total Labour							8945399.52
Sub total (Material + Labour)							16767609.54

Bill of Quantities for Water Supply work for DMA 10 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Reinstatement of Road works							
	Bituminous Road						
i)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 PWD SSR 2017-18 item 2.25)	Cum	608.36	112.00	5.60	117.60	71543.32
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	152.09	419.00	20.95	439.95	66912.17
ii)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	378.45	1606.00	80.30	1686.30	638173.91
iii)	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver. (RA based on-PWD SSR 2017-18 item 3.23)	Cum	630.74	1862.00	93.10	1955.10	1233167.11

Bill of Quantities for Water Supply work for DMA 10 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iv)	DENSE BITUMINOUS MACADAM :--Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder, @ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-40 grade with stone dust(RA based on-PWD SSR 2017-18 item 3.45)	Cum	151.38	5558.00	277.90	5835.90	883429.79
v)	BITUMINOUS CONCRETE :--Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler(RA based on-PWD SSR 2017-18 item 3.51)	Cum	100.92	6917.00	345.85	7262.85	732959.56
vi)	Prime Coat						
	Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	2522.98	17	0.85	17.85	45035.10
	Sr no 145 PWD SSR Item no 3.29						
vii)	Tack Coat						

Bill of Quantities for Water Supply work for DMA 10 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg/sqm on the prepared bituminous/granular surface cleaned with mechanical broom. etc. complete.(Spec. No. MORTH-503)	Sqm	2522.98	8	0.40	8.40	21192.99
	Sr no 146 PWD SSR Item no 3.30						
	Concrete Road						
viii)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 PWD SSR 2017-18 item 2.25)	Cum	260.73	112.00	5.60	117.60	30661.42
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	65.18	419.00	20.95	439.95	28676.64
ix)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	162.19	1606.00	80.30	1686.30	273503.10

Bill of Quantities for Water Supply work for DMA 10 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
x)	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete.(RA based on-PWD SSR 2017-18 item 5.13)	Cum	108.13	2784.00	139.20	2923.20	316078.31
xi)	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver,compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any(RA based on-MORTH)	Cum	302.76	5735.00	286.75	6021.75	1823126.96
xii)	Providing road lane marking Sr no 222 PWD SSR 2017-18 item 6.23)	Sqm	1009.19	123.00	6.15	129.15	130336.89
Total cost of Road Reinstatement							6294797.29

Bill of Quantities for Water Supply work for DMA 11 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Material Section							
1	Providing and supplying at site of work DI Pipes (push on joints pressure pipes of DI of following class and Dia meters confirming to the indian Standard specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality)excluding GST levied by GOI and GOM in all respect including Thid party inspection charges of TPI Agency approved by the MJP including transit insurance,Railway frieght,unloading from railway wagon,loading in to the truck transportation to departmental store, unloading,stacking etc. completed as directed by engineer-in-charge(IS:1536:2001 for pipes and IS:158:1969 and 15:12820:1989 or latest edition/revision with amendments for rubber gaskets).(IS:8329:2000 latest version).						
	MJP 18-19,Page No.86, item no. 3						
	D.I. K-9						
i)	100mm DI K9	Rmt	1,741	793.00			1380850.90
ii)	150mm DI K9	Rmt	165	1151.00			189915.00
iii)	200mm DI K9	Rmt	497	1565.00			778118.00
iv)	300mm DI K9	Rmt	2	2576.00			5667.20
v)	350mm DI K9	Rmt	178	3268.00			582357.60
2	Providing and supplying at site of work double flange sluice valve confirming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.						
	MJP 18-19,Page No.234, item no. (2a)						
	Sluice Valves PN - 1 (Without bypass arrangement)						

Bill of Quantities for Water Supply work for DMA 11 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
i)	100mm	No.	14.00	5807.00			81298.00
ii)	150mm	No.	2.00	8709.00			17418.00
	For flow meter & PRV						
i)	300mm	No.	4.00	30986.00			123944.00
	Pressure Loggers						
3	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	4.00	55000.00			220000
	(Vendor supply item)						
4	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and transportation to store/site, loading, unloading and stacking, all taxes , etc complete.						
	a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269	No.	0				881072.61
	b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	Kg	0				
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg	0				
5	Pressure Reducing Valve						
	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						
	MJP ELEC/MECH,Page No.106, item no. SA8						
	150 mm dia	No.	1	153018			153018
	200 mm dia	No.	1	195494			195494

Bill of Quantities for Water Supply work for DMA 11 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Mechanical Type Meters.						
6	A) Domestic Meters						
	b) Multijet meters						
	Providing, installing and giving satisfactory field testing of Domestic water meter, horizontal inferential multijet type with magnetic drive and dry dial suitable for ambient 50° C Temperature duly sealed against tampering complete with couplings at both ends and conforming to class B as per ISO 4064 along with manufacturer's test certificate and guarantee certificate, including cost of all materials and labour etc with OIML , MID certification for Abroad and FCRI for India including 36 months guarantee etc complete						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 1 b, Page no. 74)						
	15mm	No.	196	1755			343980
	20mm	No.	4	2137			8548
	40mm	No.	10	6741			67410
7	Ultrasonic Water Meter						
	A) AMR Domestic Meters						
	Providing, installing and giving satisfactory field testing of domestic battery operated AMR water meters with no measurement of air along with manufacturing test certificate and guarantee certificate with battery life of minimum 10 years with GSM / RF technology for communication to server with PC software including 36 months guarantee, etc. complete.						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 2m A, Page no. 77 and 78)						
	15mm	No.	196	7984			1564864
	20mm	No.	4	8708			34832

Bill of Quantities for Water Supply work for DMA 11 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	40mm	No.	10	14493			144930
Total for material section							6773717.31
LABOUR SECTION							
8	Excavation for Water supply work						
	D.I.Pipes -K9						
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling , etc. complete. Lift 0 to 1.50 m	Cum	743.49	145.00	7.25	152.25	113196.10
	MJP 18-19,Page No.47, item no. 1						
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50	Cum	247.83	165.00	8.25	173.25	42936.45
	MJP 18-19,Page No.47, item no. 2						
III	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	743.49	185.00	9.25	194.25	144422.61
	MJP 18-19,Page No.47, item no. 3						

Bill of Quantities for Water Supply work for DMA 11 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
IV	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 m to 1.5m	Cum	1077.04	454.00	22.70	476.70	513423.25
	MJP 18-19,Page No.47, item no. 5						
V	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. Lift 0 to 1.50 m	Cum	247.83	770.00	38.50	808.50	200370.11
	MJP 18-19,Page No.48, item no. 7						
9	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)						146845.44
	MJP 18-19,Page No.73, item no. 10						
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.73, item no. 10						
i)	Dia.100	Nos.					
ii)	Dia.150	Nos.					

Bill of Quantities for Water Supply work for DMA 11 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iii)	Dia.200	Nos.					
iv)	Dia.250	Nos.					
v)	Dia.300	Nos.					
vi)	Dia.400	Nos.					
vii)	Dia.500	Nos.					
10	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr	618.00	64.00	3.20	67.20	41529.60
	MJP 18-19,Page No.50, item no. 14						
11	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	230.36	66.00	3.30	69.30	15963.95
	MJP 18-19,Page No.50, item no. 15						
12	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	286.75	66.00	3.30	69.30	19872.02
	MJP 18-19,Page No.51, item no. 16						
13	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	a) In PCC M-100	Cum	15.00	3751.00	187.55	3938.55	59078.25
	MJP 18-19,Page No.59, item no. 1						

Bill of Quantities for Water Supply work for DMA 11 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
14	Carriage of surplus excavated material over distance exceeding 50m includig loading , unloading, spreading etc as directed.	Cum	1586.71	406.77	20.34	427.11	677698.82
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						
15	Providing and casting in situ cement concrete of trap granite/quartzite/gneiss metal of approved quality for RCC work as per the detail drawings and designs or as directed by Engineer in charge including normal dewatering,centering,formwork,compaction,finishing the form surface with CM 1:3 of sufficient minimum thickness if special finish to be provided and curing etc., complete (by weigh batching or mix design for M-250 and M-300 only.Use of L&T,ACC,Ambuja,Birala Gold,Manikgad,Rajashree etc. cement is permitted.(excluding M.S. or Tor Steel)						
	MJP 18-19,Page No.59, item no. 2						
	For foundation						
	In RCC M-250	Cum	150.00	5183.00	259.15	5442.15	816322.50
16	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire	MT	16.50	48500.00	2425.00	50925.00	840262.50
	MJP 18-19,Page No.62, item no. 8						

Bill of Quantities for Water Supply work for DMA 11 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
17	Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.						
	MJP 18-19,Page No.84, item no. 2						
	D.I. K-9						
i)	100mm DI K9	Rmt	1,741.30	58.00	2.90	60.90	106,045.17
ii)	150mm DI K9	Rmt	165.00	79.00	3.95	82.95	13,686.75
iii)	200mm DI K9	Rmt	497.20	104.00	5.20	109.20	54,294.24
v)	300mm DI K9	Rmt	2.20	152.00	7.60	159.60	351.12
vi)	350mm DI K9	Rmt	178.20	186.00	9.30	195.30	34,802.46
18	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting,placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments,labour,operation charges,etc.required for testing.the rate under this item shall also include cost of retesting,if necessary and reinstatement to original position using water supplied by the contractor						
	MJP 18-19,Page No.93, item no. 12						
	D.I.-K-9						
i)	100mm DI K9	Km	1.74	6,546.00	327.30	6,873.30	11,968.48
ii)	150mm DI K9	Km	0.17	8,763.00	438.15	9,201.15	1,518.19

Bill of Quantities for Water Supply work for DMA 11 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iii)	200mm DI K9	Km	0.50	11,508.00	575.40	12,083.40	6,007.87
iv)	300mm DI K9	Km	0.00	16,892.00	844.60	17,736.60	39.02
v)	350mm DI K9	Km	0.18	20,587.00	1,029.35	21,616.35	3,852.03
19	Lowering, laying and jointly in position following CID/F Reflex valves, Butterfly valves and Sluice valves including cost of all labour jointly material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)						
	MJP 18-19,Page No.240, item no. 4						
i)	100mm	No.	14.00	1877.00	93.85	1970.85	27591.90
ii)	150mm	No.	2.00	2950.00	147.50	3097.50	6195.00
iii)	300mm	No.	4.00	4148.00	207.40	4355.40	17421.60
20	Providing and fixing CI road box including loading, unloading and carting to site of work including all necessary excavation in all types of starta and fixing in murum packing etc. complete.						
	MJP 18-19,Page No.388, item no. 5						
	a) 100mm x 225mm (20kg) for 100mm, 150mm, 200mm, 250mm	No.	16.00	1327.00	66.35	1393.35	22293.60
	Pressure Loggers						
21	Erection, installation, calliberation, commissioning of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	4.00	13197.00	659.85	13856.85	55427.40
	(Vendor supply item)						

Bill of Quantities for Water Supply work for DMA 11 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
22	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and ratchet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						
	(RA)						
	15mm	Nos.	392.00	2022.00	101.10	2123.10	832255.20
	20mm	Nos.	8.00	2247.00	112.35	2359.35	18874.80
	40mm	Nos.	20.00	3642.00	182.10	3824.10	76482.00
23	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete.	Joint					200000.00
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.88, item						
24	Repairing damage water connection to house hold including labour, materials etc. complete.	Nos.	50.00	406.00	20.30	426.30	21315.00
	(Work shall be measured and paid for, per number on actual quantity.) (RA)						
25	Repairing to the damaged drainage connection including labour, materials etc. complete. (RA)						400000.00

Bill of Quantities for Water Supply work for DMA 11 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	(Work shall be measured and paid for, per running meter basis on actual quantity.)						
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
	RA						
26	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows - (RA items)						
	1) Pressure loggers = 0.9M X 0.9M X 1.5M	Nos	4.00	40140.00	2007.00	42147.00	168588.00
	2) Pressure reducing valve (for 250 and less) - 1.2M X 1.2M X 1.5M	Nos	2.00	53618.00	2680.90	56298.90	112597.80
27	Providing and constructing B.B. masonry valve Chamber with 15 CM thick 1:3:6 proportion PCC bedding ,excluding excavation,B.B. masonry in CM 1:5 proportion precast R.C.C frame and cover etc completed as directed by Engineer-In-Charge	Nos	420.00	4149.00	207.45	4356.45	1829709.00
	Note: wall thickness:0.23 M for depth of 1.2 M and 0.35 m for balance depth exceeding 1.2 M.						
	As above 60 x 45 cm internal size and depth upto 0.90 m with precast RCC slab cover.						
	MJP schedule, MJP 18-19,Page No.385, item no. 1						
						Sub Total Labour	7653238.23
						Sub total (Material + Labour)	14426955.54

Bill of Quantities for Water Supply work for DMA 11 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Reinstatement of Road works							
	Bituminous Road						
i)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 PWD SSR 2017-18 item 2.25)	Cum	535.27	112.00	5.60	117.60	62948.13
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	133.82	419.00	20.95	439.95	58873.36
ii)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	339.14	1606.00	80.30	1686.30	571886.51
iii)	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver. (RA based on-PWD SSR 2017-18 item 3.23)	Cum	565.23	1862.00	93.10	1955.10	1105077.51

Bill of Quantities for Water Supply work for DMA 11 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iv)	DENSE BITUMINOUS MACADAM --Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder, @ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-40 grade with stone dust(RA based on-PWD SSR 2017-18 item 3.45)	Cum	135.65	5558.00	277.90	5835.90	791667.56
v)	BITUMINOUS CONCRETE --Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler(RA based on-PWD SSR 2017-18 item 3.51)	Cum	90.44	6917.00	345.85	7262.85	656826.73
vi)	Prime Coat						
	Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	2260.91	17	0.85	17.85	40357.29
	Sr no 145 PWD SSR Item no 3.29						

Bill of Quantities for Water Supply work for DMA 11 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
vii)	Tack Coat						
	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg/sqm on the prepared bituminous/granular surface cleaned with mechanical broom. etc. complete.(Spec. No. MORTH-503)	Sqm	2260.91	8	0.40	8.40	18991.67
	Sr no 146 PWD SSR Item no 3.30						
	Concrete Road						
viii)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 PWD SSR 2017-18 item 2.25)	Cum	229.40	112.00	5.60	117.60	26977.77
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	57.35	419.00	20.95	439.95	25231.44
ix)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	145.34	1862.00	93.10	1955.10	284162.79

Bill of Quantities for Water Supply work for DMA 11 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
x)	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete. (RA based on-PWD SSR 2017-18 item 5.13)	Cum	96.90	2784.00	139.20	2923.20	283247.12
xi)	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver,compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any (RA based on-MoRTH)	Cum	271.31	5735.00	286.75	6021.75	1633757.98
xii)	Providing road lane marking Sr no 222 PWD SSR 2017-18 item 6.23)	Sqm	904.37	123.00	6.15	129.15	116798.74
Total cost of Road Reinstatement							5676804.59

Bill of Quantities for Water Supply work for DMA 12 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Material Section							
1	Providing and supplying at site of work DI Pipes (push on joints pressure pipes of DI of following class and Dia meters confirming to the indian Standard specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality)excluding GST levied by GOI and GOM in all respect including Thid party inspection charges of TPI Agency approved by the MJP including transit insurance,Railway frieght,unloading from railway wagon,loading in to the truck transportation to departmental store, unloading,stacking etc. completed as directed by engineer-in-charge(IS:1536:2001 for pipes and IS:158:1969 and 15:12820:1989 or latest edition/revision with amendments for rubber gaskets).(IS:8329:2000 latest version).						
	MJP 18-19,Page No.86, item no. 3						
	D.I. K-9						
i)	Dia.100 mm	Rmt	2,724	793.00			2159814.80
ii)	Dia.150 mm	Rmt	748	1151.00			860832.90
2	Providing and supplying at site of work double flange sluice valve confirming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.						
	MJP 18-19,Page No.234, item no. (2a)						
	Sluice Valves PN - 1 (Without bypass arrangement)						
i)	100mm	No.	20.00	5807.00			116140.00
iii)	150mm	No.	5.00	8709.00			43545.00
iii)	200mm	No.	5.00	15786.00			78930.00
iv)	250mm	No.	3.00	24407.00			73221.00

Bill of Quantities for Water Supply work for DMA 12 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
v)	350mm	No.	2.00	45583.00			91166.00
	For flow meter & PRV						
i)	150mm	No.	1.00	8709.00			8709.00
ii)	600mm	No.	1.00	137770.00			137770.00
	Pressure Loggers						
3	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender. (Vendor supply item)	No.	8.00	55000.00			440000
	Residual chlorine analyser						
4	Design, installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement. Overall Range : 0 8mg/l (ppm) Accuracy : 2% of full scale Supply voltage : 230 V ac Outout : 4 20 mA Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance. IP 65 Nema 4 housing protection class required.	No.	3.00	191451.00			574353
	MJP ELEC/MECH,Page No.104, item no. 5.5						

Bill of Quantities for Water Supply work for DMA 12 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
5	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and transportation to store/site, loading, unloading and stacking, all taxes , etc complete.						
	a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269	No.					906194.31
	b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	Kg					
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg					
6	Pressure Reducing Valve						
	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						
	MJP ELEC/MECH,Page No.106, item no. SA8						
	400 mm dia	No.	1	536270			536270
	450 mm dia	No.	1	573668			573668
	Mechanical Type Meters.						
7	A) Domestic Meters						
b)	Multijet meters						
	Providing, installing and giving satisfactory field testing of						
	Domestic water meter, horizontal inferential multijet type						
	with magnetic drive and dry dial suitable for ambient 50° C						
	Temperature duly sealed against tampering complete with						
	couplings at both ends and conforming to class B as per						
	ISO 4064 along with manufacturer's test certificate and						
	guarantee certificate, including cost of all materials and						
	labour etc with OIML , MID certification for Abroad and						
	FCRI for India including 36 months guarantee etc complete						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 1 b, Page no. 74)						

Bill of Quantities for Water Supply work for DMA 12 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	15mm	No.	342	1755			600210
	20mm	No.	7	2137			14959
	25mm	No.	1	3619			3619
	40mm	No.	10	6741			67410
8	Ultrasonic Water Meter						
A)	AMR Domestic Meters						
	Providing, installing and giving satisfactory field testing of domestic battery operated AMR water meters with no measurement of air along with manufacturing test certificate and guarantee certificate with battery life of minimum 10 years with GSM / RF technology for communication to server with PC software including 36 months guarantee, etc. complete.						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 2m A, Page no. 77 and 78)						
	15mm	No.	342	7984			2730528
	20mm	No.	7	8708			60956
	25mm	No.	1	10154			10154
	40mm	No.	10	14493			144930
Total for material section							10233380.01
LABOUR SECTION							
9	Excavation for Water supply work						
	D.I.Pipes -K9						
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling , etc. complete. Lift 0 to 1.50 m	Cum	933.71	145.00	7.25	152.25	142156.70
	MJP 18-19,Page No.47, item no. 1						

Bill of Quantities for Water Supply work for DMA 12 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	311.24	165.00	8.25	173.25	53921.51
	MJP 18-19,Page No.47, item no. 2						
iii	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	933.71	185.00	9.25	194.25	181372.34
	MJP 18-19,Page No.47, item no. 3						
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 m to 1.5m	Cum	2358.22	454.00	22.70	476.70	1124163.71
	MJP 18-19,Page No.47, item no. 5						
v	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. Lift 0 to 1.50 m	Cum	311.24	770.00	38.50	808.50	251633.70
	MJP 18-19,Page No.48, item no. 7						

Bill of Quantities for Water Supply work for DMA 12 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
10	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)						151032.39
	MJP 18-19,Page No.73, item no. 10						
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.73, item no. 10						
i)	Dia.100	Nos.					
ii)	Dia.150	Nos.					
iii)	Dia.200	Nos.					
iv)	Dia.250	Nos.					
v)	Dia.300	Nos.					
vi)	Dia.400	Nos.					
vii)	Dia.500	Nos.					
11	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr	618.00	64.00	3.20	67.20	41529.60
	MJP 18-19,Page No.50, item no. 14						

Bill of Quantities for Water Supply work for DMA 12 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
12	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	240.20	66.00	3.30	69.30	16645.86
	MJP 18-19,Page No.50, item no. 15						
13	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	370.12	66.00	3.30	69.30	25649.09
	MJP 18-19,Page No.51, item no. 16						
14	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	a) In PCC M-100	Cum	15.00	3751.00	187.55	3938.55	59078.25
	MJP 18-19,Page No.59, item no. 1						
15	Carriage of surplus excavated material over distance exceeding 50m includig loading , unloading, spreading etc as directed.	Cum					1283060.95
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						

Bill of Quantities for Water Supply work for DMA 12 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
16	Providing and casting in situ cement concrete of trap granite/quartzite/gneiss metal of approved quality for RCC work as per the detail drawings and designs or as directed by Engineer in charge including normal dewatering,centering,formwork,compaction,finishing the form surface with CM 1:3 of sufficient minimum thickness if special finish to be provided and curing etc., complete (by weigh batching or mix design for M-250 and M-300 only.Use of L&T,ACC,Ambuja,Birala Gold,Manikgad,Rajashree etc. cement is permitted.(excluding M.S. or Tor Steel)						
	MJP 18-19,Page No.59, item no. 2						
	For foundation						
	In RCC M-250	Cum	150.00	5183.00	259.15	5442.15	816322.50
17	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire	MT	16.50	48500.00	2425.00	50925.00	840262.50
	MJP 18-19,Page No.62, item no. 8						
18	Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.						

Bill of Quantities for Water Supply work for DMA 12 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP 18-19,Page No.84, item no. 2						
	D.I. K-9						
i)	Dia.100 mm	Rmt	2,723.60	58.00	2.90	60.90	165,867.24
ii)	Dia.150 mm	Rmt	747.90	79.00	3.95	82.95	62,038.31
19	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting,placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments,labour,operation charges,etc.required for testing.the rate under this item shall also include cost of retesting,if necessary and reinstatement to original position using water supplied by the contractor						
	MJP 18-19,Page No.93, item no. 12						
	D.I.-K-9						
i)	Dia.100 mm	Km	2.72	6,546.00	327.30	6,873.30	18,720.12
ii)	Dia.150 mm	Km	0.75	8,763.00	438.15	9,201.15	6,881.54
20	Lowering, laying and jointly in position following CID/F Reflex valves, Butterfly valves and Sluice valves including cost of all labour jointly material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)						
	MJP 18-19,Page No.240, item no. 4						
i)	150mm	No.	6.00	2950.00	147.50	3097.50	18585.00
21	Providing and fixing CI road box including loading, unloading and carting to site of work including all necessary excavation in all types of starta and fixing in murum packing etc. complete.						

Bill of Quantities for Water Supply work for DMA 12 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP 18-19,Page No.388, item no. 5						
	a) 100mm x 225mm (20kg) for 100mm, 150mm, 200mm, 250mm	No.	33.00	1327.00	66.35	1393.35	45980.55
	Pressure Loggers						
22	Erection, installation, callibration, commissioning of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	8.00	13197.00	659.85	13856.85	110854.80
	(Vendor supply item)						

Bill of Quantities for Water Supply work for DMA 12 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
23	Residual chlorine analyser						
	Erection ,installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	3.00	13197.00	659.85	13856.85	41570.55
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
24	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and ratchet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						
	(RA)						
	15mm	Nos.	684.00	2022.00	101.10	2123.10	1452200.40
	20mm	Nos.	14.00	2247.00	112.35	2359.35	33030.90

Bill of Quantities for Water Supply work for DMA 12 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	25mm	Nos.	2.00	2327.00	116.35	2443.35	4886.70
	40mm	Nos.	20.00	2527.00	126.35	2653.35	53067.00
25	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete.	Joint					200000.00
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.88, item no. 4						
26	Repairing damage water connection to house hold including labour, materials etc. complete.	Nos.	50.00	406.00	20.30	426.30	21315.00
	(Work shall be measured and paid for, per number on actual quantity.) (RA)						
27	Repairing to the damaged drainage connection including labour, materials etc. complete. (RA)						400000.00
	(Work shall be measured and paid for, per running meter basis on actual quantity.)						
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
	RA						
28	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows - (RA items)						
	1) Sluice valve						
	350mm (1.2M X 1.3M X 1.8M)	Nos	2.00	62315.00	3115.75	65430.75	130861.50
	2) Pressure loggers = 0.9M X 0.9M X 1.5M	Nos	8.00	40140.00	2007.00	42147.00	337176.00
	3) Residual quality analyser - 0.9M X 0.9M X 1.5M	Nos	3.00	40140.00	2007.00	42147.00	126441.00

Bill of Quantities for Water Supply work for DMA 12 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	400mm (1.2M X 1.3M X 1.8M)	Nos	1.00	62315.00	3115.75	65430.75	65430.75
	450mm (1.3M X 2M X 2.2M)	Nos	1.00	94039.00	4701.95	98740.95	98740.95
29	Providing and constructing B.B. masonry valve Chamber with 15 CM thick 1:3:6 proportion PCC bedding ,excluding excavation,B.B. masonry in CM 1:5 proportion precast R.C.C frame and cover etc completed as directed by Engineer-In-Charge	Nos	720.00	4149.00	207.45	4356.45	3136644.00
	Note: wall thickness:0.23 M for depth of 1.2 M and 0.35 m for balance depth exceeding 1.2 M.						
	As above 60 x 45 cm internal size and depth upto 0.90 m with precast RCC slab cover.						
	MJP schedule, MJP 18-19,Page No.385, item no. 1						
Sub Total Labour							11517121.40
Sub total (Material + Labour)							21750501.41

Bill of Quantities for Water Supply work for DMA 12 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Reinstatement of Road works							
	Bituminous Road						
i)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 PWD SSR 2017-18 item 2.25)	Cum	690.88	112.00	5.60	117.60	81248.03
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	172.72	419.00	20.95	439.95	75988.67
ii)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	455.63	1606.00	80.30	1686.30	768336.25
iii)	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver. (RA based on-PWD SSR 2017-18 item 3.23)	Cum	759.39	1862.00	93.10	1955.10	1484684.61

Bill of Quantities for Water Supply work for DMA 12 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iv)	DENSE BITUMINOUS MACADAM --Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder, @ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-40 grade with stone dust (RA based on-PWD SSR 2017-18 item 3.45)	Cum	182.25	5558.00	277.90	5835.90	1063614.66
v)	BITUMINOUS CONCRETE --Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler (RA based on-PWD SSR 2017-18 item 3.51)	Cum	121.50	6917.00	345.85	7262.85	882454.43
vi)	Prime Coat Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	3037.56	17	0.85	17.85	54220.49
vii)	Sr no 145 PWD SSR Item no 3.29 Tack Coat						

Bill of Quantities for Water Supply work for DMA 12 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg/sqm on the prepared bituminous/granular surface cleaned with mechanical broom. etc. complete.(Spec. No. MORTH-503)	Sqm	3037.56	8	0.40	8.40	25515.53
	Sr no 146 PWD SSR Item no 3.30						
	Concrete Road						
viii)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 PWD SSR 2017-18 item 2.25)	Cum	296.09	112.00	5.60	117.60	34820.58
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	74.02	419.00	20.95	439.95	32566.57
ix)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	195.27	1606.00	80.30	1686.30	329286.96

Bill of Quantities for Water Supply work for DMA 12 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
x)	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete.(RA based on-PWD SSR 2017-18 item 5.13)	Cum	130.18	2784.00	139.20	2923.20	380545.83
xi)	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver,compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any(RA based on-MoRTH)	Cum	364.51	5735.00	286.75	6021.75	2194973.04
xii)	Providing road lane marking Sr no 222 PWD SSR 2017-18 item 6.23)	Sqm	953.26	123.00	6.15	129.15	123113.53
Total cost of Road Reinstatement							7531369.18

Bill of Quantities for Water Supply work for DMA 13A in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply item.	Rate	Amount
Material Section							
1	<p>Providing and supplying at site of work DI Pipes (push on joints pressure pipes of DI of following class and Dia meters confirming to the indian Standard specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality)excluding GST levied by GOI and GOM in all respect including Thid party inspection charges of TPI Agency approved by the MJP including transit insurance,Railway frieght,unloading from railway wagon,loading in to the truck transportation to departmental store, unloading,stacking etc. completed as directed by engineer-in-charge(IS:1536:2001 for pipes and IS:158:1969 and 15:12820:1989 or latest edition/revision with amendments for rubber gaskets).(IS:8329:2000 latest version).</p> <p>MJP 18-19,Page No.86, item no. 3</p> <p>D.I. K-9</p>						
	i) Dia.100 mm	Rmt	2,197	793.00			1742538.20
	ii) Dia.150 mm	Rmt	93	1151.00			106812.80
	iii) Dia. 200 mm	Rmt	81	1565.00			127391.00
	iv) Dia. 250 mm	Rmt	572	2081.00			1190332.00
	v) Dia.300 mm	Rmt	76	2576.00			195003.20
2	<p>Providing and supplying at site of work double flange sluice valve confirming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.</p> <p>MJP 18-19,Page No.234, item no. (2a)</p> <p>Sluice Valves PN - 1 (Without bypass arrangement)</p>						
	i) 100mm	No.	30.00	5807.00			174210.00

Bill of Quantities for Water Supply work for DMA 13A in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply item.	Rate	Amount
iii)	150mm	No.	5.00	8709.00			43545.00
iii)	250mm	No.	7.00	24407.00			170849.00
iv)	300mm	No.	9.00	30986.00			278874.00
v)	350mm	No.	3.00	45583.00			136749.00
	For flow meter and PRV						
i)	100mm	No.	2.00	5807.00			11614.00
ii)	500mm	No.	3.00	92991.00			278973.00
	Pressure Loggers						
3	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	6.00	55000.00			330000
	(Vendor supply item)						
	Residual chlorine analyser						
4	Design, installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at our water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	5.00	191451.00			957255
	Overall Range : 0 - 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Output : 4 - 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (Ag/AgCl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						

Bill of Quantities for Water Supply work for DMA 13A in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply item.	Rate	Amount
	MJP ELEC/MECH,Page No.104, item no. 5.5						
5	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and transportation to store/site, loading, unloading and stacking, all taxes , etc complete.						
	a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269	No.					1008623.16
	b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	Kg					
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg					
	Battery Operated electromagnetic flow meter						
6	Providing, erecting, testing and commissioning of battery operated electromagnetic flow meter built in GSM (with Simcard charges for 36 months validity) of various diameters as per the following specifications including 36 months guarantee etc complete.						
	MJP ELEC/MECH,Page No.93, item no. WM4						
i)	100 mm line size	No.	1	115122			115122
7	Pressure Reducing Valve						
	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						
	MJP ELEC/MECH,Page No.106, item no. SA8						
	400 mm dia	No.	1	525712			525712
	Mechanical Type Meters.						
8	A) Domestic Meters						

Bill of Quantities for Water Supply work for DMA 13A in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply item.	Rate	Amount
b)	Multijet meters						
	Providing, installing and giving satisfactory field testing of						
	Domestic water meter, horizontal inferential multijet type						
	with magnetic drive and dry dial suitable for ambient 50° C						
	Temperature duly sealed against tampering complete with						
	couplings at both ends and conforming to class B as per						
	ISO 4064 along with manufacturer's test certificate and						
	guarantee certificate, including cost of all materials and						
	labour etc with OIML , MID certification for Abroad and						
	FCRI for India including 36 months guarantee etc complete						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 1 b, Page no. 74)						
	15mm	No.	150	1755			263250
	20mm	No.	3	2137			6411
	25mm	No.	1	3619			3619
	40mm	No.	10	6741			67410
9	Ultrasonic Water Meter						
A)	AMR Domestic Meters						
	Providing, installing and giving satisfactory field testing of domestic battery operated AMR water meters with no measurement of air along with manufacturing test certificate and guarantee certificate with battery life of minimum 10 years with GSM / RF technology for communication to server with PC software including 36 months guarantee, etc. complete.						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 2m A, Page no. 77 and 78)						
	15mm	No.	150	7984			1197600
	20mm	No.	3	8708			26124
	25mm	No.	1	10154			10154
	40mm	No.	10	14493			144930
Total for material section							9113101.36

Bill of Quantities for Water Supply work for DMA 13A in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply item.	Rate	Amount
LABOUR SECTION							
10	Excavation for Water supply work						
	D.I.Pipes -K9						
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling , etc. complete. Lift 0 to 1.50 m	Cum	864.18	145.00	7.25	152.25	131570.74
	MJP 18-19,Page No.47, item no. 1						
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	288.06	165.00	8.25	173.25	49906.14
	MJP 18-19,Page No.47, item no. 2						
iii	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	864.18	185.00	9.25	194.25	167866.12
	MJP 18-19,Page No.47, item no. 3						

Bill of Quantities for Water Supply work for DMA 13A in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply item.	Rate	Amount
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 m to 1.5m	Cum	1255.46	454.00	22.70	476.70	598477.59
MJP 18-19,Page No.47, item no. 5							
v	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. Lift 0 to 1.50 m	Cum	288.06	770.00	38.50	808.50	232895.34
MJP 18-19,Page No.48, item no. 7							
11	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)						168103.86
MJP 18-19,Page No.73, item no. 10							
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.73, item no. 10						
i)	Dia.100	Nos.					
ii)	Dia.150	Nos.					
iii)	Dia.200	Nos.					

Bill of Quantities for Water Supply work for DMA 13A in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply item.	Rate	Amount
iv)	Dia.250	Nos.					
v)	Dia.300	Nos.					
vi)	Dia.400	Nos.					
vii)	Dia.500	Nos.					
12	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr	618.00	64.00	3.20	67.20	41529.60
	MJP 18-19,Page No.50, item no. 14						
13	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	264.41	66.00	3.30	69.30	18323.61
	MJP 18-19,Page No.50, item no. 15						
14	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	334.08	66.00	3.30	69.30	23152.06
	MJP 18-19,Page No.51, item no. 16						
15	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	a) In PCC M-100	Cum	15.00	3751.00	187.55	3938.55	59078.25
	MJP 18-19,Page No.59, item no. 1						

Bill of Quantities for Water Supply work for DMA 13A in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply item.	Rate	Amount
16	Carriage of surplus excavated material over distance exceeding 50m including loading , unloading, spreading etc as directed.	Cum					499066.03
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						
17	Providing and casting in situ cement concrete of trap granite/quartzite/gneiss metal of approved quality for RCC work as per the detail drawings and designs or as directed by Engineer in charge including normal dewatering,centering,formwork,compaction,finishing the form surface with CM 1:3 of sufficient minimum thickness if special finish to be provided and curing etc., complete (by weigh batching or mix design for M-250 and M-300 only.Use of L&T,ACC,Ambuja,Birala Gold,Manikgad,Rajashree etc. cement is permitted.(excluding M.S. or Tor Steel)						
	MJP 18-19,Page No.59, item no. 2						
	For foundation						
	In RCC M-250	Cum	150.00	5183.00	259.15	5442.15	816322.50
18	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire	MT	16.50	48500.00	2425.00	50925.00	840262.50
	MJP 18-19,Page No.62, item no. 8						

Bill of Quantities for Water Supply work for DMA 13A in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply item.	Rate	Amount
19	Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.						
	MJP 18-19,Page No.84, item no. 2						
	D.I. K-9						
i)	Dia.100 mm	Rmt	2,197.40	58.00	2.90	60.90	133,821.66
ii)	Dia.150 mm	Rmt	92.80	79.00	3.95	82.95	7,697.76
iii)	Dia. 200 mm	Rmt	81.40	104.00	5.20	109.20	8,888.88
iv)	Dia. 250 mm	Rmt	572.00	135.00	6.75	141.75	81,081.00
v)	Dia.300 mm	Rmt	75.70	152.00	7.60	159.60	12,081.72
20	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting,placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments,labour,operation charges,etc.required for testing.the rate under this item shall also include cost of retesting,if necessary and reinstatement to original position using water supplied by the contractor						
	MJP 18-19,Page No.93, item no. 12						
	D.I.-K-9						
i)	Dia.100 mm	Km	2.20	6,546.00	327.30	6,873.30	15,103.39
ii)	Dia.150 mm	Km	0.09	8,763.00	438.15	9,201.15	853.87
iii)	Dia. 200 mm	Km	0.08	11,508.00	575.40	12,083.40	983.59
iv)	Dia. 250 mm	Km	0.57	14,992.00	749.60	15,741.60	9,004.20
v)	Dia.300 mm	Km	0.08	16,892.00	844.60	17,736.60	1,342.66

Bill of Quantities for Water Supply work for DMA 13A in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply item.	Rate	Amount
21	Lowering, laying and jointly in position following CID/F Reflex valves, Butterfly valves and Sluice valves including cost of all labour jointly material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)						
	MJP 18-19,Page No.240, item no. 4						
i)	100mm	No.	32.00	1877.00	93.85	1970.85	63067.20
ii)	150mm	No.	5.00	2950.00	147.50	3097.50	15487.50
iii)	250mm	No.	7.00	3999.00	199.95	4198.95	29392.65
iv)	300mm	No.	9.00	4148.00	207.40	4355.40	39198.60
v)	350mm	No.	3.00	5112.00	255.60	5367.60	16102.80
vi)	500mm	No.	3.00	7598.00	379.90	7977.90	23933.70
22	Providing and fixing CI road box including loading, unloading and carting to site of work including all necessary excavation in all types of starta and fixing in murum packing etc. complete.						
	MJP 18-19,Page No.388, item no. 5						
	a) 100mm x 225mm (20kg) for 100mm, 150mm, 200mm, 250mm	No.	42.00	1327.00	66.35	1393.35	58520.70
	Pressure Loggers						
23	Erection, installation, calliberation, commissioning of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	6.00	13197.00	659.85	13856.85	83141.10

Bill of Quantities for Water Supply work for DMA 13A in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply item.	Rate	Amount
	(Vendor supply item)						
24	Residual chlorine analyser						
	Erection ,installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	5.00	13197.00	659.85	13856.85	69284.25
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
25	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and ratchet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						
	(RA)						

Bill of Quantities for Water Supply work for DMA 13A in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply item.	Rate	Amount
	15mm	Nos.	300.00	2022.00	101.10	2123.10	636930.00
	20mm	Nos.	6.00	2247.00	112.35	2359.35	14156.10
	25mm	Nos.	2.00	2327.00	116.35	2443.35	4886.70
	40mm	Nos.	20.00	3642.00	182.10	3824.10	76482.00
26	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete.	Joint					200000.00
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.88, item no. 4						
27	Repairing damage water connection to house hold including labour, materials etc. complete.	Nos.	50.00	406.00	20.30	426.30	21315.00
	(Work shall be measured and paid for, per number on actual quantity.) (RA)						

Bill of Quantities for Water Supply work for DMA 13A in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply item.	Rate	Amount
28	Repairing to the damaged drainage connection including labour, materials etc. complete. (RA)						400000.00
	(Work shall be measured and paid for, per running meter basis on actual quantity.)						
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
	RA						
29	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows - (RA items)						
	1) Sluice valve (250mm and less)						
	350mm (1.2M X 1.3M X 1.8M)	Nos	3.00	62315.00	3115.75	65430.75	196292.25
	Bulk flow meter (100mm) - 3M X 3.5M X 2M	Nos	1.00	247336.00	12366.80	259702.80	259702.80
	2) Pressure loggers = 0.9M X 0.9M X 1.5M	Nos	6.00	40140.00	2007.00	42147.00	252882.00
	3) Residual quality analyser - 0.9M X 0.9M X 1.5M	Nos	5.00	40140.00	2007.00	42147.00	210735.00
	4) Pressure reducing valve						
	400mm (1.2M X 1.3M X 1.8M)	Nos	1.00	62315.00	3115.75	65430.75	65430.75
30	Providing and constructing B.B. masonry valve Chamber with 15 CM thick 1:3:6 proportion PCC bedding ,excluding excavation,B.B. masonry in CM 1:5 proportion precast R.C.C frame and cover etc completed as directed by Engineer-In-Charge	Nos	328.00	4149.00	207.45	4356.45	1428915.60
	Note: wall thickness:0.23 M for depth of 1.2 M and 0.35 m for balance depth exceeding 1.2 M.						
	As above 60 x 45 cm internal size and depth upto 0.90 m with precast RCC slab cover.						
	MJP schedule, MJP 18-19,Page No.385, item no. 1						
Sub Total Labour							8083269.77
Sub total (Material + Labour)							17196371.13

Bill of Quantities for Water Supply work for DMA 13A in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply item.	Rate	Amount
Reinstatement of Road works							
	Bituminous Road						
i)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2). Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 PWD SSR 2017-18 item 2.25)	Cum	623.62	112.00	5.60	117.60	73338.23
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	155.91	419.00	20.95	439.95	68590.89
ii)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	396.28	1606.00	80.30	1686.30	668252.23
iii)	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver. (RA based on-PWD SSR 2017-18 item 3.23)	Cum	660.47	1862.00	93.10	1955.10	1291288.56

Bill of Quantities for Water Supply work for DMA 13A in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply item.	Rate	Amount
iv)	DENSE BITUMINOUS MACADAM: --Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder, @ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-40 grade with stone dust(RA based on-PWD SSR 2017-18 item 3.45)	Cum	158.51	5558.00	277.90	5835.90	925067.48
v)	BITUMINOUS CONCRETE: --Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler(RA based on-PWD SSR 2017-18 item 3.51)	Cum	105.68	6917.00	345.85	7262.85	767505.31
vi)	Prime Coat						
	Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	2641.89	17	0.85	17.85	47157.69
	Sr no 145 PWD SSR Item no 3.29						

Bill of Quantities for Water Supply work for DMA 13A in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply item.	Rate	Amount
vii)	Tack Coat						
	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg/sqm on the prepared bituminous/granular surface cleaned with mechanical broom. etc. complete.(Spec. No. MORTH-503)	Sqm	2641.89	8	0.40	8.40	22191.86
	Sr no 146 PWD SSR Item no 3.30						
	Concrete Road						
viii)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 PWD SSR 2017-18 item 2.25)	Cum	267.27	112.00	5.60	117.60	31430.67
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	66.82	419.00	20.95	439.95	29396.10
ix)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	169.84	1606.00	80.30	1686.30	286393.81

Bill of Quantities for Water Supply work for DMA 13A in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply item.	Rate	Amount
x)	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete. (RA based on-PWD SSR 2017-18 item 5.13)	Cum	113.22	2784.00	139.20	2923.20	330975.67
xi)	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver,compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any (RA based on-MoRTH)	Cum	317.03	5735.00	286.75	6021.75	1909054.33
xii)	Providing road lane marking Sr no 222 PWD SSR 2017-18 item 6.23)	Sqm	1056.76	123.00	6.15	129.15	136479.91
Total cost of Road Reinstatement							6587122.72

Bill of Quantities for Water Supply work for DMA 13B in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Material Section							
1	Providing and supplying at site of work DI Pipes (push on joints pressure pipes of DI of following class and Dia meters confirming to the indian Standard specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality)excluding GST levied by GOI and GOM in all respect including Thid party inspection charges of TPI Agency approved by the MJP including transit insurance,Railway frieght,unloading from railway wagon,loading in to the truck transportation to departmental store, unloading,stacking etc. completed as directed by engineer-in-charge(IS:1536:2001 for pipes and IS:158:1969 and 15:12820:1989 or latest edition/revision with amendments for rubber gaskets).(IS:8329:2000 latest version).						
	MJP 18-19,Page No.86, item no. 3						
	D.I. K-9						
i)	Dia.100 mm	Rmt	1,742	793.00			1381009.50
ii)	Dia.150 mm	Rmt	80	1151.00			92425.30
iii)	Dia. 200 mm	Rmt	188	1565.00			294376.50
iv)	Dia. 250 mm	Rmt	140	2081.00			290715.70
v)	Dia.300 mm	Rmt	163	2576.00			419115.20
2	Providing and supplying at site of work double flange sluice valve confirming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.						
	MJP 18-19,Page No.234, item no. (2a)						
	Sluice Valves PN - 1 (Without bypass arrangement)						
i)	100mm	No.	28.00	5807.00			162596.00
iii)	150mm	No.	3.00	8709.00			26127.00

Bill of Quantities for Water Supply work for DMA 13B in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iii)	200mm	No.	5.00	15786.00			78930.00
iv)	250mm	No.	3.00	24407.00			73221.00
v)	300mm	No.	1.00	30986.00			30986.00
	For flow meter and PRV						
i)	100mm	No.	2.00	5807.00			11614.00
ii)	300mm	No.	4.00	30986.00			123944.00
	Pressure Loggers						
3	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	1.00	55000.00			55000
	(Vendor supply item)						
	Residual chlorine analyser						
4	Design, installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	2.00	191451.00			382902
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						

Bill of Quantities for Water Supply work for DMA 13B in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
5	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and transportation to store/site, loading, unloading and stacking, all taxes , etc complete.						
	a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269	No.					743292.66
	b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	Kg					
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg					
6	Pressure Reducing Valve						
	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						
	MJP ELEC/MECH,Page No.106, item no. SA8						
	200 mm dia	No.	1	195494			195494
	Mechanical Type Meters.						
7	A) Domestic Meters						
	b) Multijet meters						
	Providing, installing and giving satisfactory field testing of Domestic water meter, horizontal inferential multijet type with magnetic drive and dry dial suitable for ambient 50° C Temperature duly sealed against tampering complete with couplings at both ends and conforming to class B as per ISO 4064 along with manufacturer's test certificate and guarantee certificate, including cost of all materials and labour etc with OIML , MID certification for Abroad and FCRI for India including 36 months guarantee etc complete						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 1 b, Page no. 74)						

Bill of Quantities for Water Supply work for DMA 13B in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	15mm	No.	299	1755			524745
	20mm	No.	6	2137			12822
	25mm	No.	1	3619			3619
	40mm	No.	10	6741			67410
8	Ultrasonic Water Meter						
A)	AMR Domestic Meters						
	Providing, installing and giving satisfactory field testing of domestic battery operated AMR water meters with no measurement of air along with manufacturing test certificate and guarantee certificate with battery life of minimum 10 years with GSM / RF technology for communication to server with PC software including 36 months guarantee, etc. complete.						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 2m A, Page no. 77 and 78)						
	15mm		299	7984			2387216
	20mm		6	8708			52248
	25mm		1	10154			10154
	40mm		10	14493			144930
Total for material section							7564892.86
LABOUR SECTION							
9	Excavation for Water supply work						
	D.I.Pipes -K9						
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling , etc. complete. Lift 0 to 1.50 m	Cum	655.15	145.00	7.25	152.25	99745.96
	MJP 18-19,Page No.47, item no. 1						

Bill of Quantities for Water Supply work for DMA 13B in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	218.38	165.00	8.25	173.25	37834.67
	MJP 18-19,Page No.47, item no. 2						
iii	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	655.15	185.00	9.25	194.25	127262.08
	MJP 18-19,Page No.47, item no. 3						
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	957.03	454.00	22.70	476.70	456216.87
	MJP 18-19,Page No.47, item no. 5						

Bill of Quantities for Water Supply work for DMA 13B in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
v	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. Lift 0 to 1.50 m	Cum	218.38	770.00	38.50	808.50	176561.81
MJP 18-19,Page No.48, item no. 7							
10	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)						123882.11
MJP 18-19,Page No.73, item no. 10							
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.73, item no. 10						
i)	Dia.100	Nos.					
ii)	Dia.150	Nos.					
iii)	Dia.200	Nos.					
iv)	Dia.250	Nos.					
v)	Dia.300	Nos.					
vi)	Dia.400	Nos.					
vii)	Dia.500	Nos.					

Bill of Quantities for Water Supply work for DMA 13B in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
11	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr	618.00	64.00	3.20	67.20	41529.60
	MJP 18-19,Page No.50, item no. 14						
12	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	195.31	66.00	3.30	69.30	13534.98
	MJP 18-19,Page No.50, item no. 15						
13	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	254.24	66.00	3.30	69.30	17618.80
	MJP 18-19,Page No.51, item no. 16						
14	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	a) In PCC M-100	Cum	15.00	3751.00	187.55	3938.55	59078.25
	MJP 18-19,Page No.59, item no. 1						
15	Carriage of surplus excavated material over distance exceeding 50m including loading , unloading, spreading etc as directed.	Cum					378761.95
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						

Bill of Quantities for Water Supply work for DMA 13B in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
16	Providing and casting in situ cement concrete of trap granite/quartzite/gneiss metal of approved quality for RCC work as per the detail drawings and designs or as directed by Engineer in charge including normal dewatering, centering, formwork, compaction, finishing the form surface with CM 1:3 of sufficient minimum thickness if special finish to be provided and curing etc., complete (by weigh batching or mix design for M-250 and M-300 only. Use of L&T, ACC, Ambuja, Biral Gold, Manikgad, Rajashree etc. cement is permitted. (excluding M.S. or Tor Steel)						
	MJP 18-19, Page No.59, item no. 2						
	For foundation						
	In RCC M-250	Cum	150.00	5183.00	259.15	5442.15	816322.50
17	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire	MT	16.50	48500.00	2425.00	50925.00	840262.50
	MJP 18-19, Page No.62, item no. 8						

Bill of Quantities for Water Supply work for DMA 13B in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
18	Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.						
	MJP 18-19,Page No.84, item no. 2						
	D.I. K-9						
i)	Dia.100 mm	Rmt	1,741.50	58.00	2.90	60.90	106,057.35
ii)	Dia.150 mm	Rmt	80.30	79.00	3.95	82.95	6,660.89
iii)	Dia. 200 mm	Rmt	188.10	104.00	5.20	109.20	20,540.52
iv)	Dia. 250 mm	Rmt	139.70	135.00	6.75	141.75	19,802.48
v)	Dia.300 mm	Rmt	162.70	152.00	7.60	159.60	25,966.92
19	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting,placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments,labour,operation charges,etc.required for testing.the rate under this item shall also include cost of retesting,if necessary and reinstatement to original position using water supplied by the contractor						
	MJP 18-19,Page No.93, item no. 12						
	D.I.-K-9						
i)	Dia.100 mm	Km	1.74	6,546.00	327.30	6,873.30	11,969.85
ii)	Dia.150 mm	Km	0.08	8,763.00	438.15	9,201.15	738.85
iii)	Dia. 200 mm	Km	0.19	11,508.00	575.40	12,083.40	2,272.89
iv)	Dia. 250 mm	Km	0.14	14,992.00	749.60	15,741.60	2,199.10
v)	Dia.300 mm	Km	0.16	16,892.00	844.60	17,736.60	2,885.74

Bill of Quantities for Water Supply work for DMA 13B in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
20	Lowering, laying and jointly in position following CID/F Reflex valves, Butterfly valves and Sluice valves including cost of all labour jointly material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)						
	MJP 18-19,Page No.240, item no. 4						
i)	100mm	No.	30.00	1877.00	93.85	1970.85	59125.50
ii)	150mm	No.	3.00	2950.00	147.50	3097.50	9292.50
iii)	200mm	No.	5.00	3069.00	153.45	3222.45	16112.25
iv)	250mm	No.	3.00	3999.00	199.95	4198.95	12596.85
v)	300mm	No.	5.00	4148.00	207.40	4355.40	21777.00
	Giving satisfactory hydraulic testing of following CID/F Reflex valves, Butterfly valves and Sluice valves.						
i)	100mm	No.	30.00	208.00	10.40	218.40	6552.00
ii)	150mm	No.	3.00	328.00	16.40	344.40	1033.20
iii)	200mm	No.	5.00	341.00	17.05	358.05	1790.25
iv)	250mm	No.	3.00	444.00	22.20	466.20	1398.60
v)	300mm	No.	5.00	461.00	23.05	484.05	2420.25
21	Providing and fixing CI road box including loading, unloading and carting to site of work including all necessary excavation in all types of starta and fixing in murum packing etc. complete.						
	MJP 18-19,Page No.388, item no. 5						
	a) 100mm x 225mm (20kg) for 100mm, 150mm, 200mm, 250mm	No.	39.00	1327.00	66.35	1393.35	54340.65
	Pressure Loggers						

Bill of Quantities for Water Supply work for DMA 13B in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
22	Erection, installation, callibration, commissioning of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	1.00	13197.00	659.85	13856.85	13856.85
	(Vendor supply item)						

Bill of Quantities for Water Supply work for DMA 13B in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
23	Residual chlorine analyser						
	Erection ,installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	2.00	13197.00	659.85	13856.85	27713.70
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
24	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and ratchet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						
	(RA)						
	15mm	Nos.	598.00	2022.00	101.10	2123.10	1269613.80
	20mm	Nos.	12.00	2247.00	112.35	2359.35	28312.20

Bill of Quantities for Water Supply work for DMA 13B in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	25mm	Nos.	2.00	2327.00	116.35	2443.35	4886.70
	40mm	Nos.	20.00	3642.00	182.10	3824.10	76482.00
25	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete.	Joint					200000.00
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.88, item						
26	Repairing damage water connection to house hold including labour, materials etc. complete.	Nos.	50.00	406.00	20.30	426.30	21315.00
	(Work shall be measured and paid for, per number on actual quantity.) (RA)						

Bill of Quantities for Water Supply work for DMA 13B in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
27	Repairing to the damaged drainage connection including labour, materials etc. complete. (RA)						400000.00
	(Work shall be measured and paid for, per running meter basis on actual quantity.)						
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
	RA						
28	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows - (RA items)						
	1) Sluice valve						
	300mm (1.2M X 1.3M X 1.8M)	Nos	1.00	62315.00	3115.75	65430.75	65430.75
	2) Pressure loggers = 0.9M X 0.9M X 1.5M	Nos	1.00	40140.00	2007.00	42147.00	42147.00
	3) Residual quality analyser - 0.9M X 0.9M X 1.5M	Nos	2.00	40140.00	2007.00	42147.00	84294.00
	4) Pressure reducing valve (for 250 and less) - 1.2M X 1.2M X 1.5M	Nos	1.00	53618.00	2680.90	56298.90	56298.90
29	Providing and constructing B.B. masonry valve Chamber with 15 CM thick 1:3:6 proportion PCC bedding ,excluding excavation,B.B. masonry in CM 1:5 proportion precast R.C.C frame and cover etc completed as directed by Engineer-In-Charge	Nos	632.00	4149.00	207.45	4356.45	2753276.40
	Note: wall thickness:0.23 M for depth of 1.2 M and 0.35 m for balance depth exceeding 1.2 M.						
	As above 60 x 45 cm internal size and depth upto 0.90 m with precast RCC slab cover.						
	MJP schedule, MJP 18-19,Page No.385, item no. 1						
						Sub Total Labour	8617773.02
						Sub total (Material + Labour)	16182665.88

Bill of Quantities for Water Supply work for DMA 13B in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Reinstatement of Road works							
	Bituminous Road						
i)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting (PWD SSR 2017-18 item 2.25)	Cum	474.58	112.00	5.60	117.60	55810.66
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	118.65	419.00	20.95	439.95	52197.91
ii)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	303.49	1606.00	80.30	1686.30	511774.13
iii)	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver.(RA based on-PWD SSR 2017-18 item 3.23)	Cum	505.82	1862.00	93.10	1955.10	988920.13

Bill of Quantities for Water Supply work for DMA 13B in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iv)	DENSE BITUMINOUS MACADAM --Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder, @ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-40 grade with stone dust(RA based on-PWD SSR 2017-18 item 3.45)	Cum	121.40	5558.00	277.90	5835.90	708453.46
v)	BITUMINOUS CONCRETE --Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler(RA based on-PWD SSR 2017-18 item 3.51)	Cum	80.93	6917.00	345.85	7262.85	587786.08
vi)	Prime Coat Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	2023.26	17	0.85	17.85	36115.24
vii)	Tack Coat						

Bill of Quantities for Water Supply work for DMA 13B in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg/sqm on the prepared bituminous/granular surface cleaned with mechanical broom. etc. complete.(Spec. No. MORTH-503)	Sqm	2023.26	8	0.40	8.40	16995.41
	Concrete Road						
viii)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting (PWD SSR 2017-18 item 2.25)	Cum	203.39	112.00	5.60	117.60	23918.85
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	50.85	419.00	20.95	439.95	22370.53
ix)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	130.07	1606.00	80.30	1686.30	219331.77

Bill of Quantities for Water Supply work for DMA 13B in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
x)	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete. (RA based on-PWD SSR 2017-18 item 5.13)	Cum	86.71	2784.00	139.20	2923.20	253474.33
xi)	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver,compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any (RA based on-MoRTH)	Cum	242.79	5735.00	286.75	6021.75	1462029.72
xii)	Providing road lane marking (PWD SSR 2017-18 item 6.23)	Sqm	809.31	123.00	6.15	129.15	104521.74
Total cost of Road Reinstatement							5043699.95

Bill of Quantities for Water Supply work for DMA 16 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
2	Providing and supplying at site of work double flange sluice valve conforming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.						
	MJP 18-19,Page No.234, item no. (2a)						
	Sluice Valves PN - 1 (Without bypass arrangement)						
i)	100mm	No.	40.00	5807.00			232280.00
ii)	150mm	No.	20.00	8709.00			174180.00
iii)	250mm	No.	5.00	24407.00			122035.00
iv)	300mm	No.	5.00	30986.00			154930.00
v)	350mm	No.	5.00	45583.00			227915.00
vi)	400mm	No.	2.00	60013.00			120026.00
vii)	500mm	No.	1.00	92991.00			92991.00
	For flow meter and PRV						
i)	100mm	No.	2.00	5807.00			11614.00
ii)	525mm	No.	3.00	92991.00			278973.00
	Pressure Loggers						
3	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	5.00	55000.00			275000
	(Vendor supply item)						
	Residual chlorine analyser						

Bill of Quantities for Water Supply work for DMA 16 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
4	Design, installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at our water sump and interfacing with PLC panel. Residual chlorine meter shall comprise of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	5.00	191451.00			957255
	Overall Range : 0 - 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Output : 4 - 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (Ag/AgCl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
5	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and transportation to store/site, loading, unloading and stacking, all taxes, etc complete. Work shall be measured and paid as per the units and rates as actual as follows:						
	a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269	No.					3051043.14
	b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	Kg					
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg					

Bill of Quantities for Water Supply work for DMA 16 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Battery Operated electromagnetic flow meter						
6	Providing, erecting, testing and commissioning of battery operated electromagnetic flow meter built in GSM (with Simcard charges for 36 months validity) of various diameters as per the following specifications including 36 months guarantee etc complete.						
	MJP ELEC/MECH,Page No.93, item no. WM4						
i)	250 mm line size	No.	1.00	162024	8101.20	170125.20	170125.20
7	Pressure Reducing Valve						
	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						
	MJP ELEC/MECH 18-19,Page No.106, item SA8						
	300 mm dia	No.	1.00	323633.00	16181.65	339814.65	339814.65
	400 mm dia	No.	1.00	536270.00	26813.50	563083.50	563083.50
	Mechanical Type Meters.						
8	A) Domestic Meters						
b)	Multijet meters						
	Providing, installing and giving satisfactory field testing of						
	Domestic water meter, horizontal inferential multijet type						
	with magnetic drive and dry dial suitable for ambient 50° C						

Bill of Quantities for Water Supply work for DMA 16 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
						Sub Total of Material	22912319.29
LABOUR SECTION							
10	Excavation for Water supply work						
	D.I.Pipes -K9						
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling , etc. complete. Lift 0 to 1.50 m	Cum	2451.01	145.00	7.25	152.25	373166.23
	MJP 18-19,Page No.47, item no. 1						
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	817.00	165.00	8.25	173.25	141545.81
	MJP 18-19,Page No.47, item no. 2						
iii	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	cum	559.18	185.00	9.25	194.25	108621.39
	MJP 18-19,Page No.47, item no. 3						

Bill of Quantities for Water Supply work for DMA 16 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 ro 1.50 m	Cum	3497.95	454.00	22.70	476.70	1667473.48
MJP 18-19,Page No.47, item no. 5							
v	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. Lift 0 to 1.50 m	Cum	817.00	770.00	38.50	808.50	660547.13
MJP 18-19,Page No.48, item no. 7							
11	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)						508507.19
MJP 18-19,Page No.73, item no. 10							
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.73, item no. 10						

Bill of Quantities for Water Supply work for DMA 16 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
i)	Dia.100	Nos.					
ii)	Dia.150	Nos.					
iii)	Dia.200	Nos.					
iv)	Dia.250	Nos.					
v)	Dia.300	Nos.					
vi)	Dia.400	Nos.					
vii)	Dia.500	Nos.					
12	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr	618.00	64.00	3.20	67.20	41529.60
	MJP 18-19,Page No.50, item no. 14						
13	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	811.97	66.00	3.30	69.30	56269.52
	MJP 18-19,Page No.50, item no. 15						
14	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	936.22	691.00	34.55	725.55	679272.61
	MJP 18-19,Page No.51, item no. 16						

Bill of Quantities for Water Supply work for DMA 16 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
18	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire	MT	16.50	48500.00	2425.00	50925.00	840262.50
	MJP 18-19,Page No.62, item no. 8						
19	Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.						
	MJP 18-19,Page No.84, item no. 2						
	D.I. K-9						
i)	Dia.100 mm	Rmt	3,431.30	58.00	2.90	60.90	208,966.17
ii)	Dia.150 mm	Rmt	2,911.80	79.00	3.95	82.95	241,533.81
iii)	Dia. 200 mm	Rmt	861.30	104.00	5.20	109.20	94,053.96
iv)	Dia. 250 mm	Rmt	261.80	135.00	6.75	141.75	37,110.15
v)	Dia.300 mm	Rmt	738.80	152.00	7.60	159.60	117,912.48
vi)	Dia.400 mm	Rmt	79.20	230.00	11.50	241.50	19,126.80

Bill of Quantities for Water Supply work for DMA 16 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
20	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting,placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments,labour,operation charges,etc.required for testing.the rate under this item shall also include cost of retesting,if necessary and reinstatement to original position using water supplied by the contractor						
	MJP 18-19,Page No.93, item no. 12						
	D.I.-K-9						
i)	Dia.100 mm	Km	3.43	6,546.00	327.30	6,873.30	23,584.35
ii)	Dia.150 mm	Km	2.91	8,763.00	438.15	9,201.15	26,791.91
iii)	Dia. 200 mm	Km	0.86	11,508.00	575.40	12,083.40	10,407.43
iv)	Dia. 250 mm	Km	0.26	14,992.00	749.60	15,741.60	4,121.15
v)	Dia.300 mm	Km	0.74	16,892.00	844.60	17,736.60	13,103.80
vi)	Dia.400 mm	Km	0.08	25,549.00	1,277.45	26,826.45	2,124.65
21	Lowering, laying and jointly in position following CID/F Reflex valves, Butterfly valves and Sluice valves including cost of all labour jointly material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)						
	MJP 18-19,Page No.240, item no. 4						
i)	100mm	No.	42.00	1877.00	93.85	1970.85	82775.70
ii)	150mm(with flow meter)	No.	20.00	2950.00	147.50	3097.50	61950.00
iii)	250mm	No.	5.00	3999.00	199.95	4198.95	20994.75

Bill of Quantities for Water Supply work for DMA 16 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
24	Residual chlorine analyser						
	Erection ,installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	5.00	13197.00	659.85	13856.85	69284.25
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						

Bill of Quantities for Water Supply work for DMA 16 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
25	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and ratchet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						
	(RA)						
	15mm	Nos.	1172.00	2022.00	101.10	2123.10	2488273.20
	20mm	Nos.	24.00	2247.00	112.35	2359.35	56624.40
	25mm	Nos.	4.00	2327.00	116.35	2443.35	9773.40
	40 mm	Nos.	10.00	2642.00	132.10	2774.10	27741.00
26	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete.	Joint					200000.00
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.88, item no. 4						
27	Repairing damage water connection to house hold including labour, materials etc. complete.	Nos.	50.00	406.00	20.30	426.30	21315.00
	(Work shall be measured and paid for, per number on actual quantity.) (RA)						

Bill of Quantities for Water Supply work for DMA 16 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
28	Repairing to the damaged drainage connection including labour, materials etc. complete. (RA)						400000.00
	(Work shall be measured and paid for, per running meter basis on actual quantity.)						
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
	RA						
29	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows - (RA items)						
	1) Sluice valve (250mm and less) - Road box	Nos					
	300mm (1.2M X 1.3M X 1.8M)	Nos	5.00	62315.00	3115.75	65430.75	327153.75
	350mm (1.2M X 1.3M X 1.8M)	Nos	5.00	62315.00	3115.75	65430.75	327153.75
	400mm (1.2M X 1.3M X 1.8M)	Nos	2.00	62315.00	3115.75	65430.75	130861.50
	500mm (1.3M X 2M X 2.2M)	Nos	1.00	94039.00	4701.95	98740.95	98740.95
	2) Bulk flow meter (150mm) - 3M X 3.5M X 2M	Nos	1.00	247336.00	12366.80	259702.80	259702.80
	3) Pressure loggers = 0.9M X 0.9M X 1.5M	Nos	5.00	40140.00	2007.00	42147.00	210735.00
	4) Residual quality analyser - 0.9M X 0.9M X 1.5M	Nos	5.00	40140.00	2007.00	42147.00	210735.00
	5) Pressure reducing valve						
	300mm (1.2M X 1.3M X 1.8M)	Nos	1.00	62315.00	3115.75	65430.75	65430.75
	400mm (1.2M X 1.3M X 1.8M)	Nos	1.00	62315.00	3115.75	65430.75	65430.75

Bill of Quantities for Water Supply work for DMA 16 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
30	Providing and constructing B.B. masonry valve Chamber with 15 CM thick 1:3:6 proportion PCC bedding ,excluding excavation,B.B. masonry in CM 1:5 proportion precast R.C.C frame and cover etc completed as directed by Engineer-In-Charge	Nos	1210.00	4149.00	207.45	4356.45	5271304.50
	Note: wall thickness:0.23 M for depth of 1.2 M and 0.35 m for balance depth exceeding 1.2 M.						
	As above 60 x 45 cm internal size and depth upto 0.90 m with precast RCC slab cover.						
	MJP schedule, MJP 18-19,Page No.385, item no. 1						
Sub Total of Labour							18791625.55
Total (Material +Labour)							41703944.84
Reinstatement of Road works							
Bituminous Road							
i)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2). Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 PWD SSR 2017-18 item 2.25)	Cum	1747.61	112.00	5.60	117.60	205518.47
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	436.90	419.00	20.95	439.95	192214.81

Bill of Quantities for Water Supply work for DMA 16 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
ii)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	1087.30	1606.00	80.30	1686.30	1833516.10
iii)	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver. (RA based on-PWD SSR 2017-18 item 3.23)	Cum	1812.17	1862.00	93.10	1955.10	3542971.12
iv)	DENSE BITUMINOUS MACADAM --Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder, @ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-40 grade with stone dust (RA based on-PWD SSR 2017-18 item 3.45)	Cum	434.92	5558.00	277.90	5835.90	2538152.55

Bill of Quantities for Water Supply work for DMA 16 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
v)	BITUMINOUS CONCRETE --Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler(RA based on-PWD SSR 2017-18 item 3.51)	Cum	289.95	6917.00	345.85	7262.85	2105841.57
vi)	Prime Coat						
	Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	7248.68	17	0.85	17.85	129388.85
vii)	Sr no 145 PWD SSR Item no 3.29 Tack Coat						

Bill of Quantities for Water Supply work for DMA 16 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg/sqm on the prepared bituminous/granular surface cleaned with mechanical broom. etc. complete.(Spec. No. MORTH-503)	Sqm	7248.68	8	0.40	8.40	60888.87
	Sr no 146 PWD SSR Item no 3.30						
	Concrete Road						
viii)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2). Spec. No. MORTH -305						
	From Material available from road way cutting (PWD SSR 2017-18 item 2.25)	Cum	748.97	112.00	5.60	117.60	88079.34
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	187.24	419.00	20.95	439.95	82377.78
ix)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	465.99	1606.00	80.30	1686.30	785792.61

Bill of Quantities for Water Supply work for DMA 16 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
x)	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete.(RA based on-PWD SSR 2017-18 item 5.13)	Cum	310.66	2784.00	139.20	2923.20	908114.00
xi)	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver,compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any(RA based on-MoRTH)	Cum	869.84	5735.00	286.75	6021.75	5237965.04
xii)	Providing road lane marking Sr no 222 PWD SSR 2017-18 item 6.23)	Sqm	2899.47	123.00	6.15	129.15	374466.55
Total of Road Reinstatement							18085287.67

Bill of Quantities for Water Supply work for DMA 17 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Material Section							
1	Providing and supplying at site of work DI Pipes (push on joints pressure pipes of DI of following class and Dia meters confirming to the indian Standard specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality)excluding GST levied by GOI and GOM in all respect including Thid party inspection charges of TPI Agency approved by the MJP including transit insurance,Railway frieght,unloading from railway wagon,loading in to the truck transportation to departmental store, unloading,stacking etc. completed as directed by engineer-in-charge(IS:1536:2001 for pipes and IS:158:1969 and 15:12820:1989 or latest edition/revision with amendments for rubber gaskets).(IS:8329:2000 latest version).						
	MJP 18-19,Page No.86, item no. 3						
	D.I. K-9						
i)	Dia.100 mm	Rmt	6,065	793.00			4809703.60
ii)	Dia.150 mm	Rmt	1,375	1151.00			1582625.00
iii)	Dia. 200 mm	Rmt	154	1565.00			241010.00
iv)	Dia. 250 mm	Rmt	46	2081.00			94893.60
v)	Dia.300 mm	Rmt	40	2576.00			103297.60
2	Providing and supplying at site of work double flange sluice valve confirming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.						
	MJP 18-19,Page No.234, item no. (2a)						
	Sluice Valves PN - 1 (Without bypass arrangement)						
i)	100mm	No.	55.00	5807.00			319385.00
ii)	150mm	No.	9.00	8709.00			78381.00

Bill of Quantities for Water Supply work for DMA 17 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iii)	200mm	No.	3.00	15786.00			47358.00
iv)	250mm	No.	5.00	24407.00			122035.00
v)	300mm	No.	3.00	30986.00			92958.00
vi)	350mm	No.	2.00	45583.00			91166.00
vii)	700mm	No.	1.00	256083.00			256083.00
	For flow meter						
i)	100mm	No.	2.00	5807.00			11614.00
ii)	700mm	No.	3.00	256083.00			768249.00
	Pressure Loggers						
3	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	4.00	55000.00			220000
	(Vendor supply item)						
	Residual chlorine analyser						
4	Design, installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	4.00	191451.00			765804
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						

Bill of Quantities for Water Supply work for DMA 17 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
5	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and transportation to store/site, loading, unloading and stacking, all taxes , etc complete.						
	a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269	No.					2049458.94
	b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	Kg					
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg					
	Battery Operated electromagnetic flow meter						
6	Providing, erecting, testing and commissioning of battery operated electromagnetic flow meter built in GSM (with Simcard charges for 36 months validity) of various diameters as per the following specifications including 36 months guarantee etc complete.						
	MJP ELEC/MECH,Page No.93, item no. WM4						
i)	100 mm line size	No.	1	115122			115122
7	Pressure Reducing Valve						
	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						

Bill of Quantities for Water Supply work for DMA 17 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP ELEC/MECH,Page No.106, item no. SA8						
	600 mm dia	No.	1	1073774			1073774
	Mechanical Type Meters.						
8	A) Domestic Meters						
	b) Multijet meters						
	Providing, installing and giving satisfactory field testing of						
	Domestic water meter, horizontal inferential multijet type						
	with magnetic drive and dry dial suitable for ambient 50° C						
	Temperature duly sealed against tampering complete with						
	couplings at both ends and conforming to class B as per						
	ISO 4064 along with manufacturer's test certificate and						
	guarantee certificate, including cost of all materials and						
	labour etc with OIML , MID certification for Abroad and						
	FCRI for India including 36 months guarantee etc complete						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 1 b, Page no. 74)						
	15mm	No.	644	1755			1130220
	20mm	No.	13	2137			27781
	25mm	No.	1	3619			3619
	40mm	No.	10	6741			67410
9	Ultrasonic Water Meter						
	A) AMR Domestic Meters						
	Providing, installing and giving satisfactory field testing of domestic battery operated AMR water meters with no measurement of air along with manufacturing test certificate and guarantee certificate with battery life of minimum 10 years with GSM / RF technology for communication to server with PC software including 36 months guarantee, etc. complete.						

Bill of Quantities for Water Supply work for DMA 17 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	(MJP Elec/Mech CSR 2018-19, section 19, WM 2m A, Page no. 77 and 78)						
	15mm	No.	644	7984			5141696
	20mm	No.	13	8708			113204
	25mm	No.	1	10154			10154
	40mm	No.	10	14493			144930
Total for material section							19481931.74
LABOUR SECTION							
10	Excavation for Water supply work						
	D.I.Pipes -K9						
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling , etc. complete. Lift 0 to 1.50 m	Cum	2076.18	145.00	7.25	152.25	316097.93
	MJP 18-19,Page No.47, item no. 1						
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	692.06	165.00	8.25	173.25	119899.21
	MJP 18-19,Page No.47, item no. 2						

Bill of Quantities for Water Supply work for DMA 17 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iii	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	2076.18	185.00	9.25	194.25	403297.35
	MJP 18-19,Page No.47, item no. 3						
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	2248.11	454.00	22.70	476.70	1071672.44
	MJP 18-19,Page No.47, item no. 5						
v	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. Lift 0 to 1.50 m	Cum	692.06	770.00	38.50	808.50	559529.66
	MJP 18-19,Page No.48, item no. 7						

Bill of Quantities for Water Supply work for DMA 17 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
11	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)						341576.49
	MJP 18-19,Page No.73, item no. 10						
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.73, item no. 10						
i)	Dia.100	Nos.					
ii)	Dia.150	Nos.					
iii)	Dia.200	Nos.					
iv)	Dia.250	Nos.					
v)	Dia.300	Nos.					
vi)	Dia.400	Nos.					
vii)	Dia.500	Nos.					
12	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr	618.00	64.00	3.20	67.20	41529.60
	MJP 18-19,Page No.50, item no. 14						

Bill of Quantities for Water Supply work for DMA 17 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
13	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	542.60	66.00	3.30	69.30	37602.18
	MJP 18-19,Page No.50, item no. 15						
14	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	821.24	66.00	3.30	69.30	56912.00
	MJP 18-19,Page No.51, item no. 16						
15	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	a) In PCC M-100	Cum	15.00	3751.00	187.55	3938.55	59078.25
	MJP 18-19,Page No.59, item no. 1						
16	Carriage of surplus excavated material over distance exceeding 50m includig loading , unloading, spreading etc as directed.	Cum					1204137.81
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						

Bill of Quantities for Water Supply work for DMA 17 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
17	Providing and casting in situ cement concrete of trap granite/quartzite/gneiss metal of approved quality for RCC work as per the detail drawings and designs or as directed by Engineer in charge including normal dewatering, centering, formwork, compaction, finishing the form surface with CM 1:3 of sufficient minimum thickness if special finish to be provided and curing etc., complete (by weigh batching or mix design for M-250 and M-300 only. Use of L&T, ACC, Ambuja, Biral Gold, Manikgad, Rajashree etc. cement is permitted. (excluding M.S. or Tor Steel)						
	MJP 18-19, Page No.59, item no. 2						
	For foundation						
	In RCC M-250	Cum	150.00	5183.00	259.15	5442.15	816322.50
18	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire	MT	16.50	48500.00	2425.00	50925.00	840262.50
	MJP 18-19, Page No.62, item no. 8						
19	Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.						

Bill of Quantities for Water Supply work for DMA 17 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP 18-19,Page No.84, item no. 2						
	D.I. K-9						
i)	Dia.100 mm	Rmt	6,065.20	58.00	2.90	60.90	369,370.68
ii)	Dia.150 mm	Rmt	1,375.00	79.00	3.95	82.95	114,056.25
iii)	Dia. 200 mm	Rmt	154.00	104.00	5.20	109.20	16,816.80
iv)	Dia. 250 mm	Rmt	45.60	135.00	6.75	141.75	6,463.80
v)	Dia.300 mm	Rmt	40.10	152.00	7.60	159.60	6,399.96
20	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting,placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments,labour,operation charges,etc.required for testing.the rate under this item shall also include cost of retesting,if necessary and reinstatement to original position using water supplied by the contractor						
	MJP 18-19,Page No.93, item no. 12						
	D.I.-K-9						
i)	Dia.100 mm	Km	6.07	6,546.00	327.30	6,873.30	41,687.94
ii)	Dia.150 mm	Km	1.38	8,763.00	438.15	9,201.15	12,651.58
iii)	Dia. 200 mm	Km	0.15	11,508.00	575.40	12,083.40	1,860.84
iv)	Dia. 250 mm	Km	0.05	14,992.00	749.60	15,741.60	717.82
v)	Dia.300 mm	Km	0.04	16,892.00	844.60	17,736.60	711.24
21	Lowering, laying and jointly in position following CID/F Reflex valves, Butterfly valves and Sluice valves including cost of all labour jointly material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)						
	MJP 18-19,Page No.240, item no. 4						

Bill of Quantities for Water Supply work for DMA 17 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
i)	100mm	No.	57.00	1877.00	93.85	1970.85	112338.45
ii)	150mm	No.	9.00	2950.00	147.50	3097.50	27877.50
iii)	200mm	No.	3.00	3069.00	153.45	3222.45	9667.35
iv)	250mm	No.	5.00	3999.00	199.95	4198.95	20994.75
v)	300mm	No.	3.00	4148.00	207.40	4355.40	13066.20
vi)	350mm	No.	2.00	5112.00	255.60	5367.60	10735.20
vii)	700mm	No.	4.00	8695.00	434.75	9129.75	36519.00
22	Providing and fixing CI road box including loading, unloading and carting to site of work including all necessary excavation in all types of starta and fixing in murum packing etc. complete.						
	MJP 18-19,Page No.388, item no. 5						
	a) 100mm x 225mm (20kg) for 100mm, 150mm, 200mm, 250mm	No.	72.00	1327.00	66.35	1393.35	100321.20

Bill of Quantities for Water Supply work for DMA 17 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Pressure Loggers						
23	Erection, installation, callibration, commissioning of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	4.00	13197.00	659.85	13856.85	55427.40
	(Vendor supply item)						
24	Residual chlorine analyser						
	Erection ,installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	4.00	13197.00	659.85	13856.85	55427.40
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						

Bill of Quantities for Water Supply work for DMA 17 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
25	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and ratchet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						
	(RA)						
	15mm	Nos.	1288.00	2022.00	101.10	2123.10	2734552.80
	20mm	Nos.	26.00	2247.00	112.35	2359.35	61343.10
	25mm	Nos.	2.00	2327.00	116.35	2443.35	4886.70
	32mm	Nos.	20.00	3642.00	182.10	3824.10	76482.00
26	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete. work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.88, item no. 4	Joint					200000.00
27	Repairing damage water connection to house hold including labour, materials etc. complete. (Work shall be measured and paid for, per number on actual quantity.) (RA)	Nos.	50.00	406.00	20.30	426.30	21315.00
28	Repairing to the damaged drainage connection including labour, materials etc. complete. (RA)						400000.00

Bill of Quantities for Water Supply work for DMA 17 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	(Work shall be measured and paid for, per running meter basis on actual quantity.)						
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
	RA						
29	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows - (RA items)						
	1) Sluice valve						
	300mm (1.2M X 1.3M X 1.8M)	Nos	3.00	62315.00	3115.75	65430.75	196292.25
	350mm (1.2M X 1.3M X 1.8M)	Nos	2.00	62315.00	3115.75	65430.75	130861.50
	700mm (1.3M X 2M X 2.2M)	Nos	1.00	94039.00	4701.95	98740.95	98740.95
	2) Bulk flow meter (100mm) - 3M X 3.5M X 2M	Nos	1.00	247336.00	12366.80	259702.80	259702.80
	3) Pressure loggers = 0.9M X 0.9M X 1.5M	Nos	4.00	40140.00	2007.00	42147.00	168588.00
	4) Residual quality analyser - 0.9M X 0.9M X 1.5M	Nos	4.00	40140.00	2007.00	42147.00	168588.00
	5) Pressure reducing valve						
	600mm (1.3M X 2M X 2.2M)	Nos	1.00	94039.00	4701.95	98740.95	98740.95
30	Providing and constructing B.B. masonry valve Chamber with 15 CM thick 1:3:6 proportion PCC bedding ,excluding excavation,B.B. masonry in CM 1:5 proportion precast R.C.C frame and cover etc completed as directed by Engineer-In-Charge	nos	1336.00	4149.00	207.45	4356.45	5820217.20

Bill of Quantities for Water Supply work for DMA 17 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Note: wall thickness:0.23 M for depth of 1.2 M and 0.35 m for balance depth exceeding 1.2 M.						
	As above 60 x 45 cm internal size and depth upto 0.90 m with precast RCC slab cover.						
	MJP schedule, MJP 18-19,Page No.385, item no. 1						
						Sub Total Labour	17321340.53
						Sub total (Material + Labour)	36803272.27
Reinstatement of Road works							
	Bituminous Road						
i)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2). Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 PWD SSR 2017-18 item 2.25)	Cum	1532.98	112.00	5.60	117.60	180278.82
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	383.25	419.00	20.95	439.95	168608.99
ii)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	1007.99	1606.00	80.30	1686.30	1699768.27

Bill of Quantities for Water Supply work for DMA 17 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iii)	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver.(RA based on-PWD SSR 2017-18 item 3.23)	Cum	1679.98	1862.00	93.10	1955.10	3284525.23
iv)	DENSE BITUMINOUS MACADAM :--Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder, @ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-40 grade with stone dust(RA based on-PWD SSR 2017-18 item 3.45)	Cum	403.19	5558.00	277.90	5835.90	2353004.24
v)	BITUMINOUS CONCRETE :--Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler(RA based on-PWD SSR 2017-18 item 3.51)	Cum	268.80	6917.00	345.85	7262.85	1952228.66

Bill of Quantities for Water Supply work for DMA 17 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
vi)	Prime Coat						
	Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	6719.91	17	0.85	17.85	119950.44
	Sr no 145 PWD SSR Item no 3.29						
vii)	Tack Coat						
	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg/sqm on the prepared bituminous/granular surface cleaned with mechanical broom. etc. complete.(Spec. No. MORTH-503)	Sqm	6719.91	8	0.40	8.40	56447.27
	Sr no 146 PWD SSR Item no 3.30						
	Concrete Road						
viii)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 (PWD SSR 2017-18 item 2.25)	Cum	656.99	112.00	5.60	117.60	77262.35
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	164.25	419.00	20.95	439.95	72261.00

Bill of Quantities for Water Supply work for DMA 17 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
ix)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	431.99	1606.00	80.30	1686.30	728472.11
x)	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete. (RA based on-PWD SSR 2017-18 item 5.13)	Cum	288.00	2784.00	139.20	2923.20	841870.64
xi)	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver,compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any (RA based on-MORTH)	Cum	806.39	5735.00	286.75	6021.75	4855875.97
xii)	Providing road lane marking Sr no 222 PWD SSR 2017-18 item 6.23)	Sqm	2687.97	123.00	6.15	129.15	347150.68
Total cost of Road Reinstatement							16737704.67

Bill of Quantities for Water Supply work for DMA 18 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Material Section							
1	Providing and supplying at site of work DI Pipes (push on joints pressure pipes of DI of following class and Dia meters confirming to the indian Standard specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality)excluding GST levied by GOI and GOM in all respect including Thid party inspection charges of TPI Agency approved by the MJP including transit insurance,Railway frieght,unloading from railway wagon,loading in to the truck transportation to departmental store, unloading,stacking etc. completed as directed by engineer-in-charge(IS:1536:2001 for pipes and IS:158:1969 and 15:12820:1989 or latest edition/revision with amendments for rubber gaskets).(IS:8329:2000 latest version).						
	MJP 18-19,Page No.86, item no. 3						
	D.I. K-9						
i)	Dia.100 mm	Rmt	2,189	793.00			1735639.10
ii)	Dia.150 mm	Rmt	475	1151.00			546955.20
iii)	Dia. 200 mm	Rmt	253	1565.00			395319.00
iv)	Dia. 250 mm	Rmt	41	2081.00			85321.00
v)	Dia.300 mm	Rmt	32	2576.00			82174.40
vi)	Dia.350 mm	Rmt	64	3268.00			208498.40

Bill of Quantities for Water Supply work for DMA 18 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
2	Providing and supplying at site of work double flange sluice valve confirming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.						
	MJP 18-19,Page No.234, item no. (2a)						
	Sluice Valves PN - 1 (Without bypass arrangement)						
i)	100mm	No.	23.00	5807.00			133561.00
ii)	200mm	No.	2.00	15786.00			31572.00
iii)	250mm	No.	5.00	24407.00			122035.00
iv)	300mm	No.	3.00	30986.00			92958.00
v)	350mm	No.	3.00	45583.00			136749.00
	For flow meter						
i)	250mm	No.	8.00	24407.00			195256.00
ii)	300mm	No.	1.00	30986.00			30986.00
iii)	350mm	No.	4.00	45583.00			182332.00
3	Providing and supplying kinetic double orifice type air valves confirming to IS 14845 as per MJP's standard specifications having small orifice elastic ball resting on a gun metal orifice nipple, large orifice vulcanite ball seating on moulded seat ring, with built-in kinetic features, isolating sluice valve mounted in horizontal position and operated by wheel gearing, inlet face and drilled, including insurance, third party inspection charges, loading, unloading, transportation upto departmental stores, excluding GST levied by GOI and GOM in all respect etc. complete.						

Bill of Quantities for Water Supply work for DMA 18 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP 18-19,Page No.246, item no. 9						
	b) Kinetic Air valve flanged, Type PN - 1.6 200mm	No.	1.00	30341.00			30341.00
	Pressure Loggers						
4	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender. (Vendor supply item)	No.	2.00	55000.00			110000
	Residual chlorine analyser						
5	Design, installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	4.00	191451.00			765804

Bill of Quantities for Water Supply work for DMA 18 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
6	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and transportation to store/site, loading, unloading and stacking, all taxes , etc complete.						
	a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269	No.					916172.13
	b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	Kg					
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg					
7	Pressure Reducing Valve						
	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						
	MJP ELEC/MECH,Page No.106, item no. SA8						
	100 mm dia	No.	1	126717			126717
	150 mm dia	No.	1	163576			163576
	200 mm dia	No.	2	206052			412104

Bill of Quantities for Water Supply work for DMA 18 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Mechanical Type Meters.						
8	A) Domestic Meters						
b)	Multijet meters						
	Providing, installing and giving satisfactory field testing of						
	Domestic water meter, horizontal inferential multijet type						
	with magnetic drive and dry dial suitable for ambient 50° C						
	Temperature duly sealed against tampering complete with						
	couplings at both ends and conforming to class B as per						
	ISO 4064 along with manufacturer's test certificate and						
	guarantee certificate, including cost of all materials and						
	labour etc with OIML , MID certification for Abroad and						
	FCRI for India including 36 months guarantee etc complete						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 1 b, Page no. 74)						
	15mm	No.	488	1755			856440
	20mm	No.	10	2137			21370
	25mm	No.	20	3619			72380
	40mm	No.	10	6741			67410
9	Ultrasonic Water Meter						
A)	AMR Domestic Meters						
	Providing, installing and giving satisfactory field testing of domestic battery operated AMR water meters with no measurement of air along with manufacturing test certificate and guarantee certificate with battery life of minimum 10 years with GSM / RF technology for communication to server with PC software including 36 months guarantee, etc. complete.						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 2m A, Page no. 77 and 78)						
	15mm	No.	488	7984			3896192

Bill of Quantities for Water Supply work for DMA 18 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	20mm	No.	10	8708			87080
	25mm	No.	20	10154			203080
	40mm	No.	10	14493			144930
Sub Total Material							11852952.23
LABOUR SECTION							
10	Excavation for Water supply work						
	D.I.Pipes -K9						
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling , etc. complete. Lift 0 to 1.50 m	Cum	849.77	145.00	7.25	152.25	129377.86
	MJP 18-19,Page No.47, item no. 1						
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	283.26	165.00	8.25	173.25	49074.36
	MJP 18-19,Page No.47, item no. 2						
iii	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete.Lift 0 to 1.50 m	Cum	849.77	185.00	9.25	194.25	165068.31
	MJP 18-19,Page No.47, item no. 3						

Bill of Quantities for Water Supply work for DMA 18 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 m to 1.5m	Cum	910.00	454.00	22.70	476.70	433797.00
MJP 18-19,Page No.47, item no. 5							
v	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. Lift 0 to 1.50 m	Cum	283.26	770.00	38.50	808.50	229013.69
MJP 18-19,Page No.48, item no. 7							
11	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)						152695.36
MJP 18-19,Page No.73, item no. 10							

Bill of Quantities for Water Supply work for DMA 18 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.73, item no. 10						
i)	Dia.100	Nos.					
ii)	Dia.150	Nos.					
iii)	Dia.200	Nos.					
iv)	Dia.250	Nos.					
v)	Dia.300	Nos.					
vi)	Dia.400	Nos.					
vii)	Dia.500	Nos.					
12	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr	618.00	64.00	3.20	67.20	41529.60
	MJP 18-19,Page No.50, item no. 14						
13	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	241.72	66.00	3.30	69.30	16751.20
	MJP 18-19,Page No.50, item no. 15						
14	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	332.21	66.00	3.30	69.30	23022.22
	MJP 18-19,Page No.51, item no. 16						

Bill of Quantities for Water Supply work for DMA 18 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
15	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	a) In PCC M-100	Cum	15.00	3751.00	187.55	3938.55	59078.25
	MJP 18-19,Page No.59, item no. 1						
16	Carriage of surplus excavated material over distance exceeding 50m including loading , unloading, spreading etc as directed.	Cum					491718.91
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						
17	Providing and casting in situ cement concrete of trap granite/quartzite/gneiss metal of approved quality for RCC work as per the detail drawings and designs or as directed by Engineer in charge including normal dewatering,centering,formwork,compaction,finishing the form surface with CM 1:3 of sufficient minimum thickness if special finish to be provided and curing etc., complete (by weigh batching or mix design for M-250 and M-300 only.Use of L&T,ACC,Ambuja,Birala Gold,Manikgad,Rajashree etc. cement is permitted.(excluding M.S. or Tor Steel)						
	MJP 18-19,Page No.64, item no. 10						
	For foundation						
	In RCC M-250	Cum	150.00	5183.00	259.15	5442.15	816322.50

Bill of Quantities for Water Supply work for DMA 18 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
18	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, pardiess, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire	MT	16.50	48500.00	2425.00	50925.00	840262.50
	MJP 18-19,Page No.62, item no. 8						
19	Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.						
	MJP 18-19,Page No.84, item no. 2						
	D.I. K-9						
i)	Dia.100 mm	Rmt	2,188.70	58.00	2.90	60.90	133,291.83
ii)	Dia.150 mm	Rmt	475.20	79.00	3.95	82.95	39,417.84
iii)	Dia. 200 mm	Rmt	252.60	104.00	5.20	109.20	27,583.92
iv)	Dia. 250 mm	Rmt	41.00	135.00	6.75	141.75	5,811.75
v)	Dia.300 mm	Rmt	31.90	152.00	7.60	159.60	5,091.24
vi)	Dia.350 mm	Rmt	63.80	230.00	11.50	241.50	15,407.70

Bill of Quantities for Water Supply work for DMA 18 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
20	Lowering, laying and fixing in proper alignment and position all types of C.I. air vavevs as directed by engineer-in charge including cost of conveyance from stores to site of work, cost of all materialand giving satisfactory hydraullice testing, etc. complete. (for all class valves)						
	MJP 18-19,Page No.247, item no. 10						
	b) Air valve double ball (PN-1 and PN-1.6)						
	200mm	No	1.00	662.00	33.10	695.10	695.10
21	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting,placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments,labour,operation charges,etc.required for testing.the rate under this item shall also include cost of retesting,if necessary and reinstatement to original position using water supplied by the contractor						
	MJP 18-19,Page No.93, item no. 12						
	D.I.-K-9						
i)	Dia.100 mm	Km	2.19	6,546.00	327.30	6,873.30	15,043.59
ii)	Dia.150 mm	Km	0.48	8,763.00	438.15	9,201.15	4,372.39
iii)	Dia. 200 mm	Km	0.25	11,508.00	575.40	12,083.40	3,052.27
iv)	Dia. 250 mm	Km	0.04	14,992.00	749.60	15,741.60	645.41
v)	Dia.300 mm	Km	0.03	16,892.00	844.60	17,736.60	565.80
vi)	Dia.350 mm	Km	0.06	25,549.00	1,277.45	26,826.45	1,711.53

Bill of Quantities for Water Supply work for DMA 18 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
22	Lowering, laying and jointly in position following CID/F Reflex valves, Butterfly valves and Sluice valves including cost of all labour jointly material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)						
	MJP 18-19,Page No.240, item no. 4						
i)	100mm	No.	23.00	1877.00	93.85	1970.85	45329.55
ii)	200mm	No.	2.00	3069.00	153.45	3222.45	6444.90
iii)	250mm	No.	13.00	3999.00	199.95	4198.95	54586.35
iv)	300mm	No.	4.00	4148.00	207.40	4355.40	17421.60
v)	350mm	No.	7.00	5112.00	255.60	5367.60	37573.20
23	Providing and fixing CI road box including loading, unloading and carting to site of work including all necessary excavation in all types of starta and fixing in murum packing etc. complete.						
	MJP 18-19,Page No.388, item no. 5						
	a) 100mm x 225mm (20kg) for 100mm, 150mm, 200mm, 250mm	No.	30.00	1327.00	66.35	1393.35	41800.50
	Pressure Loggers						
24	Erection, installation, calliberation, commissioning of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	2.00	13197.00	659.85	13856.85	27713.70
	(Vendor supply item)						

Bill of Quantities for Water Supply work for DMA 18 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
25	Residual chlorine analyser						
	Erection ,installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	4.00	13197.00	659.85	13856.85	55427.40
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						

Bill of Quantities for Water Supply work for DMA 18 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
26	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and ratchet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						
	(RA)						
	15mm	Nos.	976.00	2022.00	101.10	2123.10	2072145.60
	20mm	Nos.	20.00	2247.00	112.35	2359.35	47187.00
	25mm	Nos.	40.00	2327.00	116.35	2443.35	97734.00
	40mm	Nos.	20.00	3642.00	182.10	3824.10	76482.00
27	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete.	Joint					200000.00

Bill of Quantities for Water Supply work for DMA 18 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.88, item						
28	Repairing damage water connection to house hold including labour, materials etc. complete. (Work shall be measured and paid for, per number on actual quantity.) (RA)	Nos.	50.00	406.00	20.30	426.30	21315.00
29	Repairing to the damaged drainage connection including labour, materials etc. complete. (RA) (Work shall be measured and paid for, per running meter basis on actual quantity.)						400000.00
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
	RA						
30	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows - (RA items)						
	1) Sluice valve						
	300mm (1.2M X 1.3M X 1.8M)	Nos	3.00	62315.00	3115.75	65430.75	196292.25
	350mm (1.2M X 1.3M X 1.8M)	Nos	3.00	62315.00	3115.75	65430.75	196292.25
	2) Pressure loggers = 0.9M X 0.9M X 1.5M	Nos	2.00	40140.00	2007.00	42147.00	84294.00
	3) Residual quality analyser - 0.9M X 0.9M X 1.5M	Nos	4.00	40140.00	2007.00	42147.00	168588.00
	3) Air valve - 1.2M X 1.2M X 1.5M	Nos	1.00	53618.00	2680.90	56298.90	56298.90
	4) Pressure reducing valve (for 250 and less) - 1.2M X 1.2M X 1.5M	Nos	4.00	53618.00	2680.90	56298.90	225195.60

Bill of Quantities for Water Supply work for DMA 18 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
31	Providing and constructing B.B. masonry valve Chamber with 15 CM thick 1:3:6 proportion PCC bedding ,excluding excavation,B.B. masonry in CM 1:5 proportion precast R.C.C frame and cover etc completed as directed by Engineer-In-Charge	Nos	1056.00	4149.00	207.45	4356.45	4600411.20
	Note: wall thickness:0.23 M for depth of 1.2 M and 0.35 m for balance depth exceeding 1.2 M.						
	As above 60 x 45 cm internal size and depth upto 0.90 m with precast RCC slab cover.						
	MJP schedule, MJP 18-19,Page No.385, item no. 1						
Sub Total Labour							12428935.11
Sub total (Material + Labour)							24281887.34
Reinstatement of Road works							
	Bituminous Road						
i)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2). Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 PWD SSR 2017-18 item 2.25)	Cum	620.13	112.00	5.60	117.60	72926.96
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	155.03	419.00	20.95	439.95	68206.24

Bill of Quantities for Water Supply work for DMA 18 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
ii)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	400.73	1606.00	80.30	1686.30	675755.21
iii)	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver. (RA based on-PWD SSR 2017-18 item 3.23)	Cum	667.89	1862.00	93.10	1955.10	1305786.85
iv)	DENSE BITUMINOUS MACADAM --Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder, @ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-40 grade with stone dust (RA based on-PWD SSR 2017-18 item 3.45)	Cum	160.29	5558.00	277.90	5835.90	935453.92

Bill of Quantities for Water Supply work for DMA 18 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
v)	BITUMINOUS CONCRETE --Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler(RA based on-PWD SSR 2017-18 item 3.51)	Cum	106.86	6917.00	345.85	7262.85	776122.68
vi)	Prime Coat						
	Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	2671.55	17	0.85	17.85	47687.17
	Sr no 145 PWD SSR Item no 3.29						
vii)	Tack Coat						
	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg/sqm on the prepared bituminous/granular surface cleaned with mechanical broom. etc. complete.(Spec. No. MORTH-503)	Sqm	2671.55	8	0.40	8.40	22441.02

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Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Sr no 146 PWD SSR Item no 3.30						
	Concrete Road						
viii)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 PWD SSR 2017-18 item 2.25)	Cum	265.77	112.00	5.60	117.60	31254.41
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	66.44	419.00	20.95	439.95	29231.25
ix)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	171.74	1606.00	80.30	1686.30	289609.38
x)	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete.(RA based on-PWD SSR 2017-18 item 5.13)	Cum	114.50	2784.00	139.20	2923.20	334691.78

Bill of Quantities for Water Supply work for DMA 18 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
xi)	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver,compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any(RA based on-MoRTH)	Cum	320.59	5735.00	286.75	6021.75	1930488.75
xii)	Providing road lane marking Sr no 222 PWD SSR 2017-18 item 6.23)	Sqm	1068.62	123.00	6.15	129.15	138012.27
Total cost of Road Reinstatement							6657667.89

Bill of Quantities for Water Supply work for DMA 19 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Material Section							
1	Providing and supplying at site of work DI Pipes (push on joints pressure pipes of DI of following class and Dia meters confirming to the indian Standard specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality)excluding GST levied by GOI and GOM in all respect including Thid party inspection charges of TPI Agency approved by the MJP including transit insurance,Railway frieght,unloading from railway wagon,loading in to the truck transportation to departmental store, unloading,stacking etc. completed as directed by engineer-in-charge(IS:1536:2001 for pipes and IS:158:1969 and 15:12820:1989 or latest edition/revision with amendments for rubber gaskets).(IS:8329:2000 latest version).						
	MJP 18-19,Page No.86, item no. 3						
	D.I. K-9						
	i) 100mm DI K9	Rmt	3,576	793.00			2835847.30
	ii) 150mm DI K9	Rmt	1,192	1151.00			1371992.00
	iii) 200mm DI K9	Rmt	1	1565.00			1408.50
	iv) 250mm DI K9	Rmt	670	2081.00			1394061.90
	v) 300mm DI K9	Rmt	15	2576.00			39670.40
2	Providing and supplying at site of work double flange sluice valve confirming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.						
	MJP 18-19,Page No.234, item no. (2a)						

Bill of Quantities for Water Supply work for DMA 19 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Sluice Valves PN - 1 (Without bypass arrangement)						
i)	100mm	No.	18.00	5807.00			104526.00
ii)	150mm	No.	7.00	8709.00			60963.00
iii)	200mm	No.	1.00	15786.00			15786.00
iv)	250mm	No.	3.00	24407.00			73221.00
v)	300mm	No.	1.00	30986.00			30986.00
vi)	400mm	No.	1.00	60013.00			60013.00
vii)	450mm	No.	1.00	64520.00			64520.00
viii)	500mm	No.	2.00	92991.00			185982.00
	For flow meter						
i)	150mm	No.	2.00	8709.00			17418.00
ii)	250mm	No.	4.00	24407.00			97628.00
iii)	500mm	No.	2.00	92991.00			185982.00
3	Providing and supplying kinetic double orifice type air valves confirming to IS 14845 as per MJP's standard specifications having small orifice elastic ball resting on a gun metal orifice nipple, large orifice vulcanite ball seating on moulded seat ring, with built-in kinetic features, isolating sluice valve mounted in horizontal position and operated by wheel gearing, inlet face and drilled, including insurance, third party inspection charges, loading, unloading, transportation upto departmental stores, excluding GST levied by GOI and GOM in all respect etc. complete.						
	MJP 18-19,Page No.246, item no. 9						
	b) Kinetic Air valve flanged, Type PN - 1.6						
	200mm	No.	1.00	30341.00			30341.00

Bill of Quantities for Water Supply work for DMA 19 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Pressure Loggers						
4	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	6.00	55000.00			330000
	(Vendor supply item)						

Bill of Quantities for Water Supply work for DMA 19 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Residual chlorine analyser						
5	Design, installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	2.00	191451.00			382902
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
6	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and tranportation to store/site, loading, unloading and stacking, all taxes , etc complete.						
	a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269	No.					1692894.03
	b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	Kg					
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg					
	Bettery Operated electromagnetic flow meter						

Bill of Quantities for Water Supply work for DMA 19 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
7	Providing, erecting, testing and commissioning of battery operated electromagnetic flow meter built in GSM (with Simcard charges for 36 months validity) of various diameters as per the following specifications including 36 months guarantee etc complete.						
	MJP ELEC/MECH,Page No.93, item no. WM4						
i)	150 mm line size	No.	1	105692			105692
8	Pressure Reducing Valve						
	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						
	MJP ELEC/MECH,Page No.106, item no. SA8						
	200 mm dia	No.	2	195494			390988
	400 mm dia	No.	1	525712			525712
	Mechanical Type Meters.						
9	A) Domestic Meters						
b)	Multijet meters						
	Providing, installing and giving satisfactory field testing of Domestic water meter, horizontal inferential multijet type with magnetic drive and dry dial suitable for ambient 50° C Temperature duly sealed against tampering complete with couplings at both ends and conforming to class B as per ISO 4064 along with manufacturer's test certificate and guarantee certificate, including cost of all materials and labour etc with OIML , MID certification for Abroad and FCRI for India including 36 months guarantee etc complete						

Bill of Quantities for Water Supply work for DMA 19 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	(MJP Elec/Mech CSR 2018-19, section 19, WM 1 b, Page no. 74)						
	15mm	No.	488	1755			856440
	20mm	No.	10	2137			21370
	25mm	No.	2	3619			7238
	40mm	No.	10	6741			67410
			510				
10	Ultrasonic Water Meter						
A)	AMR Domestic Meters						
	Providing, installing and giving satisfactory field testing of domestic battery operated AMR water meters with no measurement of air along with manufacturing test certificate and guarantee certificate with battery life of minimum 10 years with GSM / RF technology for communication to server with PC software including 36 months guarantee, etc. complete.						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 2m A, Page no. 77 and 78)						
	15mm		488	7984			3896192
	20mm		10	8708			87080
	25mm		2	10154			20308
	40mm		10	14493			144930
			510				
						Total for material section	15099502.13
LABOUR SECTION							
11	Excavation for Water supply work						
	D.I.Pipes -K9						

Bill of Quantities for Water Supply work for DMA 19 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling , etc. complete. Lift 0 to 1.50 m	Cum	1532.86	145.00	7.25	152.25	233378.13
	MJP 18-19,Page No.47, item no. 1						
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	510.95	165.00	8.25	173.25	88522.74
	MJP 18-19,Page No.47, item no. 2						
iii	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	cum	1532.86	185.00	9.25	194.25	297758.30
	MJP 18-19,Page No.47, item no. 3						
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 m to 1.5m	Cum	2249.13	454.00	22.70	476.70	1072157.89

Bill of Quantities for Water Supply work for DMA 19 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP 18-19,Page No.47, item no. 5						
v	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. Lift 0 to 1.50 m	Cum	510.95	791.00	39.55	830.55	424372.64
	MJP 18-19,Page No.48, item no. 7						
12	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)						282149.01
	MJP 18-19,Page No.73, item no. 10						
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.73, item no. 10						
i)	Dia.100	Nos.					
ii)	Dia.150	Nos.					
iii)	Dia.200	Nos.					
iv)	Dia.250	Nos.					
v)	Dia.300	Nos.					
vi)	Dia.400	Nos.					
vii)	Dia.500	Nos.					

Bill of Quantities for Water Supply work for DMA 19 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
13	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr					41529.60
	MJP 18-19,Page No.50, item no. 14						
14	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	447.97	66.00	3.30	69.30	31044.32
	MJP 18-19,Page No.50, item no. 15						
15	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	597.19	66.00	3.30	69.30	41385.25
	MJP 18-19,Page No.51, item no. 16						
16	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	a) In PCC M-100	Cum	15.00	3751.00	187.55	3938.55	59078.25
	MJP 18-19,Page No.59, item no. 1						
17	Carriage of surplus excavated material over distance exceeding 50m includig loading , unloading, spreading etc as directed.	Cum	2073.75	406.77	20.34	427.11	885714.22

Bill of Quantities for Water Supply work for DMA 19 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						
18	Providing and casting in situ cement concrete of trap granite/quartzite/gneiss metal of approved quality for RCC work as per the detail drawings and designs or as directed by Engineer in charge including normal dewatering,centering,formwork,compaction,finishing the form surface with CM 1:3 of sufficient minimum thickness if special finish to be provided and curing etc., complete (by weigh batching or mix design for M-250 and M-300 only.Use of L&T,ACC,Ambuja,Birala Gold,Manikgad,Rajashree etc. cement is permitted.(excluding M.S. or Tor Steel)						
	MJP 18-19,Page No.64, item no. 10						
	For foundation						
	In RCC M-250	Cum	150.00	5075.00	253.75	5328.75	799312.50
19	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire	MT	16.50	48500.00	2425.00	50925.00	840262.50
	MJP 18-19,Page No.62, item no. 8						

Bill of Quantities for Water Supply work for DMA 19 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
20	Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.						
	MJP 18-19,Page No.84, item no. 2						
	D.I. K-9						
i)	100mm DI K9	Rmt	3,576.10	58.00	2.90	60.90	217,784.49
ii)	150mm DI K9	Rmt	1,192.00	79.00	3.95	82.95	98,876.40
iii)	200mm DI K9	Rmt	0.90	104.00	5.20	109.20	98.28
iv)	250mm DI K9	Rmt	669.90	135.00	6.75	141.75	94,958.33
v)	300mm DI K9	Rmt	15.40	152.00	7.60	159.60	2,457.84
21	Lowering, laying and fixing in proper alignment and position all types of C.I. air valevs as directed by engineer-in charge including cost of conveyance from stores to site of work, cost of all materialand giving satisfactory hydraullice testing, etc. complete. (for all class valves)						
	MJP 18-19,Page No.247, item no. 10						
	b) Air valve double ball (PN-1 and PN-1.6)						
	200mm	No	1.00	662.00	33.10	695.10	695.10

Bill of Quantities for Water Supply work for DMA 19 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
22	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting,placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments,labour,operation charges,etc.required for testing.the rate under this item shall also include cost of retesting,if necessary and reinstatement to original position using water supplied by the contractor						
	MJP 18-19,Page No.93, item no. 12						
	D.I.-K-9						
i)	100mm DI K9	Km	3.58	6,546.00	327.30	6,873.30	24,579.61
ii)	150mm DI K9	Km	1.19	8,763.00	438.15	9,201.15	10,967.77
iii)	200mm DI K9	Km	0.00	11,508.00	575.40	12,083.40	10.88
iv)	250mm DI K9	Km	0.67	14,992.00	749.60	15,741.60	10,545.30
v)	300mm DI K9	Km	0.02	16,892.00	844.60	17,736.60	273.14
23	Lowering, laying and jointly in position following CID/F Reflex valves, Butterfly valves and Sluice valves including cost of all labour jointly material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)						
	MJP 18-19,Page No.240, item no. 4						
i)	100mm	No.	18.00	1877.00	93.85	1970.85	35475.30
ii)	150mm	No.	9.00	2950.00	147.50	3097.50	27877.50
iii)	200mm	No.	1.00	3069.00	153.45	3222.45	3222.45
iv)	250mm	No.	7.00	3999.00	199.95	4198.95	29392.65
v)	300mm	No.	1.00	4148.00	207.40	4355.40	4355.40
vi)	400mm	No.	1.00	6167.00	308.35	6475.35	6475.35

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Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
vii)	450mm	No.	1.00	7338.00	366.90	7704.90	7704.90
viii)	500mm	No.	5.00	7598.00	379.90	7977.90	39889.50
24	Providing and fixing CI road box including loading, unloading and carting to site of work including all necessary excavation in all types of starta and fixing in murum packing etc. complete.						
	MJP 18-19,Page No.388, item no. 5						
	a) 100mm x 225mm (20kg) for 100mm, 150mm, 200mm, 250mm	No.	29.00	1327.00	66.35	1393.35	40407.15
	Pressure Loggers						
25	Erection, installation, calliberation, commissioning of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	6.00	13197.00	659.85	13856.85	83141.10
	(Vendor supply item)						
26	Residual chlorine analyser						
	Erection ,installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	2.00	13197.00	659.85	13856.85	27713.70

Bill of Quantities for Water Supply work for DMA 19 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
27	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and ratchet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						
	(RA)						
	15mm	Nos.	976.00	2022.00	101.10	2123.10	2072145.60
	20mm	Nos.	20.00	2247.00	112.35	2359.35	47187.00
	25mm	Nos.	4.00	2327.00	116.35	2443.35	9773.40
	40 mm	Nos.	20.00	3642.00	182.10	3824.10	76482.00

Bill of Quantities for Water Supply work for DMA 19 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
28	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete. Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.88, item no. 4	Joint					200000.00
29	Repairing damage water connection to house hold including labour, materials etc. complete. (Work shall be measured and paid for, per number on actual quantity.) (RA)	Nos.	50.00	406.00	20.30	426.30	21315.00
30	Repairing to the damaged drainage connection including labour, materials etc. complete. (RA) (Work shall be measured and paid for, per running meter basis on actual quantity.)						400000.00
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
	RA						
31	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows - (RA items)						
	1) Sluice valve						
	300mm (1.2M X 1.3M X 1.8M)	Nos	1.00	62315.00	3115.75	65430.75	65430.75
	400mm (1.2M X 1.3M X 1.8M)	Nos	1.00	62315.00	3115.75	65430.75	65430.75
	450mm (1.3M X 2M X 2.2M)	Nos	1.00	94039.00	4701.95	98740.95	98740.95
	500mm (1.3M X 2M X 2.2M)	Nos	2.00	94039.00	4701.95	98740.95	197481.90
	2) Bulk flow meter (150mm) - 3M X 3.5M X 2M	Nos	1.00	247336.00	12366.80	259702.80	259702.80

Bill of Quantities for Water Supply work for DMA 19 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	3) Pressure loggers = 0.9M X 0.9M X 1.5M	Nos	6.00	40140.00	2007.00	42147.00	252882.00
	4) Residual quality analyser - 0.9M X 0.9M X 1.5M	Nos	2.00	40140.00	2007.00	42147.00	84294.00
	5) Air valve - 1.2M X 1.2M X 1.5M	Nos	1.00	53618.00	2680.90	56298.90	56298.90
	6) Pressure reducing valve (for 250 and less) - 1.2M X 1.2M X 1.5M	Nos	2.00	53618.00	2680.90	56298.90	112597.80
	400mm (1.2M X 1.3M X 1.8M)	Nos	1.00	62315.00	3115.75	65430.75	65430.75
32	Providing and constructing B.B. masonry valve Chamber with 15 CM thick 1:3:6 proportion PCC bedding ,excluding excavation,B.B. masonry in CM 1:5 proportion precast R.C.C frame and cover etc completed as directed by Engineer-In-Charge	Nos	1020	4149	207.45	4356.45	4443579.00
	Note: wall thickness:0.23 M for depth of 1.2 M and 0.35 m for balance depth exceeding 1.2 M.						
	As above 60 x 45 cm internal size and depth upto 0.90 m with precast RCC slab cover.						
	MJP schedule, MJP 18-19,Page No.385, item no. 1						
Sub Total Labour							14392340.06
Sub total (Material + Labour)							29491842.19

Bill of Quantities for Water Supply work for DMA 19 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Reinstatement of Road works							
	Bituminous Road						
i)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2). Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 PWD SSR 2017-18 item 2.25)	Cum	1114.75	112.00	5.60	117.60	131095.09
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	278.69	419.00	20.95	439.95	122609.03
ii)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	715.88	1606.00	80.30	1686.30	1207183.17
iii)	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver.(RA based on-PWD SSR 2017-18 item 3.23)	Cum	1193.13	1862.00	93.10	1955.10	2332684.80

Bill of Quantities for Water Supply work for DMA 19 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iv)	DENSE BITUMINOUS MACADAM --Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder, @ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-40 grade with stone dust(RA based on-PWD SSR 2017-18 item 3.45)	Cum	286.35	5558.00	277.90	5835.90	1671114.34
v)	BITUMINOUS CONCRETE --Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler(RA based on-PWD SSR 2017-18 item 3.51)	Cum	190.90	6917.00	345.85	7262.85	1386481.70
vi)	Prime Coat Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	4772.51	17	0.85	17.85	85189.35
	Sr no 145 PWD SSR Item no 3.29						

Bill of Quantities for Water Supply work for DMA 19 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
vii)	Tack Coat						
	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg/sqm on the prepared bituminous/granular surface cleaned with mechanical broom. etc. complete.(Spec. No. MORTH-503)	Sqm	4772.51	8	0.40	8.40	40089.11
	Sr no 146 PWD SSR Item no 3.30						
	Concrete Road						
viii)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 PWD SSR 2017-18 item 2.25)	Cum	477.75	112.00	5.60	117.60	56183.61
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	119.44	419.00	20.95	439.95	52546.73
ix)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	306.80	1606.00	80.30	1686.30	517364.22

Bill of Quantities for Water Supply work for DMA 19 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
x)	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete. (RA based on-PWD SSR 2017-18 item 5.13)	Cum	204.54	2784.00	139.20	2923.20	597900.37
xi)	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver,compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any (RA based on-MoRTH)	Cum	572.70	5735.00	286.75	6021.75	3448665.26
xii)	Providing road lane marking Sr no 222 PWD SSR 2017-18 item 6.23)	Sqm	1909.01	123.00	6.15	129.15	246548.00
Total cost of Road Reinstatement							11895654.76

Bill of Quantities for Water Supply work for DMA 20 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Material Section							
1	Providing and supplying at site of work DI Pipes (push on joints pressure pipes of DI of following class and Dia meters confirming to the indian Standard specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality)excluding GST levied by GOI and GOM in all respect including Thid party inspection charges of TPI Agency approved by the MJP including transit insurance,Railway frieght,unloading from railway wagon,loading in to the truck transportation to departmental store, unloading,stacking etc. completed as directed by engineer-in-charge(IS:1536:2001 for pipes and IS:158:1969 and 15:12820:1989 or latest edition/revision with amendments for rubber gaskets).(IS:8329:2000 latest version).						
	MJP 18-19,Page No.86, item no. 3						
	D.I. K-9						
i)	100mm DI K9	Rmt	2,682	793.00			2126667.40
ii)	150mm DI K9	Rmt	803	1151.00			924598.30
iii)	200mm DI K9	Rmt	372	1565.00			581397.50
iv)	250mm DI K9	Rmt	133	2081.00			276981.10
v)	300mm DI K9	Rmt	8	2576.00			20608.00
vi)	450mm DI K9	Rmt	171	4640.00			794832.00
vii)	500mm DI K9	Rmt	48	5314.00			257197.60
viii)	600mm DI K10	Rmt	453	7081.00			3209109.20

Bill of Quantities for Water Supply work for DMA 20 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
2	Providing and supplying at site of work double flange sluice valve conforming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.						
	MJP 18-19,Page No.234, item no. (2a)						
	Sluice Valves PN - 1 (Without bypass arrangement)						
i)	100mm	No.	25.00	5807.00			145175.00
ii)	150mm	No.	13.00	8709.00			113217.00
iii)	200mm	No.	4.00	15786.00			63144.00
iv)	250mm	No.	3.00	24407.00			73221.00
v)	300mm	No.	4.00	30986.00			123944.00
vi)	350mm	No.	3.00	45583.00			136749.00
	For flow meter						
i)	100mm	No.	4.00	5807.00			23228.00
ii)	350mm	No.	2.00	45583.00			91166.00
iii)	400mm	No.	5.00	60013.00			300065.00
iv)	450mm	No.	1.00	54520.00			54520.00

Bill of Quantities for Water Supply work for DMA 20 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
3	Providing and supplying kinetic double orifice type air valves confirming to IS 14845 as per MJP's standard specifications having small orifice elastic ball resting on a gun metal orifice nipple, large orifice vulcanite ball seating on moulded seat ring, with built-in kinetic features, isolating sluice valve mounted in horizontal position and operated by wheel gearing, inlet face and drilled, including insurance, third party inspection charges, loading, unloading, transportation upto departmental stores, excluding GST levied by GOI and GOM in all respect etc. complete.						
	MJP 18-19,Page No.246, item no. 9						
	b) Kinetic Air valve flanged, Type PN - 1.6						
	200mm	No.	3.00	30341.00			91023.00
	Pressure Loggers						
4	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	8.00	55000.00			440000
	(Vendor supply item)						
	Residual chlorine analyser						
5	Design, installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at our water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	1.00	191451.00			191451

Bill of Quantities for Water Supply work for DMA 20 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Overall Range : 0 - 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Output : 4 - 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (Ag/AgCl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
6	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and transportation to store/site, loading, unloading and stacking, all taxes , etc complete.						
	a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269	No.					1494684.57
	b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	Kg					
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg					
	Battery Operated electromagnetic flow meter						
7	Providing, erecting, testing and commissioning of battery operated electromagnetic flow meter built in GSM (with Simcard charges for 36 months validity) of various diameters as per the following specifications including 36 months guarantee etc complete.						
	MJP ELEC/MECH,Page No.86, item no. WM3						
i)	100 mm line size	No.	2	98041			196082

Bill of Quantities for Water Supply work for DMA 20 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
8	Pressure Reducing Valve						
	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						
	MJP ELEC/MECH,Page No.106, item no. SA8						
	300 mm dia	No.	4	333633			1334532
	Mechanical Type Meters.						
9	A) Domestic Meters						
b)	Multijet meters						
	Providing, installing and giving satisfactory field testing of						
	Domestic water meter, horizontal inferential multijet type						
	with magnetic drive and dry dial suitable for ambient 50° C						
	Temperature duly sealed against tampering complete with						
	couplings at both ends and conforming to class B as per						
	ISO 4064 along with manufacturer's test certificate and						
	guarantee certificate, including cost of all materials and						
	labour etc with OIML , MID certification for Abroad and						
	FCRI for India including 36 months guarantee etc complete						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 1 b, Page no. 74)						
	15mm	No.	977	1755			1714635
	20mm	No.	20	2137			42740
	25mm	No.	3	3619			10857
	40mm	No.	10	6741			67410
10	Ultrasonic Water Meter						
A)	AMR Domestic Meters						

Bill of Quantities for Water Supply work for DMA 20 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Providing, installing and giving satisfactory field testing of domestic battery operated AMR water meters with no measurement of air along with manufacturing test certificate and guarantee certificate with battery life of minimum 10 years with GSM / RF technology for communication to server with PC software including 36 months guarantee, etc. complete.						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 2m A, Page no. 77 and 78)						
	15mm		977	7984			7800368
	20mm		20	8708			174160
	25mm		3	10154			30462
	40mm		10	14493			144930
Total for material section							23049154.67
LABOUR SECTION							
11	Excavation for Water supply work						
	D.I.Pipes -K9						
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling , etc. complete. Lift 0 to 1.50 m	Cum	1508.16	145.00	7.25	152.25	229616.97
	MJP 18-19,Page No.47, item no. 1						
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	502.72	165.00	8.25	173.25	87096.09
	MJP 18-19,Page No.47, item no. 2						

Bill of Quantities for Water Supply work for DMA 20 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iii	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	1508.16	185.00	9.25	194.25	292959.58
MJP 18-19,Page No.47, item no. 3							
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	1530.88	454.00	22.70	476.70	729770.88
MJP 18-19,Page No.47, item no. 5							
v	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. Lift 1.50 to 3.00 m	Cum	502.72	791.00	39.55	830.55	417533.39
MJP 18-19,Page No.48, item no. 7							

Bill of Quantities for Water Supply work for DMA 20 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
12	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)						409569.56
	MJP 18-19,Page No.73, item no. 10						
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.73, item no. 10						
	i) Dia.100	Nos.					
	ii) Dia.150	Nos.					
	iii) Dia.200	Nos.					
	iv) Dia.250	Nos.					
	v) Dia.300	Nos.					
	vi) Dia.400	Nos.					
	vii) Dia.500	Nos.					
13	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr	618.00	64.00	3.20	67.20	41529.60
	MJP 18-19,Page No.50, item no. 14						

Bill of Quantities for Water Supply work for DMA 20 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
14	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	583.04	66.00	3.30	69.30	40404.67
	MJP 18-19,Page No.50, item no. 15						
15	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	551.13	66.00	3.30	69.30	38193.46
	MJP 18-19,Page No.51, item no. 16						
16	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	a) In PCC M-100	Cum	15.00	3751.00	187.55	3938.55	59078.25
	MJP 18-19,Page No.59, item no. 1						
17	Carriage of surplus excavated material over distance exceeding 50m including loading , unloading, spreading etc as directed.	Cum					1102518.34
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						

Bill of Quantities for Water Supply work for DMA 20 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
18	Providing and casting in situ cement concrete of trap granite/quartzite/gneiss metal of approved quality for RCC work as per the detail drawings and designs or as directed by Engineer in charge including normal dewatering,centering,formwork,compaction,finishing the form surface with CM 1:3 of sufficient minimum thickness if special finish to be provided and curing etc., complete (by weigh batching or mix design for M-250 and M-300 only.Use of L&T,ACC,Ambuja,Birala Gold,Manikgad,Rajashree etc. cement is permitted.(excluding M.S. or Tor Steel)						
	MJP 18-19,Page No.59, item no. 2						
	For foundation						
	In RCC M-250	Cum	150.00	5183.00	259.15	5442.15	816322.50
19	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire	MT	16.50	48500.00	2425.00	50925.00	840262.50
	MJP 18-19,Page No.62, item no. 8						

Bill of Quantities for Water Supply work for DMA 20 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
20	Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.						
	MJP 18-19,Page No.84, item no. 2						
	D.I. K-9						
i)	100mm DI K9	Rmt	2,681.80	58.00	2.90	60.90	163,321.62
ii)	150mm DI K9	Rmt	803.30	79.00	3.95	82.95	66,633.74
iii)	200mm DI K9	Rmt	371.50	104.00	5.20	109.20	40,567.80
iv)	250mm DI K9	Rmt	133.10	135.00	6.75	141.75	18,866.93
v)	300mm DI K9	Rmt	8.00	152.00	7.60	159.60	1,276.80
vi)	450mm DI K9	Rmt	171.30	242.00	12.10	254.10	43,527.33
vii)	500mm DI K9	Rmt	48.40	230.00	11.50	241.50	11,688.60
viii)	600mm DI K10	Rmt	453.20	302.00	15.10	317.10	143,709.72
21	Lowering, laying and fixing in proper alignment and position all types of C.I. air valevs as directed by engineer-in charge including cost of conveyance from stores to site of work, cost of all materialand giving satisfactory hydraullice testing, etc. complete. (for all class valves)						
	MJP 18-19,Page No.247, item no. 10						
	b) Air valve double ball (PN-1 and PN-1.6)						
	200mm	No	3.00	662.00	33.10	695.10	2,085.30

Bill of Quantities for Water Supply work for DMA 20 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
22	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting,placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments,labour,operation charges,etc.required for testing.the rate under this item shall also include cost of retesting,if necessary and reinstatement to original position using water supplied by the contractor						
	MJP 18-19,Page No.93, item no. 12						
	D.I.-K-9						
i)	100mm DI K9	Km	2.68	6,546.00	327.30	6,873.30	18,432.82
ii)	150mm DI K9	Km	0.80	8,763.00	438.15	9,201.15	7,391.28
iii)	200mm DI K9	Km	0.37	11,508.00	575.40	12,083.40	4,488.98
iv)	250mm DI K9	Km	0.13	14,992.00	749.60	15,741.60	2,095.21
v)	300mm DI K9	Km	0.01	16,892.00	844.60	17,736.60	141.89
vi)	450mm DI K9	Km	0.17	26,922.00	1,346.10	28,268.10	4,842.33
vii)	500mm DI K9	Km	0.05	31,039.00	1,551.95	32,590.95	1,577.40
viii)	600mm DI K10	Km	0.45	41,685.00	2,084.25	43,769.25	19,836.22
23	Lowering, laying and jointly in position following CID/F Reflex valves, Butterfly valves and Sluice valves including cost of all labour jointly material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)						
	MJP 18-19,Page No.240, item no. 4						
i)	100mm	No.	29.00	1877.00	93.85	1970.85	57154.65
ii)	150mm	No.	13.00	2950.00	147.50	3097.50	40267.50

Bill of Quantities for Water Supply work for DMA 20 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iii)	200mm	No.	4.00	3069.00	153.45	3222.45	12889.80
iv)	250mm	No.	3.00	3999.00	199.95	4198.95	12596.85
v)	300mm	No.	4.00	4148.00	207.40	4355.40	17421.60
vi)	350mm	No.	5.00	5112.00	255.60	5367.60	26838.00
vii)	400mm	No.	5.00	6167.00	308.35	6475.35	32376.75
viii)	450mm	No.	1.00	7338.00	366.90	7704.90	7704.90
24	Providing and fixing CI road box including loading, unloading and carting to site of work including all necessary excavation in all types of starta and fixing in murum packing etc. complete.						
	MJP 18-19,Page No.388, item no. 5						
	a) 100mm x 225mm (20kg) for 100mm, 150mm, 200mm, 250mm	No.	45.00	1327.00	66.35	1393.35	62700.75
	Pressure Loggers						
25	Erection, installation, calliberation, commissioning of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	8.00	13197.00	659.85	13856.85	110854.80
	(Vendor supply item)						

Bill of Quantities for Water Supply work for DMA 20 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
26	Residual chlorine analyser						
	Erection ,installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	1.00	13197.00	659.85	13856.85	13856.85
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						

Bill of Quantities for Water Supply work for DMA 20 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
27	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and ratchet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						
	(RA)						
	15mm	Nos.	1954.00	2022.00	101.10	2123.10	4148537.40
	20mm	Nos.	40.00	2247.00	112.35	2359.35	94374.00
	25mm	Nos.	6.00	2327.00	116.35	2443.35	14660.10
	40mm	Nos.	20.00	3642.00	182.10	3824.10	76482.00
28	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete.	Joint					200000.00

Bill of Quantities for Water Supply work for DMA 20 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.88, item no. 4						
29	Repairing damage water connection to house hold including labour, materials etc. complete. (Work shall be measured and paid for, per number on actual quantity.) (RA)	Nos.	50.00	406.00	20.30	426.30	21315.00
30	Repairing to the damaged drainage connection including labour, materials etc. complete. (RA) (Work shall be measured and paid for, per running meter basis on actual quantity.)						400000.00
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
	RA						
31	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows - (RA items)						
	1) Sluice valve						
	300mm (1.2M X 1.3M X 1.8M)	Nos	4.00	62315.00	3115.75	65430.75	261723.00
	350mm (1.2M X 1.3M X 1.8M)	Nos	3.00	62315.00	3115.75	65430.75	196292.25
	2)Bulk flow meter (100mm) - 3M X 3.5M X 2M	Nos	2.00	247336.00	12366.80	259702.80	519405.60
	3) Pressure loggers = 0.9M X 0.9M X 1.5M	Nos	8.00	40140.00	2007.00	42147.00	337176.00
	4) Residual quality analyser - 0.9M X 0.9M X 1.5M	Nos	1.00	40140.00	2007.00	42147.00	42147.00
	5) Air valve - 1.2M X 1.2M X 1.5M	Nos	3.00	53618.00	2680.90	56298.90	168896.70
	6) Pressure reducing valve						
	300mm (1.2M X 1.3M X 1.8M)	Nos	4.00	62315.00	3115.75	65430.75	261723.00

Bill of Quantities for Water Supply work for DMA 20 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
32	Providing and constructing B.B. masonry valve Chamber with 15 CM thick 1:3:6 proportion PCC bedding ,excluding excavation,B.B. masonry in CM 1:5 proportion precast R.C.C frame and cover etc completed as directed by Engineer-In-Charge	Nos	2020.00	4149.00	207.45	4356.45	8800029.00
	Note: wall thickness:0.23 M for depth of 1.2 M and 0.35 m for balance depth exceeding 1.2 M.						
	As above 60 x 45 cm internal size and depth upto 0.90 m with precast RCC slab cover.						
	MJP schedule, MJP 18-19,Page No.385, item no. 1						
Sub Total Labour							21592763.26
Sub total (Material + Labour)							44641917.93
Reinstatement of Road works							
	Bituminous Road						
i)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2). Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 PWD SSR 2017-18 item 2.25)	Cum	1028.78	112.00	5.60	117.60	120984.55

Bill of Quantities for Water Supply work for DMA 20 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	257.20	419.00	20.95	439.95	113152.96
ii)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	613.02	1606.00	80.30	1686.30	1033729.30
iii)	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver.(RA based on-PWD SSR 2017-18 item 3.23)	Cum	1021.69	1862.00	93.10	1955.10	1997513.45
iv)	DENSE BITUMINOUS MACADAM :--Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder,@ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-40 grade with stone dust(RA based on-PWD SSR 2017-18 item 3.45)	Cum	245.21	5558.00	277.90	5835.90	1431000.61

Bill of Quantities for Water Supply work for DMA 20 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
v)	BITUMINOUS CONCRETE --Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler(RA based on-PWD SSR 2017-18 item 3.51)	Cum	163.47	6917.00	345.85	7262.85	1187265.35
vi)	Prime Coat						
	Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	4086.78	17	0.85	17.85	72948.93
	Sr no 145 PWD SSR Item no 3.29						
vii)	Tack Coat						
	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg/sqm on the prepared bituminous/granular surface cleaned with mechanical broom. etc. complete.(Spec. No. MORTH-503)	Sqm	4086.78	8	0.40	8.40	34328.91
	Sr no 146 PWD SSR Item no 3.30						

Bill of Quantities for Water Supply work for DMA 20 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Concrete Road						
viii)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting Sr no 102 PWD SSR 2017-18 item 2.25)	Cum	440.91	112.00	5.60	117.60	51850.52
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	110.23	419.00	20.95	439.95	48494.13
ix)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	262.72	1606.00	80.30	1686.30	443026.84
x)	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete.(RA based on-PWD SSR 2017-18 item 5.13)	Cum	175.15	2784.00	139.20	2923.20	511991.17

Bill of Quantities for Water Supply work for DMA 20 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
xi)	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver,compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any(RA based on-MoRTH)	Cum	490.41	5735.00	286.75	6021.75	2953144.48
xii)	Providing road lane marking Sr no 222 PWD SSR 2017-18 item 6.23)	Sqm	1038.07	123.00	6.15	129.15	134066.74
Total cost of Road Reinstatement							10133497.96

Bill of Quantities for Water Supply work for DMA 21 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Material Section							
1	Providing and supplying at site of work DI Pipes (push on joints pressure pipes of DI of following class and Dia meters confirming to the indian Standard specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality)excluding GST levied by GOI and GOM in all respect including Thid party inspection charges of TPI Agency approved by the MJP including transit insurance,Railway frieght,unloading from railway wagon,loading in to the truck transportation to departmental store, unloading,stacking etc. completed as directed by engineer-in-charge(IS:1536:2001 for pipes and IS:158:1969 and 15:12820:1989 or latest edition/revision with amendments for rubber gaskets).(IS:8329:2000 latest version).						
	MJP 18-19,Page No.86, item no. 3						
	D.I. K-9						
i)	Dia.100 mm	Rmt	1,950	793.00			1546587.90
ii)	Dia.150 mm	Rmt	881	1151.00			1014146.10
iii)	Dia.300 mm	Rmt	36	2576.00			93508.80
2	Providing and supplying at site of work double flange sluice valve confirming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.						
	MJP 18-19,Page No.234, item no. (2a)						
	Sluice Valves PN - 1 (Without bypass arrangement)						
i)	150mm	No.	5.00	8709.00			43545.00
ii)	200mm	No.	2.00	15786.00			31572.00
iii)	250mm	No.	2.00	24407.00			48814.00

Bill of Quantities for Water Supply work for DMA 21 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	For flow meter and PRV						
i)	300mm	No.	4.00	33986.00			135944.00
ii)	600mm	No.	2.00	137770.00			275540.00
	Pressure Loggers						
3	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	5.00	55000.00			275000
	(Vendor supply item)						
	Residual chlorine analyser						
4	Design, installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	1.00	191451.00			191451
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
5	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and tranportation to store/site, loading, unloading and stacking, all taxes , etc complete.						
	a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269	No.					

Bill of Quantities for Water Supply work for DMA 21 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	Kg					796272.84
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg					
	Battery Operated electromagnetic flow meter						
6	Providing, erecting, testing and commissioning of battery operated electromagnetic flow meter built in GSM (with Simcard charges for 36 months validity) of various diameters as per the following specifications including 36 months guarantee etc complete						
	MJP ELEC/MECH,Page No.86, item no. WM3						
i)	100 mm line size	No.	1	115122			115122
7	Pressure Reducing Valve						
	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						
	MJP ELEC/MECH,Page No.106, item no. SA8						
	200 mm dia	No.	1	195494			195494
	Mechanical Type Meters.						
8	A) Domestic Meters						
b)	Multijet meters						
	Providing, installing and giving satisfactory field testing of						
	Domestic water meter, horizontal inferential multijet type						
	with magnetic drive and dry dial suitable for ambient 50° C						
	Temperature duly sealed against tampering complete with						
	couplings at both ends and conforming to class B as per						
	ISO 4064 along with manufacturer's test certificate and						
	guarantee certificate, including cost of all materials and						
	labour etc with OIML , MID certification for Abroad and						
	FCRI for India including 36 months guarantee etc complete						

Bill of Quantities for Water Supply work for DMA 21 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	(MJP Elec/Mech CSR 2018-19, section 19, WM 1 b, Page no. 74)						
	15mm	No.	390	1755			684450
	20mm	No.	8	2137			17096
	25mm	No.	2	3619			7238
	40mm	No.	10	6741			67410
9	Ultrasonic Water Meter						
	A) AMR Domestic Meters						
	Providing, installing and giving satisfactory field testing of domestic battery operated AMR water meters with no measurement of air along with manufacturing test certificate and guarantee certificate with battery life of minimum 10 years with GSM / RF technology for communication to server with PC software including 36 months guarantee, etc. complete.						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 2m A, Page no. 77 and 78)						
	15mm	No	390	7984			3113760
	20mm	No	8	8708			69664
	25mm	No	2	10154			20308
	40mm	No	10	14493			144930
						Total of material section	8887853.64
LABOUR SECTION							
10	Excavation for Water supply work						
	D.I.Pipes -K9						
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling , etc. complete. Lift 0 to 1.50 m	Cum	783.89	145.00	7.25	152.25	119346.79

Bill of Quantities for Water Supply work for DMA 21 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP 18-19,Page No.47, item no. 1						
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	261.30	165.00	8.25	173.25	45269.47
	MJP 18-19,Page No.47, item no. 2						
iii	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	cum	783.89	185.00	9.25	194.25	152270.04
	MJP 18-19,Page No.47, item no. 3						
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 m to 1.5m	Cum	1167.82	454.00	22.70	476.70	556701.61
	MJP 18-19,Page No.47, item no. 5						
v	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. Lift 0 to 1.50 m	Cum	261.30	770.00	38.50	808.50	211257.53
	MJP 18-19,Page No.48, item no. 7						

Bill of Quantities for Water Supply work for DMA 21 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
11	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)						132712.14
	MJP 18-19,Page No.73, item no. 10						
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.73, item no. 10						
i)	Dia.100	Nos.					
ii)	Dia.150	Nos.					
iii)	Dia.200	Nos.					
iv)	Dia.250	Nos.					
v)	Dia.300	Nos.					
vi)	Dia.400	Nos.					
vii)	Dia.500	Nos.					
12	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr	618.00	64.00	3.20	67.20	41529.60
	MJP 18-19,Page No.50, item no. 14						
13	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	212.01	66.00	3.30	69.30	14692.29

Bill of Quantities for Water Supply work for DMA 21 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP 18-19,Page No.50, item no. 15						
14	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	308.81	66.00	3.30	69.30	21400.24
	MJP 18-19,Page No.51, item no. 16						
15	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	a) In PCC M-100	Cum	15.00	3751.00	187.55	3938.55	59078.25
	MJP 18-19,Page No.59, item no. 1						
16	Carriage of surplus excavated material over distance exceeding 50m including loading , unloading, spreading etc as directed.	Cum					453925.90
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						
17	Providing and casting in situ cement concrete of trap granite/quartzite/gneiss metal of approved quality for RCC work as per the detail drawings and designs or as directed by Engineer in charge including normal dewatering,centering,formwork,compaction,finishing the form surface with CM 1:3 of sufficient minimum thickness if special finish to be provided and curing etc., complete (by weigh batching or mix design for M-250 and M-300 only.Use of L&T,ACC,Ambuja,Birala Gold,Manikgad,Rajashree etc. cement is permitted.(excluding M.S. or Tor Steel)						
	MJP 18-19,Page No.59, item no. 2						
	For foundation						

Bill of Quantities for Water Supply work for DMA 21 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	In RCC M-250	Cum	150.00	5183.00	259.15	5442.15	816322.50
18	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire)	MT	16.50	48500.00	2425.00	50925.00	840262.50
	MJP 18-19,Page No.62, item no. 8						
19	Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.						
	MJP 18-19,Page No.84, item no. 2						
	D.I. K-9						
i)	Dia.100 mm	Rmt	1,950.30	58.00	2.90	60.90	118,773.27
ii)	Dia.150 mm	Rmt	881.10	79.00	3.95	82.95	73,087.25
iii)	Dia.300 mm	Rmt	36.30	152.00	7.60	159.60	5,793.48

Bill of Quantities for Water Supply work for DMA 21 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
20	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting,placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments,labour,operation charges,etc.required for testing.the rate under this item shall also include cost of retesting,if necessary and reinstatement to original position using water supplied by the contractor						
	MJP 18-19,Page No.93, item no. 12						
	D.I.-K-9						
i)	Dia.100 mm	Km	1.95	6,546.00	327.30	6,873.30	13,405.00
ii)	Dia.150 mm	Km	0.88	8,763.00	438.15	9,201.15	8,107.13
iii)	Dia.300 mm	Km	0.04	16,892.00	844.60	17,736.60	643.84
21	Lowering, laying and jointly in position following CID/F Reflex valves, Butterfly valves and Sluice valves including cost of all labour jointly material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)						
	MJP 18-19,Page No.240, item no. 4						
i)	150mm	No.	5.00	2950.00	147.50	3097.50	15487.50
ii)	200mm	No.	2.00	3069.00	153.45	3222.45	6444.90
iii)	250mm	No.	2.00	3999.00	199.95	4198.95	8397.90
iv)	300mm	No.	4.00	4148.00	207.40	4355.40	17421.60
v)	600mm	No.	2.00	8065.00	403.25	8468.25	16936.50

Bill of Quantities for Water Supply work for DMA 21 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
22	Providing and fixing CI road box including loading, unloading and carting to site of work including all necessary excavation in all types of starta and fixing in murum packing etc. complete.						
	MJP 18-19,Page No.388, item no. 5						
	a) 100mm x 225mm (20kg) for 100mm, 150mm, 200mm, 250mm	No.	9.00	1327.00	66.35	1393.35	12540.15
	Pressure Loggers						
23	Erection, installation, calliberation, commissioning of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	5.00	13197.00	659.85	13856.85	69284.25
	(Vendor supply item)						
24	Residual chlorine analyser						
	Erection ,installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	1.00	13197.00	659.85	13856.85	13856.85

Bill of Quantities for Water Supply work for DMA 21 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Overall Range : 0 - 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 - 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
25	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and ratchet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						
	(RA)						
	15mm	Nos.	780.00	2022.00	101.10	2123.10	1656018.00
	20mm	Nos.	16.00	2247.00	112.35	2359.35	37749.60
	25mm	Nos.	4.00	2327.00	116.35	2443.35	9773.40
	40mm	Nos.	20.00	3642.00	182.10	3824.10	76482.00
26	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete.	Joint					200000.00
	work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.88, item no. 4						

Bill of Quantities for Water Supply work for DMA 21 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
27	Repairing damage water connection to house hold including labour, materials etc. complete. (Work shall be measured and paid for, per number on actual quantity.) (RA)	Nos.	50.00	406.00	20.30	426.30	21315.00
28	Repairing to the damaged drainage connection including labour, materials etc. complete. (RA) (Work shall be measured and paid for, per running meter basis on actual quantity.)						400000.00
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
	RA						
29	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows - (RA items)						
	1) Bulk flow meter (100mm) - 3M X 3.5M X 2M	Nos	1.00	247336.00	12366.80	259702.80	259702.80
	2) Pressure loggers = 0.9M X 0.9M X 1.5M	Nos	5.00	40140.00	2007.00	42147.00	210735.00
	3) Residual quality analyser - 0.9M X 0.9M X 1.5M	Nos	1.00	40140.00	2007.00	42147.00	42147.00
	4) Pressure reducing valve (for 250 and less) - 1.2M X 1.2M X 1.5M	Nos	1.00	53618.00	2680.90	56298.90	56298.90
30	Providing and constructing B.B. masonry valve Chamber with 15 CM thick 1:3:6 proportion PCC bedding ,excluding excavation,B.B. masonry in CM 1:5 proportion precast R.C.C frame and cover etc completed as directed by Engineer-In-Charge	Nos	820.00	4149.00	207.45	4356.45	3572289.00
	Note: wall thickness:0.23 M for depth of 1.2 M and 0.35 m for balance depth exceeding 1.2 M.						
	As above 60 x 45 cm internal size and depth upto 0.90 m with precast RCC slab cover.						

Bill of Quantities for Water Supply work for DMA 21 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP schedule, MJP 18-19,Page No.385, item no. 1						
Sub Total Labour							10387459.17
Sub total (Material + Labour)							19275312.81
Reinstatement of Road works							
	Bituminous Road						
i)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2). Spec. No. MORTH -305						
	From Material available from road way cutting (PWD SSR 2017-18 item 2.25)	Cum	576.44	112.00	5.60	117.60	67789.04
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	144.11	419.00	20.95	439.95	63400.91
ii)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	376.39	1606.00	80.30	1686.30	634699.08
iii)	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver. (RA based on-PWD SSR 2017-18 item 3.23)	Cum	627.31	1862.00	93.10	1955.10	1226452.56

Bill of Quantities for Water Supply work for DMA 21 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iv)	DENSE BITUMINOUS MACADAM --Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder,@ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-40 grade with stone dust(RA based on-PWD SSR 2017-18 item 3.45)	Cum	150.55	5558.00	277.90	5835.90	878619.55
v)	BITUMINOUS CONCRETE --Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler(RA based on-PWD SSR 2017-18 item 3.51)	Cum	100.37	6917.00	345.85	7262.85	728968.62
vi)	Prime Coat Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	2509.24	17	0.85	17.85	44789.89
vii)	Tack Coat						

Bill of Quantities for Water Supply work for DMA 21 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg/sqm on the prepared bituminous/granular surface cleaned with mechanical broom. etc. complete.(Spec. No. MORTH-503)	Sqm	2509.24	8	0.40	8.40	21077.60
	Concrete Road						
viii)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting (PWD SSR 2017-18 item 2.25)	Cum	247.04	112.00	5.60	117.60	29052.44
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	61.76	419.00	20.95	439.95	27171.82
ix)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	161.31	1606.00	80.30	1686.30	272013.89
x)	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete.(RA based on-PWD SSR 2017-18 item 5.13)	Cum	107.54	2784.00	139.20	2923.20	314357.27

Bill of Quantities for Water Supply work for DMA 21 in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
xi)	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver,compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any(RA based on-MoRTH)	Cum	301.11	5735.00	286.75	6021.75	1813200.11
xii)	Providing road lane marking (PWD SSR 2017-18 item 6.23)	Sqm	1003.70	123.00	6.15	129.15	129627.21
Total cost of Road Reinstatement							6251219.99

Bill of Quantities for Water Supply work for DMA 23A in ABD area of Solapur Smart city							
Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
Material Section							
1	Providing and supplying at site of work DI Pipes (push on joints pressure pipes of DI of following class and Dia meters confirming to the indian Standard specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality)excluding GST levied by GOI and GOM in all respect including Thid party inspection charges of TPI Agency approved by the MJP including transit insurance,Railway frieght,unloading from railway wagon,loading in to the truck transportation to departmental store, unloading,stacking etc. completed as directed by engineer-in-charge(IS:1536:2001 for pipes and IS:158:1969 and 15:12820:1989 or latest edition/revision with amendments for rubber gaskets).(IS:8329:2000 latest version).						
	MJP 18-19,Page No.86, item no. 3						
	D.I. K-9						
i)	Dia.100 mm	Rmt	1,354	793.00			1073801.30
ii)	Dia.150 mm	Rmt	330	1151.00			379830.00
iii)	Dia. 200 mm	Rmt	197	1565.00			308148.50
2	Providing and supplying at site of work double flange sluice valve confirming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.						
	MJP 18-19,Page No.234, item no. (2a)						
	Sluice Valves PN - 1 (Without bypass arrangement)						

Bill of Quantities for Water Supply work for DMA 23A in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
i)	100mm	No.	12.00	5807.00			69684.00
ii)	150mm	No.	3.00	8709.00			26127.00
	For flow meter and PRV						
i)	200mm	No.	4.00	15786.00			63144.00
3	Providing and supplying kinetic double orifice type air valves confirming to IS 14845 as per MJP's standard specifications having small orifice elastic ball resting on a gun metal orifice nipple, large orifice vulcanite ball seating on moulded seat ring, with built-in kinetic features, isolating sluice valve mounted in horizontal position and operated by wheel gearing, inlet face and drilled, including insurance, third party inspection charges, loading, unloading, transportation upto departmental stores, excluding GST levied by GOI and GOM in all respect etc. complete.						
	MJP 18-19,Page No.246, item no. 9						
	b) Kinetic Air valve flanged, Type PN - 1.6						
	200mm	No.	1.00	30341.00			30341.00
	Pressure Loggers						
4	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	3.00	55000.00			165000
	(Vendor supply item)						
	Residual chlorine analyser						

Bill of Quantities for Water Supply work for DMA 23A in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
5	Design, installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	2.00	191451.00			382902
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
6	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and tranportation to store/site, loading, unloading and stacking, all taxes , etc complete.						
	a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269	No.					528533.94
	b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	Kg					
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg					
	Bettyery Operated electromagnetic flow meter						

Bill of Quantities for Water Supply work for DMA 23A in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
7	Providing, erecting, testing and commissioning of battery operated electromagnetic flow meter built in GSM (with Simcard charges for 36 months validity) of various diameters as per the following specifications including 36 months guarantee etc complete						
	MJP ELEC/MECH,Page No.93, item no. WM4						
i)	100 mm line size	No.	1	115122			115122
8	Pressure Reducing Valve						
	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						
	MJP ELEC/MECH,Page No.106, item no. SA8						
	200 mm dia	No.	1	195494			195494
	Mechanical Type Meters.						
9	A) Domestic Meters						
b)	Multijet meters						
	Providing, installing and giving satisfactory field testing of						
	Domestic water meter, horizontal inferential multijet type						
	with magnetic drive and dry dial suitable for ambient 50° C						
	Temperature duly sealed against tampering complete with						
	couplings at both ends and conforming to class B as per						
	ISO 4064 along with manufacturer's test certificate and						
	guarantee certificate, including cost of all materials and						
	labour etc with OIML , MID certification for Abroad and						
	FCRI for India including 36 months guarantee etc complete						

Bill of Quantities for Water Supply work for DMA 23A in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	(MJP Elec/Mech CSR 2018-19, section 19, WM 1 b, Page no. 74)						
	15mm	No.	174	1755			305370
	20mm	No.	4	2137			8548
	25mm	No.	2	3619			7238
	40mm	No.	10	6741			67410
10	Ultrasonic Water Meter						
A)	AMR Domestic Meters						
	Providing, installing and giving satisfactory field testing of domestic battery operated AMR water meters with no measurement of air along with manufacturing test certificate and guarantee certificate with battery life of minimum 10 years with GSM / RF technology for communication to server with PC software including 36 months guarantee, etc. complete.						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 2m A, Page no. 77 and 78)						
	15mm		174	7984			1389216
	20mm		4	8708			34832
	25mm		2	10154			20308
	40mm		10	14493			144930
Total for material section							5315979.74

Bill of Quantities for Water Supply work for DMA 23A in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
LABOUR SECTION							
11	Excavation for Water supply work						
	D.I.Pipes -K9						
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling , etc. complete. Lift 0 to 1.50 m	Cum	515.77	145.00	7.25	152.25	78526.26
	MJP 18-19,Page No.47, item no. 1						
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	171.92	165.00	8.25	173.25	29785.82
	MJP 18-19,Page No.47, item no. 2						
iii	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	cum	515.77	185.00	9.25	194.25	100188.68
	MJP 18-19,Page No.47, item no. 3						

Bill of Quantities for Water Supply work for DMA 23A in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	767.07	454.00	22.70	476.70	365663.65
MJP 18-19,Page No.47, item no. 5							
v	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. Lift 0 to 1.50 m	Cum	171.92	770.00	38.50	808.50	139000.51
MJP 18-19,Page No.48, item no. 7							
12	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)						88088.99
MJP 18-19,Page No.73, item no. 10							

Bill of Quantities for Water Supply work for DMA 23A in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.73, item no. 10						
i)	Dia.100	Nos.					
ii)	Dia.150	Nos.					
iii)	Dia.200	Nos.					
iv)	Dia.250	Nos.					
v)	Dia.300	Nos.					
vi)	Dia.400	Nos.					
vii)	Dia.500	Nos.					
13	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr	618.00	64.00	3.20	67.20	41529.60
	MJP 18-19,Page No.50, item no. 14						
14	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	140.78	66.00	3.30	69.30	9756.05
	MJP 18-19,Page No.50, item no. 15						
15	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	202.93	66.00	3.30	69.30	14063.29
	MJP 18-19,Page No.51, item no. 16						

Bill of Quantities for Water Supply work for DMA 23A in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
16	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	a) In PCC M-100	Cum	15.00	3751.00	187.55	3938.55	59078.25
	MJP 18-19,Page No.59, item no. 1						
17	Carriage of surplus excavated material over distance exceeding 50m includig loading , unloading, spreading etc as directed.	Cum					298583.44
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						
18	Providing and casting in situ cement concrete of trap granite/quartzite/gneiss metal of approved quality for RCC work as per the detail drawings and designs or as directed by Engineer in charge including normal dewatering,centering,formwork,compaction,finishing the form surface with CM 1:3 of sufficient minimum thickness if special finish to be provided and curing etc., complete (by weigh batching or mix design for M-250 and M-300 only.Use of L&T,ACC,Ambuja,Birala Gold,Manikgad,Rajashree etc. cement is permitted.(excluding M.S. or Tor Steel)						
	MJP 18-19,Page No.59, item no. 2						
	For foundation						
	In RCC M-250	Cum	150.00	5183.00	259.15	5442.15	816322.50

Bill of Quantities for Water Supply work for DMA 23A in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
19	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire)	MT	16.50	48500.00	2425.00	50925.00	840262.50
MJP 18-19,Page No.62, item no. 8							
20	Lowering laying and jointing with SBR rubber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.						
MJP 18-19,Page No.84, item no. 2							
D.I. K-9							
i)	Dia.100 mm	Rmt	1,354.10	58.00	2.90	60.90	82,464.69
ii)	Dia.150 mm	Rmt	330.00	79.00	3.95	82.95	27,373.50
iii)	Dia. 200 mm	Rmt	196.90	104.00	5.20	109.20	21,501.48
21	Lowering, laying and fixing in proper alignment and position all types of C.I. air valve s as directed by engineer-in charge including cost of conveyance from stores to site of work, cost of all material and giving satisfactory hydraulic testing, etc. complete. (for all class valves)						

Bill of Quantities for Water Supply work for DMA 23A in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	MJP 18-19,Page No.247, item no. 10						
	b) Air valve double ball (PN-1 and PN-1.6)						
	200mm	No	1.00	662.00	33.10	695.10	695.10
22	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting,placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments,labour,operation charges,etc.required for testing.the rate under this item shall also include cost of retesting,if necessary and reinstatement to original position using water supplied by the contractor						
	MJP 18-19,Page No.93, item no. 12						
	D.I.-K-9						
i)	Dia.100 mm	Km	1.35	6,546.00	327.30	6,873.30	9,307.14
ii)	Dia.150 mm	Km	0.33	8,763.00	438.15	9,201.15	3,036.38
iii)	Dia. 200 mm	Km	0.20	11,508.00	575.40	12,083.40	2,379.22
23	Lowering, laying and jointly in position following CID/F Reflex valves, Butterfly valves and Sluice valves including cost of all labour jointly material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)						
	MJP 18-19,Page No.240, item no. 4						
i)	100mm	No.	12.00	1877.00	93.85	1970.85	23650.20
iii)	150mm	No.	3.00	2950.00	147.50	3097.50	9292.50
iv)	200mm	No.	4.00	3069.00	153.45	3222.45	12889.80

Bill of Quantities for Water Supply work for DMA 23A in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
24	Providing and fixing CI road box including loading, unloading and carting to site of work including all necessary excavation in all types of starta and fixing in murum packing etc. complete.						
	MJP 18-19,Page No.388, item no. 5						
	a) 100mm x 225mm (20kg) for 100mm, 150mm, 200mm, 250mm	No.	15.00	1327.00	66.35	1393.35	20900.25
	Pressure Loggers						
25	Erection, installation, callibration, commissioning of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	3.00	13197.00	659.85	13856.85	41570.55
	(Vendor supply item)						
26	Residual chlorine analyser						
	Erection ,installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	2.00	13197.00	659.85	13856.85	27713.70

Bill of Quantities for Water Supply work for DMA 23A in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
27	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and ratchet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						
	(RA)						
	15mm	Nos.	348.00	2022.00	101.10	2123.10	738838.80
	20mm	Nos.	8.00	2247.00	112.35	2359.35	18874.80
	25mm	Nos.	4.00	2327.00	116.35	2443.35	9773.40
	40mm	Nos.	20.00	3642.00	182.10	3824.10	76482.00

Bill of Quantities for Water Supply work for DMA 23A in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
28	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete. Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19, Page No.88, item no. 4	Joint					200000.00
29	Repairing damage water connection to house hold including labour, materials etc. complete. (Work shall be measured and paid for, per number on actual quantity.) (RA)	Nos.	50.00	406.00	20.30	426.30	21315.00
30	Repairing to the damaged drainage connection including labour, materials etc. complete. (RA) (Work shall be measured and paid for, per running meter basis on actual quantity.)						400000.00
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
	RA						
31	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows - (RA items)						
	1) Bulk flow meter (100mm) - 3M X 3.5M X 2M	Nos	1.00	247336.00	12366.80	259702.80	259702.80
	2) Pressure loggers = 0.9M X 0.9M X 1.5M	Nos	3.00	40140.00	2007.00	42147.00	126441.00
	3) Residual quality analyser - 0.9M X 0.9M X 1.5M	Nos	2.00	40140.00	2007.00	42147.00	84294.00
	4) Air valve - 1.2M X 1.2M X 1.5M	Nos	1.00	53618.00	2680.90	56298.90	56298.90

Bill of Quantities for Water Supply work for DMA 23A in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	5) Pressure reducing valve (for 250 and less) - 1.2M X 1.2M X 1.5M	Nos	1.00	53618.00	2680.90	56298.90	56298.90
32	Providing and constructing B.B. masonry valve Chamber with 15 CM thick 1:3:6 proportion PCC bedding ,excluding excavation,B.B. masonry in CM 1:5 proportion precast R.C.C frame and cover etc completed as directed by Engineer-In-Charge	Nos	380	4149	207.45	4356.45	1655451.00
	Note: wall thickness:0.23 M for depth of 1.2 M and 0.35 m for balance depth exceeding 1.2 M.						
	As above 60 x 45 cm internal size and depth upto 0.90 m with precast RCC slab cover.						
	MJP schedule, MJP 18-19,Page No.385, item no. 1						
Sub Total Labour							6867394.66
Sub total (Material + Labour)							12183374.40
Reinstatement of Road works							
	Bituminous Road						
i)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2). Spec. No. MORTH -305						
	From Material available from road way cutting (PWD SSR 2017-18 item 2.25)	Cum	378.81	112.00	5.60	117.60	44547.96
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	94.70	419.00	20.95	439.95	41664.28

Bill of Quantities for Water Supply work for DMA 23A in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
ii)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	246.88	1606.00	80.30	1686.30	416315.85
iii)	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver. (RA based on-PWD SSR 2017-18 item 3.23)	Cum	411.47	1862.00	93.10	1955.10	804462.55
iv)	DENSE BITUMINOUS MACADAM :--Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder, @ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-40 grade with stone dust (RA based on-PWD SSR 2017-18 item 3.45)	Cum	98.75	5558.00	277.90	5835.90	576309.71

Bill of Quantities for Water Supply work for DMA 23A in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
v)	BITUMINOUS CONCRETE --Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler(RA based on-PWD SSR 2017-18 item 3.51)	Cum	65.84	6917.00	345.85	7262.85	478149.73
vi)	Prime Coat						
	Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	1,646	17	0.85	17.85	29378.87
vii)	Tack Coat						
	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg/sqm on the prepared bituminous/granular surface cleaned with mechanical broom. etc. complete.(Spec. No. MORTH-503)	Sqm	1,646	8	0.40	8.40	13825.35

Bill of Quantities for Water Supply work for DMA 23A in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
	Concrete Road						
viii)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting (PWD SSR 2017-18 item 2.25)	Cum	162.35	112.00	5.60	117.60	19091.98
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	40.59	419.00	20.95	439.95	17856.12
ix)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	105.81	1606.00	80.30	1686.30	178421.08
x)	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete.(RA based on-PWD SSR 2017-18 item 5.13)	Cum	70.54	2784.00	139.20	2923.20	206195.22

Bill of Quantities for Water Supply work for DMA 23A in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items.	Rate	Amount
xi)	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver,compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any(RA based on-MoRTH)	Cum	197.51	5735.00	286.75	6021.75	1189325.73
xii)	Providing road lane marking (PWD SSR 2017-18 item 6.23)	Sqm	658.35	123.00	6.15	129.15	85025.90
Total cost of Road Reinstatement							4100570.35

Bill of Quantities for Water Supply work for DMA 23B in ABD area of Solapur Smart city

Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
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Material Section

1	Providing and supplying at site of work DI Pipes (push on joints pressure pipes of DI of following class and Dia meters confirming to the indian Standard specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality)excluding GST levied by GOI and GOM in all respect including Thid party inspection charges of TPI Agency approved by the MJP including transit insurance,Railway frieght,unloading from railway wagon,loading in to the truck transportation to departmental store, unloading,stacking etc. completed as directed by engineer-in-charge(IS:1536:2001 for pipes and IS:158:1969 and 15:12820:1989 or latest edition/revision with amendments for rubber gaskets).(IS:8329:2000 latest version).					
	MJP 18-19,Page No.86, item no. 3					
	D.I. K-9					
i)	Dia.100 mm	Rmt	8,186	793.00		6491260.10
ii)	Dia.150 mm	Rmt	822	1151.00		945776.70
iii)	Dia. 200 mm	Rmt	125	1565.00		196251.00
iv)	Dia. 250 mm	Rmt	773	2081.00		1609237.30
v)	Dia.300 mm	Rmt	310	2576.00		799075.20
vi)	Dia.350 mm	Rmt	42	3268.00		136602.40
			10,258			
2	Providing and supplying at site of work double flange sluice valve confirming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.					
	MJP 18-19,Page No.234, item no. (2a)					

Bill of Quantities for Water Supply work for DMA 23B in ABD area of Solapur Smart city							
	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
	Sluice Valves PN - 1 (Without bypass arrangement)						
i)	100mm	No.	67.00	5807.00			389069.00
ii)	150mm	No.	4.00	8709.00			34836.00
iii)	200mm	No.	1.00	15786.00			15786.00
iv)	500mm	No.	1.00	92991.00			92991.00
	For flow meter						
i)	150mm	No.	2.00	8709.00			17418.00
ii)	200mm	No.	2.00	15786.00			31572.00
iii)	600mm	No.	1.00	137770.00			137770.00
	Pressure Loggers						
3	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	4.00	55000.00			220000
	(Vendor supply item)						
	Residual chlorine analyser						
4	Design, installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at our water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	3.00	191451.00			574353
	Overall Range : 0 - 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Output : 4 - 20 mA						

Bill of Quantities for Water Supply work for DMA 23B in ABD area of Solapur Smart city

	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
5	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and transportation to store/site, loading, unloading and stacking, all taxes , etc complete. (Item will be measured and paid as actual as per following items of MJP SOR)						
	a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269	No.					3053460.81
	b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	Kg					
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg					
	Battery Operated electromagnetic flow meter						
6	Providing, erecting, testing and commissioning of battery operated electromagnetic flow meter built in GSM (with Simcard charges for 36 months validity) of various diameters as per the following specifications including 36 months guarantee etc complete.						
	MJP ELEC/MECH,Page No.93, item no. WM4						
i)	200 mm line size	No.	1.00	146893	7344.65	154237.65	154237.65
7	Pressure Reducing Valve						

Bill of Quantities for Water Supply work for DMA 23B in ABD area of Solapur Smart city							
	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						
	MJP ELEC/MECH 18-19,Page No.106, item SA8						
	600 mm dia	No.	1.00	#####	53688.70	1127462.70	1127462.70
	Mechanical Type Meters.						
8	A) Domestic Meters						
b)	Multijet meters						
	Providing, installing and giving satisfactory field testing of Domestic water meter, horizontal inferential multijet type with magnetic drive and dry dial suitable for ambient 50° C Temperature duly sealed against tampering complete with couplings at both ends and conforming to class B as per ISO 4064 along with manufacturer's test certificate and guarantee certificate, including cost of all materials and labour etc with OIML , MID certification for Abroad and FCRI for India including 36 months guarantee etc complete						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 1 b, Page no. 74)						
	15mm	No.	367	1755			644085
	20mm	No.	8	2137			16027.5
	25mm	No.	1	3619			1809.5
	40mm	No.	5	6741			33705
9	Ultrasonic Water Meter						
A)	AMR Domestic Meters						

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Bill of Quantities for Water Supply work for DMA 23B in ABD area of Solapur Smart city

Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
Providing, installing and giving satisfactory field testing of domestic battery operated AMR water meters with no measurement of air along with manufacturing test certificate and guarantee certificate with battery life of minimum 10 years with GSM / RF technology for communication to server with PC software including 36 months guarantee, etc. complete.						
(MJP Elec/Mech CSR 2018-19, section 19, WM 2m A, Page no. 77 and 78)						Sr.No.
15mm	No.	367	7984			2930128
20mm	No.	8	8708			65310
25mm	No.	1	10154			5077
40mm	No.	5	14493			72465
Sub Total Material						19795765.86

LABOUR SECTION

10	Excavation for Water supply work						
	D.I.Pipes -K9						
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling , etc. complete. Lift 0 to 1.50 m	Cum	2845.10	145.00	7.25	152.25	433167.08
	MJP 18-19,Page No.47, item no. 1						
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	948.37	165.00	8.25	173.25	164304.76
	MJP 18-19,Page No.47, item no. 2						

Bill of Quantities for Water Supply work for DMA 23B in ABD area of Solapur Smart city

	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
iii	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	2845.10	185.00	9.25	194.25	552661.45
	MJP 18-19,Page No.47, item no. 3						
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 m to 1.5m	Cum	4204.81	454.00	22.70	476.70	2004432.21
	MJP 18-19,Page No.47, item no. 5						
v	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. Lift 1.50 to 3.0 m	Cum	948.37	791.00	39.55	830.55	787667.04
	MJP 18-19,Page No.48, item no. 7						

Bill of Quantities for Water Supply work for DMA 23B in ABD area of Solapur Smart city							
	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
13	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	384.36	66.00	3.30	69.30	26636.15
	MJP 18-19,Page No.50, item no. 15						
14	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	1529.96	66.00	3.30	69.30	106026.19
	MJP 18-19,Page No.51, item no. 16						
15	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	a) In PCC M-100	Cum	15.00	3751.00	187.55	3938.55	59078.25
	MJP 18-19,Page No.59, item no. 1						
16	Carriage of surplus excavated material over distance exceeding 50 m including loading and unloading.	Cum					62605.78
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						

Bill of Quantities for Water Supply work for DMA 23B in ABD area of Solapur Smart city

	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
17	Providing and casting in situ cement concrete of trap granite/quartzite/gneiss metal of approved quality for RCC work as per the detail drawings and designs or as directed by Engineer in charge including normal dewatering, centering, formwork, compaction, finishing the form surface with CM 1:3 of sufficient minimum thickness if special finish to be provided and curing etc., complete (by weigh batching or mix design for M-250 and M-300 only. Use of L&T, ACC, Ambuja, Biral Gold, Manikgad, Rajashree etc. cement is permitted. (excluding M.S. or Tor Steel)						
	MJP 18-19, Page No.59, item no. 2						
	For foundation						
	In RCC M-250	Cum	150.00	5183.00	259.15	5442.15	816322.50
18	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, padies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire)	MT	16.50	48500.00	2425.00	50925.00	840262.50
	MJP 18-19, Page No.62, item no. 8						

Bill of Quantities for Water Supply work for DMA 23B in ABD area of Solapur Smart city							
	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
19	Lowering laying and jointing with SBR ruber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.						
	MJP 18-19,Page No.84, item no. 2						
	D.I. K-9						
i)	Dia.100 mm	Rmt	8,185.70	58.00	2.90	60.90	498,509.13
ii)	Dia.150 mm	Rmt	821.70	79.00	3.95	82.95	68,160.02
iii)	Dia. 200 mm	Rmt	125.40	104.00	5.20	109.20	13,693.68
iv)	Dia. 250 mm	Rmt	773.30	135.00	6.75	141.75	109,615.28
v)	Dia.300 mm	Rmt	310.20	152.00	7.60	159.60	49,507.92
vi)	Dia.350 mm	Rmt	41.80	186.00	9.30	195.30	8,163.54
20	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting,placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments,labour,operation charges,etc.required for testing.the rate under this item shall also include cost of retesting,if necessary and reinstatement to original position using water supplied by the contractor						
	MJP 18-19,Page No.93, item no. 12						
	D.I.-K-9						
i)	Dia.100 mm	Km	8.19	6,546.00	327.30	6,873.30	56,262.77
ii)	Dia.150 mm	Km	0.82	8,763.00	438.15	9,201.15	7,560.58

Bill of Quantities for Water Supply work for DMA 23B in ABD area of Solapur Smart city

	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
iii)	Dia. 200 mm	Km	0.13	11,508.00	575.40	12,083.40	1,515.26
iv)	Dia. 250 mm	Km	0.77	14,992.00	749.60	15,741.60	12,172.98
v)	Dia.300 mm	Km	0.31	16,892.00	844.60	17,736.60	5,501.89
vi)	Dia.350 mm	Km	0.04	20,587.00	1,029.35	21,616.35	903.56
21	Lowering, laying and jointly in position following CID/F Reflex valves, Butterfly valves and Sluice valves including cost of all labour jointly material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)						
	MJP 18-19,Page No.240, item no. 4						
	100 mm	No.	67.00	1877.00	93.85	1970.85	132046.95
i)	150mm	No.	6.00	2950.00	147.5	3097.50	18585.00
ii)	200mm	No.	3.00	3069.00	153.45	3222.45	9667.35
	500mm	No.	1.00	7798.00	389.9	8187.90	8187.9
	600mm	No.	1.00	8065.00	403.25	8468.25	8468.25
22	Providing and fixing CI road box including loading, unloading and carting to site of work including all necessary excavation in all types of starta and fixing in murum packing etc. complete.						
	MJP 18-19,Page No.388, item no. 5						
	a) 100mm x 225mm (20kg) for 100mm, 150mm, 200mm, 250mm	No.	72.00	1327.00	66.35	1393.35	100321.20
	Pressure Loggers						

Bill of Quantities for Water Supply work for DMA 23B in ABD area of Solapur Smart city

	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
23	Erection, installation, callibration, commissioning of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	4.00	13197.00	659.85	13856.85	55427.40
	(Vendor supply item)						
24	Residual chlorine analyser						
	Erection ,installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	3.00	13197.00	659.85	13856.85	41570.55
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						

Bill of Quantities for Water Supply work for DMA 23B in ABD area of Solapur Smart city

	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
25	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and ratchet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						
	(RA)						
	15mm	Nos.	367.00	2022.00	101.10	2123.10	779177.70
	20mm	Nos.	7.50	2247.00	112.35	2359.35	17695.13
	25mm	Nos.	0.50	2327.00	116.35	2443.35	1221.68
	40mm	Nos.	5.00	3642.00	182.10	3824.10	19120.50
26	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete.	Joint					200000.00
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.88, item no. 4						
27	Repairing damage water connection to house hold including labour, materials etc. complete.	Nos.	50.00	406.00	20.30	426.30	21315.00
	(Work shall be measured and paid for, per number on actual quantity.) (RA)						

Bill of Quantities for Water Supply work for DMA 23B in ABD area of Solapur Smart city							
	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
28	Repairing to the damaged drainage connection including labour, materials etc. complete. (RA)						400000.00
	(Work shall be measured and paid for, per running meter basis on actual quantity.)						
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
	RA						
29	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows - (RA items)						
	1) Sluice valve						
	600mm (1.3M X 2M X 2.2M)	Nos	1.00	94039.00	4701.95	98740.95	98740.95
	2) Bulk flow meter (150mm) - 3M X 3.5M X 2M	Nos	1.00	247336.00	12366.80	259702.80	259702.80
	3) Pressure loggers = 0.9M X 0.9M X 1.5M	Nos	4.00	40140.00	2007.00	42147.00	168588.00
	4) Residual quality analyser - 0.9M X 0.9M X 1.5M	Nos	3.00	40140.00	2007.00	42147.00	126441.00
	5) Pressure reducing valve						
	600mm (1.3M X 2M X 2.2M)	Nos	1.00	94039.00	4701.95	98740.95	98740.95
30	Providing and constructing B.B. masonry valve Chamber with 15 CM thick 1:3:6 proportion PCC bedding ,excluding excavation,B.B. masonry in CM 1:5 proportion precast R.C.C frame and cover etc completed as directed by Engineer-In-Charge	Nos	760.00	4149.00	207.45	4356.45	3310902.00
	Note: wall thickness:0.23 M for depth of 1.2 M and 0.35 m for balance depth exceeding 1.2 M.						
	As above 60 x 45 cm internal size and depth upto 0.90 m with precast RCC slab cover.						

Bill of Quantities for Water Supply work for DMA 23B in ABD area of Solapur Smart city							
	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
	MJP schedule, MJP 18-19,Page No.385, item no. 1						
						Sub Total Labour	13111090.56
						Sub total (Material + Labour)	32906856.42
Reinstatement of Road works							
Bituminous Road							
i)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2). Spec. No. MORTH -305						
	From Material available from road way cutting (PWD SSR 2017-18 item 2.25)	Cum	2078.38	112.00	5.60	117.60	244417.30
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	519.59	419.00	20.95	439.95	228595.64
ii)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	1346.38	1606.00	80.30	1686.30	2270393.22
iii)	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver. (RA based on-PWD SSR 2017-18 item 3.23)	Cum	2243.96	1862.00	93.10	1955.10	4387164.97

Bill of Quantities for Water Supply work for DMA 23B in ABD area of Solapur Smart city

	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
iv)	DENSE BITUMINOUS MACADAM: --Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder, @ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-40 grade with stone dust(RA based on-PWD SSR 2017-18 item 3.45)	Cum	538.55	5558.00	277.90	5835.90	3142925.40
v)	BITUMINOUS CONCRETE: --Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler(RA based on-PWD SSR 2017-18 item 3.51)	Cum	359.03	6917.00	345.85	7262.85	2607606.46
vi)	Prime Coat						
	Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	8975.84	17	0.85	17.85	160218.70

Bill of Quantities for Water Supply work for DMA 23B in ABD area of Solapur Smart city							
	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
x)	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete.(RA based on-PWD SSR 2017-18 item 5.13)	Cum	384.68	2784.00	139.20	2923.20	1124492.92
xi)	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver,compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any(RA based on-MoRTH)	Cum	1077.10	5735.00	286.75	6021.75	6486029.94
xii)	Providing road lane marking (PWD SSR 2017-18 item 6.23)	Sqm	2865.00	123.00	6.15	129.15	370014.10
Sub Total Road instatement							22273001.19

Bill of Quantities for Water Supply work for DMA 23C in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
Material Section							
1	Providing and supplying at site of work DI Pipes (push on joints pressure pipes of DI of following class and Dia meters confirming to the indian Standard specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality)excluding GST levied by GOI and GOM in all respect including Thid party inspection charges of TPI Agency approved by the MJP including transit insurance,Railway frieght,unloading from railway wagon,loading in to the truck transportation to departmental store, unloading,stacking etc. completed as directed by engineer-in-charge(IS:1536:2001 for pipes and IS:158:1969 and 15:12820:1989 or latest edition/revision with amendments for rubber gaskets).(IS:8329:2000 latest version).						
	MJP 18-19,Page No.86, item no. 3						
	D.I. K-9						
i)	Dia.100 mm	Rmt	3,411	793.00			2705002.30
ii)	Dia.150 mm	Rmt	967	1151.00			1112901.90
iii)	Dia. 200 mm	Rmt	388	1565.00			606437.50
iv)	Dia. 250 mm	Rmt	193	2081.00			400592.50
v)	Dia.350 mm	Rmt	13	3268.00			43137.60
2	Providing and supplying at site of work double flange sluice valve confirming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.						
	MJP 18-19,Page No.234, item no. (2a)						
	Sluice Valves PN - 1 (Without bypass arrangement)						
i)	100mm	No.	28.00	5807.00			162596.00

Bill of Quantities for Water Supply work for DMA 23C in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
ii)	150mm	No.	6.00	8709.00			52254.00
iii)	200mm	No.	2.00	15786.00			31572.00
iv)	250mm	No.	2.00	24407.00			48814.00
v)	300mm	No.	1.00	30986.00			30986.00
	For flow meter and PRV						
i)	150mm	No.	4.00	8709.00			34836.00
ii)	450mm	No.	2.00	64520.00			129040.00
iii)	700mm	No.	2.00	256083.00			512166.00
	Pressure Loggers						
3	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	7.00	55000.00			385000
	(Vendor supply item)						
	Residual chlorine analyser						
4	Design, installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	1.00	191451.00			191451
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						

Bill of Quantities for Water Supply work for DMA 23C in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
5	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and transportation to store/site, loading, unloading and stacking, all taxes , etc complete. (Item will be measured and paid as actual as per following items of MJP SOR)						
	a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269	No.					1460421.54
	b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	Kg					
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg					
	Battery Operated electromagnetic flow meter						
6	Providing, erecting, testing and commissioning of battery operated electromagnetic flow meter built in GSM (with Simcard charges for 36 months validity) of various diameters as per the following specifications including 36 months guarantee etc complete.						
	MJP ELEC/MECH 18-19,Page No.86, item WM3						
i)	200 mm line size	No.	2.00	146893	7344.65	154237.65	308475.30
7	Pressure Reducing Valve						
	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						

Bill of Quantities for Water Supply work for DMA 23C in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
	MJP ELEC/MECH 18-19,Page No.106, item SA8						
	200 mm dia	No.	2.00	206052.00	10302.60	216354.60	432709.20
	Mechanical Type Meters.						
8	A) Domestic Meters						
b)	Multijet meters						
	Providing, installing and giving satisfactory field testing of Domestic water meter, horizontal inferential multijet type with magnetic drive and dry dial suitable for ambient 50° C Temperature duly sealed against tampering complete with couplings at both ends and conforming to class B as per ISO 4064 along with manufacturer's test certificate and guarantee certificate, including cost of all materials and labour etc with OIML , MID certification for Abroad and FCRI for India including 36 months guarantee etc complete						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 1 b, Page no. 74)						
	15mm	No.	318	1755			558090
	20mm	No.	7	2137			13890.5
	25mm	No.	1	3619			1809.5
	40mm	No.	5	6741			33705
9	Ultrasonic Water Meter						
A)	AMR Domestic Meters						
	Providing, installing and giving satisfactory field testing of domestic battery operated AMR water meters with no measurement of air along with manufacturing test certificate and guarantee certificate with battery life of minimum 10 years with GSM / RF technology for communication to server with PC software including 36 months guarantee, etc. complete.						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 2m A, Page no. 77 and 78)						

Bill of Quantities for Water Supply work for DMA 23C in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete.	Cum	2037.29	454.00	22.70	476.70	971173.76
	MJP 18-19,Page No.47, item no. 5						
iv	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. Lift 0 to 1.50 m	Cum	459.38	770.00	38.50	808.50	371410.75
	MJP 18-19,Page No.48, item no. 7						
11	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)						243403.59
	MJP 18-19,Page No.73, item no. 10						
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.73, item no. 10						
i)	Dia.100	Nos.					
ii)	Dia.150	Nos.					
iii)	Dia.200	Nos.					
iv)	Dia.250	Nos.					

Bill of Quantities for Water Supply work for DMA 23C in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
v)	Dia.300	Nos.					
vi)	Dia.400	Nos.					
vii)	Dia.500	Nos.					
12	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr	618.00	64.00	3.20	67.20	41529.60
	MJP 18-19,Page No.50, item no. 14						
13	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	371.18	66.00	3.30	69.30	25722.77
	MJP 18-19,Page No.50, item no. 15						
14	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	556.80	66.00	3.30	69.30	38585.93
	MJP 18-19,Page No.51, item no. 16						
15	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	a) In PCC M-100	Cum	15.00	3751.00	187.55	3938.55	59078.25
	MJP 18-19,Page No.59, item no. 1						

Bill of Quantities for Water Supply work for DMA 23C in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
16	Carriage of surplus excavated material over distance exceeding 50m includig loading , unloading, spreading etc as directed.	Cum					797110.24
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						
17	Providing and casting in situ cement concrete of trap granite/quartzite/gneiss metal of approved quality for RCC work as per the detail drawings and designs or as directed by Engineer in charge including normal dewatering,centering,formwork,compaction,finishing the form surface with CM 1:3 of sufficient minimum thickness if special finish to be provided and curing etc., complete (by weigh batching or mix design for M-250 and M-300 only.Use of L&T,ACC,Ambuja,Birala Gold,Manikgad,Rajashree etc. cement is permitted.(excluding M.S. or Tor Steel)						
	MJP 18-19,Page No.59, item no. 2						
	For foundation						
	In RCC M-250	Cum	150.00	5183.00	259.15	5442.15	816322.50
18	Providing and fixing in position steel bar reinforcemement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire	MT	16.50	48500.00	2425.00	50925.00	840262.50
	MJP 18-19,Page No.62, item no. 8						

Bill of Quantities for Water Supply work for DMA 23C in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
24	Residual chlorine analyser						
	Erection ,installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	1.00	13197.00	659.85	13856.85	13856.85
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
25	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and ratchet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						
	(RA)						
	15mm	Nos.	318.00	2022.00	101.10	2123.10	675145.80

Bill of Quantities for Water Supply work for DMA 23C in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
	20mm	Nos.	7	2247.00	112.35	2359.35	15335.78
	25mm	Nos.	1	2327.00	116.35	2443.35	1221.68
	40mm	Nos.	5	3642.00	182.10	3824.10	19120.50
26	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete.	Joint					200000.00
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.88, item no. 4						
27	Repairing damage water connection to house hold including labour, materials etc. complete.	Nos.	50.00	406.00	20.30	426.30	21315.00
	(Work shall be measured and paid for, per number on actual quantity.) (RA)						
28	Repairing to the damaged drainage connection including labour, materials etc. complete. (RA)						400000.00
	(Work shall be measured and paid for, per running meter basis on actual quantity.)						
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
	RA						
29	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows - (RA items)						
	1) Sluice valve (250mm and less) - Road box	Nos					
	300mm (1.2M X 1.3M X 1.8M)	Nos	1.00	62315.00	3115.75	65430.75	65430.75
	2) Bulk flow meter (150mm) - 3M X 3.5M X 2M	Nos	2.00	247336.00	12366.80	259702.80	519405.60

Bill of Quantities for Water Supply work for DMA 23C in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
ii)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	652.47	1606.00	80.30	1686.30	1100260.16
iii)	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver. (RA based on-PWD SSR 2017-18 item 3.23)	Cum	1087.45	1862.00	93.10	1955.10	2126073.50
iv)	DENSE BITUMINOUS MACADAM --Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder, @ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-40 grade with stone dust (RA based on-PWD SSR 2017-18 item 3.45)	Cum	260.99	5558.00	277.90	5835.90	1523099.87

Bill of Quantities for Water Supply work for DMA 23C in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than Supply items.	Rate	Amount
xi)	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver,compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any(RA based on-MoRTH)	Cum	521.98	5735.00	286.75	6021.75	3143208.98
xii)	Providing road lane marking (PWD SSR 2017-18 item 6.23)	Sqm	1739.92	123.00	6.15	129.15	224710.67
Sub Total Road instatement							10839341.21

Bill of Quantities for Water Supply work for DMA 24 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items	Rate	Amount
Material Section							
1	Providing and supplying at site of work DI Pipes (push on joints pressure pipes of DI of following class and Dia meters confirming to the indian Standard specification inclusive cost of jointing materials (Rubber gasket of EPDM Quality)excluding GST levied by GOI and GOM in all respect including Thid party inspection charges of TPI Agency approved by the MJP including transit insurance,Railway frieght,unloading from railway wagon,loading in to the truck transportation to departmental store, unloading,stacking etc. completed as directed by engineer-in-charge(IS:1536:2001 for pipes and IS:158:1969 and 15:12820:1989 or latest edition/revision with amendments for rubber gaskets).(IS:8329:2000 latest version).						
	MJP 18-19,Page No.86, item no. 3						
	D.I. K-9						
i)	Dia.100 mm	Rmt	450	793.00			356770.70
ii)	Dia.150 mm	Rmt	396	1151.00			455335.60
iii)	Dia.300 mm	Rmt	363	2576.00			935088.00
2	Providing and supplying at site of work double flange sluice valve confirming for IS-14846 including worn gear arrangements as per test pressure, stainless steel spindle, caps, including inspection charges, transportation up to store, transit insurance, loading unloading, stacking excluding GST levied by GOI & GOM in all respect etc. complete.						
	MJP 18-19,Page No.234, item no. (2a)						
	Sluice Valves PN - 1 (Without bypass arrangement)						
i)	100mm	No.	15.00	5807.00			87105.00
ii)	150mm	No.	2.00	8709.00			17418.00
iii)	250mm	No.	1.00	24407.00			24407.00

Bill of Quantities for Water Supply work for DMA 24 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items	Rate	Amount
	For flow meter and PRV						
i)	300mm	No.	4.00	30986.00			123944.00
	Pressure Loggers						
3	Providing, supplying, of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender. (Vendor supply item)	No.	4.00	55000.00			220000
	Residual chlorine analyser						
4	Design, installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	1.00	191451.00			191451
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						

Bill of Quantities for Water Supply work for DMA 24 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items	Rate	Amount
5	Providing and supplying at site of work C.I./D.I./M.S. specials suitable for above said pipes including cost of all labour and materials and transportation to store/site, loading, unloading and stacking, all taxes , etc complete.						
	a) CI mechanical joints / fittings - as per MJP, Item no. 1-9, page no. 260-269	No.					524158.29
	b) DI specials and fittings - as per MJP, Item no. 10 a) and 10 b) , page no.92	Kg					
	c) MS specials of required thickness as per Item no. 7 a) to 7 f), page no.89, 90	Kg					
	Battery Operated electromagnetic flow meter						
6	Providing, erecting, testing and commissioning of battery operated electromagnetic flow meter built in GSM (with Simcard charges for 36 months validity) of various diameters as per the following specifications including 36 months guarantee etc complete.						
	MJP ELEC/MECH,Page No.93, item no. WM4						
i)	100 mm line size	No.	1	115122			115122
7	Pressure Reducing Valve						
	Designing, supplying installing commissioning & testing of Flow Control valve / Pressure reducing valve / Altitude valve for inlet / outlet with flow controlling, pressure controlling & monitoring on web and to the pipeline feeding to ESR/ MBR / GSR with cable, PLC etc. complete.						
	MJP ELEC/MECH,Page No.106, item no. SA8						
	200 mm dia	No.	1	195494			195494
	Mechanical Type Meters.						
8	A) Domestic Meters						
b)	Multijet meters						
	Providing, installing and giving satisfactory field testing of						
	Domestic water meter, horizontal inferential multijet type						
	with magnetic drive and dry dial suitable for ambient 50° C						

Bill of Quantities for Water Supply work for DMA 24 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items	Rate	Amount
	Temperature duly sealed against tampering complete with						
	couplings at both ends and conforming to class B as per						
	ISO 4064 along with manufacturer's test certificate and						
	guarantee certificate, including cost of all materials and						
	labour etc with OIML , MID certification for Abroad and						
	FCRI for India including 36 months guarantee etc complete						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 1 b, Page no. 74)						
	15mm	No.	294	1755			515970
	20mm	No.	6	2137			12822
	40mm	No.	10	6741			67410
9	Ultrasonic Water Meter						
A)	AMR Domestic Meters						
	Providing, installing and giving satisfactory field testing of domestic battery operated AMR water meters with no measurement of air along with manufacturing test certificate and guarantee certificate with battery life of minimum 10 years with GSM / RF technology for communication to server with PC software including 36 months guarantee, etc. complete.						
	(MJP Elec/Mech CSR 2018-19, section 19, WM 2m A, Page no. 77 and 78)						
	15mm		294	7984			2347296
	20mm		6	8708			52248
	40mm		10	14493			144930
						Sub Total Material	6386969.59
LABOUR SECTION							
10	Excavation for Water supply work						
	D.I.Pipes -K9						

Bill of Quantities for Water Supply work for DMA 24 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items	Rate	Amount
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling , etc. complete. Lift upto 1.50 m	Cum	375.93	145.00	7.25	152.25	57234.77
	MJP 18-19,Page No.47, item no. 1						
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	125.31	165.00	8.25	173.25	21709.74
	MJP 18-19,Page No.47, item no. 2						
iii	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	375.93	185.00	9.25	194.25	73023.67
	MJP 18-19,Page No.47, item no. 3						
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 50m lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.50 m	Cum	522.53	454.00	22.70	476.70	249090.05
	MJP 18-19,Page No.47, item no. 5						

Bill of Quantities for Water Supply work for DMA 24 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items	Rate	Amount
V	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means.Lift 0 to 1.50 m	Cum	125.31	770.00	38.50	808.50	101312.12
	MJP 18-19,Page No.48, item no. 7						
11	Making cross connection to existing distribution main of any type including excavation, breaking and removing existing pipes in their position, refilling, closing the water supply in that area, dewatering and restarting the water supply, etc. complete as directed by Engineer-in-charge for following diameters of existing pipeline, irrespective of diameter of branch line. (The number of joints involved will be paid separately depending upon the nature of joints and required pipes, valves and specials will be supplied free of cost at stores.)						87359.72
	MJP 18-19,Page No.73, item no. 10						
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.73, item no. 10						
i)	Dia.100	Nos.					
ii)	Dia.150	Nos.					
iii)	Dia.200	Nos.					
iv)	Dia.250	Nos.					
v)	Dia.300	Nos.					
vi)	Dia.400	Nos.					
vii)	Dia.500	Nos.					

Bill of Quantities for Water Supply work for DMA 24 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items	Rate	Amount
12	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr	618.00	64.00	3.20	67.20	41529.60
	MJP 18-19,Page No.50, item no. 14						
13	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	137.84	66.00	3.30	69.30	9552.31
	MJP 18-19,Page No.50, item no. 15						
14	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	140.75	66.00	3.30	69.30	9753.94
	MJP 18-19,Page No.51, item no. 16						
15	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	a) In PCC M-100	Cum	15.00	3751.00	187.55	3938.55	59078.25
	MJP 18-19,Page No.59, item no. 1						
16	Carriage of surplus excavated material over distance exceeding 50m including loading , unloading, spreading etc as directed.	Cum					215832.02
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						

Bill of Quantities for Water Supply work for DMA 24 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items	Rate	Amount
17	Providing and casting in situ cement concrete of trap granite/quartzite/gneiss metal of approved quality for RCC work as per the detail drawings and designs or as directed by Engineer in charge including normal dewatering,centering,formwork,compaction,finishing the form surface with CM 1:3 of sufficient minimum thickness if special finish to be provided and curing etc., complete (by weigh batching or mix design for M-250 and M-300 only.Use of L&T,ACC,Ambuja,Birala Gold,Manikgad,Rajashree etc. cement is permitted.(excluding M.S. or Tor Steel)						
	MJP 18-19,Page No.64, item no. 10						
	For foundation						
	In RCC M-250	Cum	150.00	5183.00	259.15	5442.15	816322.50
18	Providing and fixing in position steel bar reinforcement of various diameters for RCC piles, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chhajjas, lintels, pardies, copings, fins, arches, etc. as per detailed designs, drawings and schedules; including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required, etc. complete (including cost of binding wire	MT	16.50	48500.00	2425.00	50925.00	840262.50
	MJP 18-19,Page No.59, item no. 2						

Bill of Quantities for Water Supply work for DMA 24 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items	Rate	Amount
19	Lowering laying and jointing with SBR rubber gaskets C.I. S/S pipes of various classes with CI / MS specials of following diameter in proper position, grade and alignment as directed by Engineer-in-charge including conveyance of material from stores to site of work, including cost of jointing materials and rubber rings labour, giving hydraulic testing etc. complete.						
	MJP 18-19,Page No.84, item no. 2						
	D.I. K-9						
i)	Dia.100 mm	Rmt	449.90	58.00	2.90	60.90	27,398.91
ii)	Dia.150 mm	Rmt	395.60	79.00	3.95	82.95	32,815.02
iii)	Dia.300 mm	Rmt	363.00	152.00	7.60	159.60	57,934.80
20	Hydraulic testing of C.I./D.I. pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting,placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments,labour,operation charges,etc.required for testing.the rate under this item shall also include cost of retesting,if necessary and reinstatement to original position using water supplied by the contractor						
	MJP 18-19,Page No.93, item no. 12						
	D.I.-K-9						
i)	Dia.100 mm	Km	0.45	6,546.00	327.30	6,873.30	3,092.30
ii)	Dia.150 mm	Km	0.40	8,763.00	438.15	9,201.15	3,639.97

Bill of Quantities for Water Supply work for DMA 24 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items	Rate	Amount
iii)	Dia.300 mm	Km	0.36	16,892.00	844.60	17,736.60	6,438.39
21	Lowering, laying and jointly in position following CID/F Reflex valves, Butterfly valves and Sluice valves including cost of all labour jointly material, including nut bolts and giving satisfactory hydraulic testing etc. complete. (Rate for all class of valves)						
	MJP 18-19,Page No.240, item no. 4						
i)	100mm	No.	15.00	1877.00	93.85	1970.85	29562.75
ii)	150mm	No.	2.00	2950.00	147.50	3097.50	6195.00
iii)	250mm	No.	1.00	3999.00	199.95	4198.95	4198.95
iv)	300mm	No.	4.00	4148.00	207.40	4355.40	17421.60
22	Providing and fixing CI road box including loading, unloading and carting to site of work including all necessary excavation in all types of starta and fixing in murum packing etc. complete.						
	MJP 18-19,Page No.388, item no. 5						
	a) 100mm x 225mm (20kg) for 100mm, 150mm, 200mm, 250mm	No.	18.00	1327.00	66.35	1393.35	25080.30
	Pressure Loggers						
23	Erection, installation, calliberation, commissioning of pressure loggers at location suggested by Engineer-in-charge in all respect and as per specification given in tender.	No.	4.00	13197.00	659.85	13856.85	55427.40
	(Vendor supply item)						

Bill of Quantities for Water Supply work for DMA 24 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items	Rate	Amount
24	Residual chlorine analyser						
	Erection ,installation, testing of residual chlorine analyser/metal must have automatic sensor cleaning facility at oure water sump and interfacing with PLC panel. Residual chlorine meter shall comprises of 3 components i.e. sensors, flow through assembly and transmitter with indicator and gives 2 outputs one to Local display and other to PLC including Mounting arrangement.	No.	1.00	13197.00	659.85	13856.85	13856.85
	Overall Range : 0 8mg/l (ppm)						
	Accuracy : 2% of full scale						
	Supply voltage : 230 V ac						
	Outout : 4 20 mA						
	Membrane free sensor of 2 gold plated electrodes for long term stability and reference electrode (ag/Agcl) must be provided to avoid maintenance.						
	IP 65 Nema 4 housing protection class required.						
	MJP ELEC/MECH,Page No.104, item no. 5.5						
25	Providing, House Service Connection in M.D.P.E. (PE 100, PN 16) pipe (Single service connection) from main header to property limit, including supply and fixing of brass ferrule conforming to IS2692, all specials, clamp saddle of non-corrosive engineering plastic (Polyethylene) body moulded with Stainless steel threaded metal insert for tapping outlet, and drilling the main pipeline shall be through the chain and ratchet mechanism and the drill hole shall be perpendicular to the axis of the main pipeline, including excavation, refilling trenches, tools and tackels, etc. complete as directed.						

Bill of Quantities for Water Supply work for DMA 24 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items	Rate	Amount
	(RA)						
	15mm	Nos.	588.00	2022.00	101.10	2123.10	1248382.80
	20mm	Nos.	12.00	2247.00	112.35	2359.35	28312.20
	40mm	Nos.	20.00	3642.00	182.10	3824.10	76482.00
26	Providing and making lead caulked joint with molten lead to cast iron pipes and/or specials of all classes and fitting of following dia including cost of lead and all jointing material, labour, hydraulic testing etc. complete.	Joint					200000.00
	Work shall be measured and paid as per the units and rates given in MJP schedule, MJP 18-19,Page No.88, item						
27	Repairing damage water connection to house hold including labour, materials etc. complete.	Nos.	50.00	406.00	20.30	426.30	21315.00
	(Work shall be measured and paid for, per number on actual quantity.) (RA)						
28	Repairing to the damaged drainage connection including labour, materials etc. complete. (RA)						400000.00
	(Work shall be measured and paid for, per running meter basis on actual quantity.)						
	SW pipe - 100mm	Rmt	1	359	17.95	376.95	
	SW pipe - 150mm	Rmt	1	394	19.70	413.70	
	SW pipe - 225mm	Rmt	1	447	22.35	469.35	
	RA						
29	Providing and construction RCC valve chambers in cement concrete grade M250 including RCC cover with fitting hooks etc, but excluding steel reinforcement as per design and drawing for chambers with internal sizes as follows - (RA items)						
	1) Bulk flow meter (100mm) - 3M X 3.5M X 2M	Nos	1.00	247336.00	12366.80	259702.80	259702.80

Bill of Quantities for Water Supply work for DMA 24 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items	Rate	Amount
	2) Pressure loggers = 0.9M X 0.9M X 1.5M	Nos	4.00	40140.00	2007.00	42147.00	168588.00
	3) Residual quality analyser - 0.9M X 0.9M X 1.5M	Nos	1.00	40140.00	2007.00	42147.00	42147.00
	4) Pressure reducing valve (for 250 and less) - 1.2M X 1.2M X 1.5M	Nos	1.00	53618.00	2680.90	56298.90	56298.90
30	Providing and constructing B.B. masonry valve Chamber with 15 CM thick 1:3:6 proportion PCC bedding ,excluding excavation,B.B. masonry in CM 1:5 proportion precast R.C.C frame and cover etc completed as directed by Engineer-In-Charge	Nos	620.00	4149.00	207.45	4356.45	2700999.00
	Note: wall thickness:0.23 M for depth of 1.2 M and 0.35 m for balance depth exceeding 1.2 M.						
	As above 60 x 45 cm internal size and depth upto 0.90 m with precast RCC slab cover.						
	MJP schedule, MJP 18-19,Page No.385, item no. 1						
Sub Total Labour							8067351.14
Sub total (Material + Labour)							14454320.73
Reinstatement of Road works							
	Bituminous Road						
i)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2). Spec. No. MORTH -305						
	From Material available from road way cutting (PWD SSR 2017-18 item 2.25)	Cum	262.73	112.00	5.60	117.60	30897.33
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	65.68	419.00	20.95	439.95	28897.28

Bill of Quantities for Water Supply work for DMA 24 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items	Rate	Amount
ii)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	158.62	1606.00	80.30	1686.30	267473.53
iii)	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver. (RA based on-PWD SSR 2017-18 item 3.23)	Cum	264.36	1862.00	93.10	1955.10	516849.01
iv)	DENSE BITUMINOUS MACADAM :--Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder, @ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-40 grade with stone dust (RA based on-PWD SSR 2017-18 item 3.45)	Cum	63.45	5558.00	277.90	5835.90	370265.97

Bill of Quantities for Water Supply work for DMA 24 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items	Rate	Amount
v)	BITUMINOUS CONCRETE --Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler(RA based on-PWD SSR 2017-18 item 3.51)	Cum	42.30	6917.00	345.85	7262.85	307200.40
vi)	Prime Coat						
	Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	1,057	17	0.85	17.85	18875.26
vii)	Tack Coat						

Bill of Quantities for Water Supply work for DMA 24 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items	Rate	Amount
	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg/sqm on the prepared bituminous/granular surface cleaned with mechanical broom. etc. complete.(Spec. No. MORTH-503)	Sqm	1,057	8	0.40	8.40	8882.48
	Concrete Road						
viii)	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH -305						
	From Material available from road way cutting (PWD SSR 2017-18 item 2.25)	Cum	112.60	112.00	5.60	117.60	13241.71
	From Material available from Borrow pit (RA based on-PWD SSR 2017-18 item 2.28)	Cum	28.15	419.00	20.95	439.95	12384.55
ix)	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material (RA based on-PWD SSR 2017-18 item 3.05)	Cum	67.98	1606.00	80.30	1686.30	114631.51

Bill of Quantities for Water Supply work for DMA 24 in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items	Rate	Amount
x)	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge , compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete. (RA based on-PWD SSR 2017-18 item 5.13)	Cum	45.32	2784.00	139.20	2923.20	132475.77
xi)	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver,compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any (RA based on-MoRTH)	Cum	126.89	5735.00	286.75	6021.75	764114.91
xii)	Providing road lane marking (PWD SSR 2017-18 item 6.23)	Sqm	422.98	123.00	6.15	129.15	54627.22
Total cost of Road Reinstatement							2640816.93

COST ESTIMATE FOR IMPROVEMENTS TO WATER SUPPLY SYSTEM IN ABD AREA UNDER SOLAPUR SMART CITY DEVELOPMENT PROJECT

DMA No.	PIPELINE WORK	ROAD REINSTTAMENT	COST OF PIPE LINE WORKS + ROAD REINSTATEMENT	AMOUNT IN RS. CR
	CONSTUCTION COST (INR)	CONSTUCTION COST (INR)		
1	14481195.0	2308286.15	16789481.13	1.68
2	43234532	18922225.24	62156756.98	6.22
3	17023745	2614622.67	19638368.12	1.96
4	8312679	310460.40	8623139.15	0.86
5	23551971	14084721.03	37636692.10	3.76
7	24243857	9192502.85	33436359.82	3.34
8	29319769	12382436.45	41702205.39	4.17
10	16767610	6294797.29	23062406.83	2.31
11	14426956	5676804.59	20103760.13	2.01
12	21750501	7531369.18	29281870.59	2.93
13A	17196371	6587122.72	23783493.85	2.38
13B	16182666	5043699.95	21226365.82	2.12
16	41703945	18085287.67	59789232.51	5.98
17	36803272	16737704.67	53540976.94	5.35
18	24281887	6657667.89	30939555.23	3.09
19	29491842	11895654.76	41387496.95	4.14
20	44641918	10133497.96	54775415.90	5.48
21	19275313	6251219.99	25526532.80	2.55
23A	12183374	4100570.35	16283944.75	1.63
23B	32906856	22273001.19	55179857.61	5.52
23 C	22637804	10839341.21	33477145.67	3.35
24	14454321	2640816.93	17095137.66	1.71
Total	524872384.8	200563811.1	725436195.93	72.54



SOLAPUR CITY DEVELOPMENT CORPORATION LIMITED (SCDCL)

SUMMARY OF COSTS: Improvements to Sewerage System for ABD Area of Solapur Smart City.

Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items and 10% on	Rate(Rs,)	Amount
1	Providing supplying in standard length (PE material) HDPE Double wall corrugated pipe for non pressure underground drainage and sewerage with smooth internal & corrugated external surface conforming to IS 16098:Part-2 2013 with spigot or plain end with necessary jointing material coupler including all statutory duties and taxes such as GST levied by Gol and GoM in all respect, transportation and freight charges, inspection charges, loading and unloading charges conveyance to departmental store/site and stacking the same in in closed shade duly protecting from direct sun ray and rains etc. complete. Correct as above						
	MJP 18-19,Page No.205, item no. 4						
	ii) D.W.C. Class SN4						
	200 mm dia	Rmt	59169.00	533		533	31537077.00
	ii) D.W.C. Class SN8						
	200 mm dia	Rmt	32221.00	640		640	20621440.00



SOLAPUR CITY DEVELOPMENT CORPORATION LIMITED (SCDCL)

SUMMARY OF COSTS: Improvements to Sewerage System for ABD Area of Solapur Smart City.

Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporati on Area Charges 5% on other than supply items and 10% on	Rate(Rs,)	Amount
2	R.C.C. pipes						
	Providing ISI standard R.C.C. pipes in standard lengths of following class and diameter suitable for either collar joints or rubber ring joints, excluding GST levied by GOI and GOM in all respect including inspection charges, transport to departmental stores, unloading and stacking etc. complete as per IS - 458/1988						
	MJP 18-19,Page No.157, Section-I ,item no. 1 (with rubber ring joint)						
	Class NP III						
	200 mm dia	Rmt	1162	372		372	432264.00
	300mm dia	Rmt	422	714		714	301308.00
	350 mm dia	Rmt	0	1188		1188	0.00
	400mm dia	Rmt	0	1267		1267	0.00
	500mm dia	Rmt	30	1683		1683	50490.00
	600mm dia	Rmt	22	1980		1980	43560.00
	700mm dia	Rmt	22	2772		2772	60984.00
	800 mm dia	Rmt	20	2970		2970	59400.00



SOLAPUR CITY DEVELOPMENT CORPORATION LIMITED (SCDCL)

SUMMARY OF COSTS: Improvements to Sewerage System for ABD Area of Solapur Smart City.

Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items and 10% on	Rate(Rs.)	Amount
3	Excavation						
i	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling, etc.						
	MJP 18-19,Page No.47, item no. 1						
	Lift 0 to 1.50 M	Cum	114039.12	145	7.25	152.25	17362455.67
	Lift 1.50 to 3.0 M	Cum	15497.19	157	7.85	164.85	2554711.16
	Lift 3.0 to 4.50 M	Cum	894.64	169	8.45	177.45	158754.64
	Lift 4.50 to 6.0 M	Cum	359.01	181	9.05	190.05	68230.68
ii	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete						
	MJP 18-19,Page No.47, item no. 2						
	Lift 0 to 1.50 M	Cum	19577.19	165	8.25	173.25	3391747.52
	Lift 1.50 to 3.0 M	Cum	38914.76	177	8.85	185.85	7232307.24
	Lift 3.0 to 4.50 M	Cum	1789.29	189	9.45	198.45	355084.34
	Lift 4.50 to 6.0 M	Cum	718.03	201	10.05	211.05	151539.96
iii	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete.						



SOLAPUR CITY DEVELOPMENT CORPORATION LIMITED (SCDCL)

SUMMARY OF COSTS: Improvements to Sewerage System for ABD Area of Solapur Smart City.

Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporati on Area Charges 5% on other than supply items and 10% on	Rate(Rs,)	Amount
	MJP 18-19,Page No.47, item no. 3						
	Lift 0 to 1.50 M	Cum	58731.56	185	9.25	194.25	11408605.31
	Lift 1.50 to 3.0 M	Cum	45967.42	197	9.85	206.85	9508361.01
	Lift 3.0 to 4.50 M	Cum	2683.93	209	10.45	219.45	588989.11
	Lift 4.50 to 6.0 M	Cum	1077.04	221	11.05	232.05	249927.84
iv	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material with 10km lead and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete.						
	MJP 18-19,Page No.47, item no. 5						
	Lift 0 to 1.50 M	Cum	58731.56	454	22.70	476.70	27997334.11
	Lift 1.50 to 3.0 M	Cum	30649.35	475	23.75	498.75	15286363.58
	Lift 3.0 to 4.50 M	Cum	4473.22	496	24.80	520.80	2329653.89
	Lift 4.50 to 6.0 M	Cum	1795.07	517	25.85	542.85	974454.70
v	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means.						
	MJP 18-19,Page No.48, item no. 7						
	Lift 0 to 1.50 M	Cum	38853.32	770	38.50	808.50	31412909.51



SOLAPUR CITY DEVELOPMENT CORPORATION LIMITED (SCDCL)

SUMMARY OF COSTS: Improvements to Sewerage System for ABD Area of Solapur Smart City.

Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporati on Area Charges 5% on other than supply items and 10% on	Rate(Rs,)	Amount
	Lift 1.50 to 3.0 M	Cum	22996.89	791	39.55	830.55	19100067.29
	Lift 3.0 to 4.50 M	Cum	3578.58	812	40.60	852.60	3051095.09
	Lift 4.50 to 6.0 M	Cum	1429.66	833	41.65	874.65	1250449.84
vi	Excavation for foundation /pipe trenches in Slush Muddy/ Marshy /Slushy /Soil including use of poclain, labour for dewatering during execution including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, preparing the bed by cleaning the mud, labour required for execution for shutterng item but excluding back filling etc. complete. Providing and fixing shuttering shall be paid separately.	cum	68.00	341.00	17.05	358.05	24347.40
	MJP 18-19,Page No.48, item no. 8						
4	Lowering, Laying and Jointing (PE material) HDPE double wall corrugated pipe for non pressure underground by heating to the ends of pipes with the help of tefflon coated electric mirror / heater to the required temparature and then pressing the ends together against each other, to form a monolithic & leak proof joint by thermosetting process. The pressing may be required to be done with Jacks/ Hydraulic Jacks/Butt fusion machine etc. complete with all materials labours as directed by Engineer - in - charge. including to be corrected as above						
	MJP 18-19,Page No.206, item no. 5						
	HDPE PIPES FOR DRAINAGE						
	ii) D.W.C. Class SN8						
	200 mm dia	Rmt	91390.00	39.00	1.95	40.95	3742420.50



SOLAPUR CITY DEVELOPMENT CORPORATION LIMITED (SCDCL)

SUMMARY OF COSTS: Improvements to Sewerage System for ABD Area of Solapur Smart City.

Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items and 10% on	Rate(Rs.)	Amount
5	Hydraulic testing of HDPE double wall corrugated pipe for non pressure underground line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting, placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments, labour, operation charges, etc. required for testing. The rate under this item shall also include cost of retesting, if necessary and reinstating to original position.						
	MJP 18-19,Page No.207, item no. 6						
	HDPE PIPES FOR DRAINAGE						
	ii) D.W.C. Class SN8						
	200 mm dia	Km	91.00	4100.00	205.00	4305.00	391755.00
6	Lowering, laying and jointing in proper grade and alignment R.C.C. pipes with collar joints in C.M.1:1 proportion or socketed R.C.C. pipes with rubber joints (excluding cost of rubber ring or R.C.C. collar,) including cost of conveyance from stores to site of work, cost of jointing material, labour, etc. complete as directed by Engineer-in-charge (For all class of pipes.) as per IS-783-1985.						
	MJP 18-19,Page No.162, item no. 2 (with rubber ring joint)						



SOLAPUR CITY DEVELOPMENT CORPORATION LIMITED (SCDCL)

SUMMARY OF COSTS: Improvements to Sewerage System for ABD Area of Solapur Smart City.

Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporati on Area Charges 5% on other than supply items and 10% on	Rate(Rs,)	Amount
	200 mm dia	Rmt	1162	75.00	3.75	78.75	91507.50
	300mm dia	Rmt	422	118.00	5.90	123.90	52285.80
	350 mm dia	Rmt	0	121.00	6.05	127.05	0.00
	400mm dia	Rmt	0	155.00	7.75	162.75	0.00
	500mm dia	Rmt	30	202.00	10.10	212.10	6363.00
	600mm dia	Rmt	22	254.00	12.70	266.70	5867.40
	700mm dia	Rmt	22	288.00	14.40	302.40	6652.80
	800 mm dia	Rmt	20	333.00	16.65	349.65	6993.00
7	Hydraulic testing of RCC pipe line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting, placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments, labour, operation charges, etc. required for testing. The rate under this item shall also include cost of retesting, if necessary and reinstating to original position. New item to be added						
	MJP 18-19,Page No.163, item no. 3 (for rubber ring joint)						
	200 mm dia	Rmt	1.16	6150.00	307.50	6457.50	7503.62
	300mm dia	Rmt	0.42	13325.00	666.25	13991.25	5904.31
	350 mm dia	Rmt	0.00	13325.00	666.25	13991.25	0.00
	400mm dia	Rmt	0.00	17425.00	871.25	18296.25	0.00
	500mm dia	Rmt	0.03	22550.00	1127.50	23677.50	710.33
	600mm dia	Rmt	0.02	28700.00	1435.00	30135.00	662.97
	700mm dia	Rmt	0.02	31775.00	1588.75	33363.75	734.00
	800 mm dia	Rmt	0.02	36900.00	1845.00	38745.00	774.90



SOLAPUR CITY DEVELOPMENT CORPORATION LIMITED (SCDCL)

SUMMARY OF COSTS: Improvements to Sewerage System for ABD Area of Solapur Smart City.

Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items and 10% on	Rate(Rs,)	Amount
8	Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	Cum	378858.11	66.00	3.30	69.30	26254867.02
	MJP 18-19,Page No.50, item no. 15						
9	Filling in plinth and floors / trenches with approved murum from excavated materials from foundations in 15cm to 20cm layers including watering and compaction, etc. complete.	Cum	34236.32	66.00	3.30	69.30	2372577.253
	MJP 18-19,Page No.51, item no. 16						
10	Filling in plinth and floors/ trenches with contractor's murum for bedding in 15cm to 20cm layers including watering and compaction complete.	Cum	39.00	691.00	34.55	725.55	28296.45
	(MJP CSR 18-19, Item No 17 /page no.51						
11	Providing and laying in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, formwork, compaction, curing, etc. complete.						
	b) In PCC M-150	Cum	267.11	4079.00	203.95	4282.95	1144023.914



SOLAPUR CITY DEVELOPMENT CORPORATION LIMITED (SCDCL)

SUMMARY OF COSTS: Improvements to Sewerage System for ABD Area of Solapur Smart City.

Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items and 10% on	Rate(Rs.)	Amount
	MJP 18-19,Page No.59, item no. 1						
12	Providing and constructing B.B. masonry circular manhole without conical shape excluding excavation, RCC 1:2:4 proportion, 20cm bedding brick masonry in CM 1:4 proportion, 23cm thick for 2m depth from top 35cm thick for 2m below it and 45cm thick for balance depth, RCC slab at top and at 2m depth from top for supporting brick masonry above it, plastering with smooth finish in CM 1:2 proportion, C.C. 1:2:4 finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56cm dia. etc. complete as directed by Engineer-in-charge. (Basic rate for 2.0 m depth is Rs 18781.00)						
	MJP 18-19,Page No.390, item no. 9						
	1.00 m dia. X 2.0 m depth	No	20.00	18781.00	939.05	19720.05	394401.00
	Rebate for every decrease in depth of 50 cm or part there of.	50 cm depth	2741.00				
13	Providing and constructing on sewer, B.B. masonry circular manhole with concentric cone 1.2 m dia at bottom and 0.5m dia at top and upto a depth of 2m with 23cm brick work in CM 1:4 proportion excluding excavation including foundation concrete 250mm thick and haunches and channels in C.C. 1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56cm dia. etc. complete as directed by Engineer-in-charge. (Basic rate for 2.0 m depth is Rs 21155.00)						
	a) Rebate for every decrease in depth of 50cm or part there of	50 cm depth	3134.00				
	MJP 18-19,Page No.388, item no. 6						



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SUMMARY OF COSTS: Improvements to Sewerage System for ABD Area of Solapur Smart City.

Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items and 10% on	Rate(Rs,)	Amount
	Rate for depth upto 2.0 m = Rs 21155.00						
	Rate for depth upto 2.50 m = Rs 21155.00+ Rs 3134.00=Rs 24289.00						
	Rate for depth upto 3.0 m = Rs 24289.00+ Rs 3134.00=Rs 27423.00						
	For 1200mm dia upto 2.0 m depth	No	3308.00	21155.00	1057.75	22212.75	73479777.00
	For 1200mm dia upto 3.0 m depth	No	529.00	27423.00	1371.15	28794.15	15232105.35
14	Providing and constructing on sewer, B.B. masonry circular manhole with concentric cone 1.5m dia. at bottom and 0.5m dia. at top and upto a depth of 5m with 23cm brick work, upto depth of 2m from top and 35 cm thick brick work for balance depth in CM 1:4 proportion with 20mm thick smooth plaster on both sides in CM 1:2 proportion excluding excavation including foundation concrete 250mm thick and haunches and channels in C.C. 1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56cm dia. etc. complete as directed by Engineer-in-charge. (Basic rate for 5.0 m depth is Rs 63207.00)						
	a) Rebate for every decrease in depth of 50cm or part thereof	50 cm depth		6479.00			
	MJP 18-19,Page No.389, item no. 7						
	Rate for depth upto 5.0 m = Rs 63207.00						
	Rate for depth upto 4.50 m = Rs 63207.00- Rs 6479.00=Rs 56728.00						
	Rate for depth upto 4.0 m = Rs 56728.00- Rs 6479.00=Rs 50249.00						
	Rate for depth upto 3.50 m = Rs 50249.00- Rs 6479.00=Rs 43770.00						
	Rate for depth upto 3.0 m = Rs 43770.00- Rs 6479.00=Rs 37291.00						
	Rate for depth upto 2.50 m = Rs 37291.00- Rs 6479.00=Rs 30812.00						



SOLAPUR CITY DEVELOPMENT CORPORATION LIMITED (SCDCL)

SUMMARY OF COSTS: Improvements to Sewerage System for ABD Area of Solapur Smart City.

Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items and 10% on	Rate(Rs,)	Amount
	Rate for depth upto 2.00 m = Rs 30812.00- Rs 6479.00=Rs 24333.00						
	For 1500mm dia upto 2.0 m depth	No	5.00	24333.00	1217	25549.65	127748.25
15	Providing and constructing on sewer, B.B. masonry circular manhole with concentric cone 1.5m dia. At bottom and 0.5m dia. At top and upto a depth of 9m with 23cm brick work, upto depth of 2m from top and 35 cm thick brick work for depth of 2m and 45cm thick brick work for remaining depth upto 9m in CM 1:4 proportion with 20mm thick smooth plaster on both sides in CM 1:2 proportion excluding excavation including foundation concrete 250mm thick and haunches and channels in C.C. 1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56cm dia. etc. complete as directed by Engineer-in-charge. (Basic rate for 9.0 m depth is Rs.136062.00)						
	a) Rebate for every decrease in depth of 50cm or part thereof	50 cm depth		8151.00			
	MJP 18-19, Page No.389, item no. 8						
	Rate for depth upto 9.0 m = Rs 136062.00						
	Rate for depth upto 8.50 m = Rs 136062.00- Rs 8151.00=Rs 127911.00						
	Rate for depth upto 8.00 m = Rs 127911.00- Rs 8151.00=Rs 119760.00						
	Rate for depth upto 7.50 m = Rs 119760.00- Rs 8151.00=Rs 111609.00						
	Rate for depth upto 7.00 m = Rs 111609.00- Rs 8151.00=Rs 103458.00						
	Rate for depth upto 6.50 m = Rs 103458.00- Rs 8151.00=Rs 95307.00						
	Rate for depth upto 6.00 m = Rs 95307.00- Rs 8151.00=Rs 87156.00						
	Rate for depth upto 5.50 m = Rs 87156.00- Rs 8151.00=Rs 79005.00						
	Rate for depth upto 5.00 m = Rs 79005.00- Rs 8151.00=Rs 70854.00						



SOLAPUR CITY DEVELOPMENT CORPORATION LIMITED (SCDCL)

SUMMARY OF COSTS: Improvements to Sewerage System for ABD Area of Solapur Smart City.

Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items and 10% on	Rate(Rs,)	Amount
	Rate for depth upto 4.50 m = Rs 70854.00- Rs 8151.00=Rs 62703.00						
	Rate for depth upto 4.00 m = Rs 62703.00- Rs 8151.00=Rs 54552.00						
	Rate for depth upto 3.50 m = Rs 54552.00- Rs 8151.00=Rs 46401.00						
	Rate for depth upto 3.00 m = Rs 46401.00- Rs 8151.00=Rs 38250.00						
	For 1500mm dia upto 3.0 m depth	No	431.00	38250.00	1913	40162.50	17310037.50
	For 1500mm dia upto 4.50 m depth	No	158.00	62703.00	3135	65838.15	10402427.70
	For 1500mm dia and upto 6.50 m depth	No	54.00	95307.00	4765	100072.35	5403906.90
16	Providing and constructing B.B. masonry chamber with 15cm thick 1:3:6proportion PCC bedding, excluding excavation, B.B. masonry in CM 1:5 proportion precast S.F.R.C. frame and cover, etc. complete as directed by Engineer in charge.						
	Note - Wall thickness : 0.23m for depth of 1.2m and 0.35m for balance depth exceeding 1.2m	No	5333.33	11051.00	553	11603.55	61885600
	As above of 0.9x0.45m internal size and depth upto 1.20 m with S.F.R.C. frame and cover.						
	Add for every increase in depth of 30cm or part thereof	30 cm		1374.00			
	MJP 18-19,Page No.387, item no. 3 (B)						



SOLAPUR CITY DEVELOPMENT CORPORATION LIMITED (SCDCL)

SUMMARY OF COSTS: Improvements to Sewerage System for ABD Area of Solapur Smart City.

Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items and 10% on	Rate(Rs.)	Amount
17	Providing 150 mm dia S.W. or R.C.C.pipes in vertical drop arrangement including providing 150 mm dia S.W.and R.C.C. pipe fixed in B.B. masonry of manhole at the required level including providing 150 mm dia double tee, 150 mm dia right angled bend, encasing in B.B. masonry 1:4 proportion all around the pipe,double tee, bend upto the foundation of manhole, jointing, cutting, filling including neat cement rendering, plugging the opening with jungke wood knob complete as directed by Engineer-in-charge (0.6 m depth) excluding cost of chamber.						
	(MJP CSR 18-19, Item No 10,11 /page no.391)						
	For 0.60 m depth basic rate is Rs. 1747.00						
	Extra for every 0.50 m depth beyond initial depth of 0.60 m	50 cm depth		667.00			
i)	As above for 150 mm pipes and depth upto 0.60 m	No	400.00	1747.00	87.35	1834.35	733740.00
ii)	150 mm dia, 1.10 m depth (2X 667 = Rs.1334.00) Rs 1747+1334 = Rs Rs. 3081.00	No	400.00	3081.00	154.05	3235.05	1294020
iii)	As above for 200 mm pipes and depth upto 0.60 m	No	100.00	2252.00	112.60	2364.6	236460
	Extra for every 0.50 m depth beyond initial depth of 0.60 m	50 cm depth		730.00			
iv)	200 mm dia, 1.1 m depth (2x730= Rs 1460.00) Rs.2252 +1460 = Rs.3712.00	No	100.00	3712.00	185.60	3897.6	389760
18	Repairing of Existing telephone /electric pole and cable considering the cost of excavation ,providing,lowering,laying the water supply lines,cables etc. and Including the cost of material and transportation etc.complete as directed by Engineer Incharge.	Rm	10000.00	2000.00	100.00	2100	21000000



SOLAPUR CITY DEVELOPMENT CORPORATION LIMITED (SCDCL)

SUMMARY OF COSTS: Improvements to Sewerage System for ABD Area of Solapur Smart City.

Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items and 10% on	Rate(Rs,)	Amount
	Work shall be measured and paid on the actual quantity executed . Engineer In-Charge's decision shall be final and binding on Contractor .						
	(RA)						
19	Carriage of surplus excavated material over distance exceeding 50m including loading , unloading, spreading etc as directed.	Cum	Lump Sum				21211229.69
	MJP 18-19,SectionC-(transportation), Lead Statement VI,Page No.30						
20	Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by Engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	HP/hr	1244.00	64.00	3.20	67.20	83596.8
	MJP 18-19,Page No.50, item no. 14						
21	Open timbering in trenches of depth more than 1.5 m for shoring and strutting including use of and waste of all necessary timber works including walling, struts, open polling boards/ horizontal sheeting, runners, etc. as may be necessary and fixing and removal complete. (Measurements to be taken of the face/area timbered) (NBO Item No. 4-15 page No.59)						
	(MJP SoR 18-19, page no 51.Item No 20 /Section-E Excavation,Page No 51						
	Additional per sqm for further lift of 1.50 m each	Sqm		31.00			
	Rate upto Lift 0 to 1.50 m =Rs 124.00						
	Rate upto Lift 1.50 to 3.00 m =Rs 124.00 + 31 = Rs 155.00						



SOLAPUR CITY DEVELOPMENT CORPORATION LIMITED (SCDCL)

SUMMARY OF COSTS: Improvements to Sewerage System for ABD Area of Solapur Smart City.

Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items and 10% on	Rate(Rs,)	Amount
	Rate upto Lift 3.00 to 4.50 m = Rs 155.00 + 31 = Rs 186.00						
	Rate upto Lift 4.50 to 6.00 m =Rs 186.00 + 31 = Rs.217.00						
	Lift 0 to 1.5 M [for non-water logged area]	Sqm	275718.00	124.00	6.20	130.20	35898483.6
	1.50 m to 3.0 m depth	Sqm	279204.00	155.00	7.75	162.75	45440451
	3.00 m to 4.50 m depth	Sqm	15816.00	186.00	9.30	195.30	3088864.8
	4.50 m to 6.00 m depth	Sqm	3636.00	217.00	10.85	227.85	828462.6
22	Providing dry trap / granite / quartzite / gneiss, rubble stone soling in 15cm to 20 cm thick layers (including hand packing and compacting), etc. complete. MJP 18-19,Page No.51, item no. 18	Cum	110.40	935.00	46.75	981.75	108385.2
	House Hold Drainage Connections						
23	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0-1.5m	Cum	12960.00	145.00	7.25	152.25	1973160
	MJP 18-19,Page No.47, item no. 1						
24	Excavation for foundation/pipes trenches in hard murum including removing the excavated material upto a distance of 50m and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete Lift 0-1.5m	Cum	2160.00	165.00	8.25	173.25	374220



SOLAPUR CITY DEVELOPMENT CORPORATION LIMITED (SCDCL)

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Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items and 10% on	Rate(Rs.)	Amount
	MJP 18-19,Page No.47, item no. 2						
25	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete.	Cum	6480.00	185.00	9.25	194.25	1258740
	Lift 0-1.5m						
	MJP 18-19,Page No.47, item no. 3						
26	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. Lift 0 to 1.5m	Cum	6480.00	454.00	22.70	476.7	3089016
	MJP 18-19,Page No.47, item no. 5						
27	Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means.	Cum	4320.00	770.00	38.50	808.5	3492720
	Lift 0-1.5m						
	MJP 18-19,Page No.48, item no. 7						



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SUMMARY OF COSTS: Improvements to Sewerage System for ABD Area of Solapur Smart City.

Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items and 10% on	Rate(Rs.)	Amount
28	Providing supplying in standard length (PE material) HDPE Double wall corrugated pipe for non pressure underground drainage and sewerage with smooth internal & corrugated external surface confirming to IS 16098:Part-2 2013 with spigot or plain end with necessary jointing material coupler including all statutory duties and taxes such as GST levied by Gol and GoM in all respect, transportation and freight charges, inspection charges, loading and unloading charges conveyance to departmental store/site and stacking the same in in closed shade duly protecting from direct sun ray and rains etc. complete. Correct as above	Rm	24000.00	262.00	13.10	275.1	6602400
	MJP 18-19,Page No.205, item no. 4						
	ii) D.W.C. Class SN4, ID 135 mm						
29	Providing Laying and fixing Jointing supreme Eco-drain 110mmSN-8 Nu-drain UPVc pipes or equivalent make manufacture as per EN 13476 or equivalent as per IS 15328 with fitting such a bends ,tees,coupler ,etc Jointing with rubber lubricant including necessary excavation ,trench refilling with selective excavated material etc.complete	Rmt	136000.00	279.00	13.95	292.95	39841200
	(P.W.D. CSR 17-18, I.No. 43.30/ Pg.No.), Sr no 1679-Bdv-Water supply and sanitary fittings.						
	UPVC-110mm dia pipe						
30	Reinstating Road By Paver Block						
	Providing & fixing heavy duty interlocking concrete rubber mold glossy paving block of 60mm thickness of having strength of 400 Kg/sqm of approved quality and shape on a bed of crush sand of 25 to 30mm thick including sticking joint and cleaning etc complete.(Using 100 % crush sand)	Sqm	5000.00	704.00	35.20	739.2	3696000



SOLAPUR CITY DEVELOPMENT CORPORATION LIMITED (SCDCL)

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Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items and 10% on	Rate(Rs,)	Amount
	(PWD CSR2017-18, Item No. 33.53 Pg. No.), Sr No 1210						
	60 mm thick M-40 grade						
31	Lowering, Laying and Jointing (PE material) HDPE double wall corrugated pipe for non pressure underground by heating to the ends of pipes with the help of teflon coated electric mirror / heater to the required temperature and then pressing the ends together against each other, to form a monolithic & leak proof joint by thermosetting process. The pressing may be required to be done with Jacks/ Hydraulic Jacks/Butt fusion machine etc. complete with all materials labours as directed by Engineer - in - charge. including to be corrected as above	Rmt	24000.00	31.00	1.55	32.55	781200
	MJP 18-19,Page No.206, item no. 5						
	HDPE PIPES FOR DRAINAGE- 135 mm dia.						
32	Hydraulic testing of HDPE double wall corrugated pipe for non pressure underground line to specified pressure including cost of all materials and labour and water for testing for specified length including cutting, placing end cap making arrangement for filling safe water using reciprocating type pumps which should be able to provide specified test pressure gauges and other necessary equipments, labour, operation charges, etc. required for testing. The rate under this item shall also include cost of retesting, if necessary and reinstating to original position.	km	24.00	3075.00	153.75	3228.75	77490
	MJP 18-19,Page No.207, item no. 6						
	HDPE PIPES FOR DRAINAGE- 135 mm dia.						



SOLAPUR CITY DEVELOPMENT CORPORATION LIMITED (SCDCL)

SUMMARY OF COSTS: Improvements to Sewerage System for ABD Area of Solapur Smart City.

Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporati on Area Charges 5% on other than supply items and 10% on	Rate(Rs,)	Amount
33	Removal of telephone /Electric poles including excavation and dismantling of foundation concrete and lines under the supervision of concerned department,disposal with all lifts and upto lead 1000 meters and stacking the serviceable and unserviceable material separately.	No	50.00	200.00	10.00	210.00	10500
	(PWD CSR 2017-18,,It.No.7.25), Sr No. 321.						
34	Repairing damage water connection to house hold including labour materials (Work shall be measured and paid for, per number on actual quantity.)- RA	No	300.00	406.00	20.30	426.30	127890
							617557806.04
Road Reinstatement works							
	Bituminous Road						
i	Subgrade - Construction of subgrade and earthen shoulders(Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads , transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2).Spec. No. MORTH - 205						
	From material available from road way cutting- Sr no 102 PWD SSR Item no 2.25	Cum	41270.27	112.00	5.60	117.60	4853384.117
	From material brought from borrow area- RA	Cum	4585.59	419.00	20.95	439.95	2017428.517



SOLAPUR CITY DEVELOPMENT CORPORATION LIMITED (SCDCL)

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Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items and 10% on	Rate(Rs.)	Amount
ii	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material .	Cum	18642.83	1606.00	80.30	1686.3	31437400.35
	RA						
iii	Wet Mix Macadam -- Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density. Laying By Grader/Paver.	Cum	31071.38	1862.00	93.10	1955.1	60747654.06
	RA						
iv	DENSE BITUMINOUS MACADAM.-- Providing and laying dense bituminous macadam using crushed aggregate of grading 2, premixed with bituminous binder,@ 4.50 % by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface , finished to the required grade ,level, alignment,and rolling to achieve the desired density for 50/75 mm compacted thickness with drum mix type hot mix plant with SCADA having complying essential features of Hot mix plant as per IRC-27-2009 specified conditions and attachments such as electronic load sensor based belt conveyers, automatic synchronization of bitumen and aggregate fedder,built in dust controller system and PLC for Drum Mix plant ,Sensor paver, and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with	Cum	7457.13	5558.00	277.90	5835.9	43519071.27



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Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items and 10% on	Rate(Rs.)	Amount
	RA						
v	BITUMINOUS CONCRETE:--Providing and laying bituminous concrete using crushed aggregate of grading 2, premixed with bituminous binder @5.4% by weight of total mix and filler, transported at site with VTS, laid over a previously prepared surface, finished to the required grade ,level, alignment, and rolling to achieve the desired density for 30/40 mm compacted thickness with drum mix plant with SCADA, Sensor paver and Vibratory roller excluding prime/Tack coat etc. complete -- Bitumen VG-30 grade with stone dust filler	Cum	4971.42	6917.00	345.85	7262.85	36106682.98
	RA						
vi	Prime Coat Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and spraying , primer at the rate of 0.6 Kg/sqm using Mechanical means. etc. complete (Spec. No. MORTH 502)	Sqm	124285.52	17.00	0.85	17.85	2218496.50
	Sr no 145 PWD SSR Item no 3.29						
vii	Tack Coat Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.25 kg/sqm on the prepared bituminous/granular surface cleaned with mechanical broom. etc. complete.(Spec. No. MORTH 502)	Sqm	124285.52	8.00	0.40	8.40	1043998.35
	Sr no 146 PWD SSR Item no 3.30						



SOLAPUR CITY DEVELOPMENT CORPORATION LIMITED (SCDCL)

SUMMARY OF COSTS: Improvements to Sewerage System for ABD Area of Solapur Smart City.

Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items and 10% on	Rate(Rs.)	Amount
	Concrete Road						
viii	Subgrade - Construction of subgrade and earthen shoulders (Construction of subgrade and earthen shoulders with approved materials obtained from borrow pits with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2). Spec. No. MORTH - 205						
	From material available from road way cutting- Sr.No 102 PWD SSR Item No.	Cum	23969.35	112.00	5.60	117.6	2818795.55
	From material brought from borrow area- RA	Cum	2663.26	419.00	20.95	439.95	1171701.72
ix	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader / Paver on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 -- Plant Mix Method and Grading - II Material	Cum	7989.78	1606.00	80.30	1686.3	13473171.58
	RA						
x	Construction of dry lean cement concrete Sub- base over aprepared sub-grade with coarse and fine aggregate conforming to IS: 383, the size of coarse aggregate not exceeding 25 mm, , cement content not to be less than 150 kg/ cum, optimum moisture content to be determined during trial length construction, concrete strength not to be less than 10 Mpa at 7 days, mixed in a batching plant/ Weigh batch mixer, transported to site with all leads and lifts, laid with a paver with electronic sensor /by suitable means as approved by Engineer in-charge, compacting with vibratory roller, finishing, curing and including preparation of sub-grade surface if required etc. complete.	Cum	5326.52	2784.00	139.20	2923.2	15570489.7
	RA						



SOLAPUR CITY DEVELOPMENT CORPORATION LIMITED (SCDCL)

SUMMARY OF COSTS: Improvements to Sewerage System for ABD Area of Solapur Smart City.

Cost estimate of Sewerage system in ABD area of Solapur Smart city

Sr.No.	Description	Unit	Qty	Unit Rate (Basic SOR)	Corporation Area Charges 5% on other than supply items and 10% on	Rate(Rs,)	Amount
xi	Providing and laying in-situ M40 Grade unreinforced plain cement concrete pavement over a prepared sub base with 43 grade cement ,coarse and fine aggregate conforming to IS 383, using fine and coarse aggregates combined gradation as per Table 600-3 of MORTH Specification 2013, mixed in a batching and mixing plant/ non tilting mixer and Weigh batcher as per approved mix design, admixtures, transporting to site, spreading, laying with approved make paver, compacted and finished in a continuous operation, finishing to lines and grades as directed by Engineer-incharge and curing by curing compound /by providing cement vata in cement Mortar 1:8 @0.6m X 0.6m centre to centre, admeasuring 80 mm at bottom and 40 mm at top with depth of 75mm and maintaining the same throughout curing period by any	Cum	14914.26	5735.00	286.75	6021.75	89809958.16
	RA						
xii	Providing road lane marking	Sqm	32573.80	123.00	6.15	129.15	4206906.27
	Sr.No.222 PWD SSR Item No. 6.23						308995139.11
			Total (Drainage + Road Reinstatement)				926552945.15
					INR CR		92.66

Bill of Quantities for Leak Detection and Leak Repairing in ABD area of Solapur Smart city					
Sr. NO.	Item Description	Units	Quantity	Rate	Amount (INR)
1	Supplying and installing following data processing, data management equipment and softwares etc. at site office, complete with cost of third party inspection, material, labour, taxes and duties (The quantities are minimum required to be supplied by th operator after approval of the employer, additional requirement will have to be borne by the bidder at his own cost and equipments shall be handed over to the employer after closure of the contracting acceptable condition taking its uses into consideration). Employer will audit the stocks each year or as decided.				
1.1	Equipment				
a)	Mechanical listening Stick	Nos	4	29700	118800
b)	Electronic listening stick	Nos	8	49500	396000
c)	Leak noise correlator	Nos	2	495000	990000
d)	Leak detection ground phones	Nos	4	55000	220000
e)	Metal pipe and cable locators	Nos	4	302500	1210000
f)	Non metallic pipe locators	Nos	2	1056000	2112000
	(Ref .Tender by MoUD for performance based management contract for improving the water supply services in Solapur - added 10% escalation for 2 years)				
2	Leak detection and rectification				
2.1	Leak detection by using latest technology for all feeder networks including cost of utility shifting works, traffic diversion etc. Leak detection should be supported with photographs and video records.	Km	46	379500	17457000
	(Ref .Tender by MoUD for performance based management contract for improving the water supply services in Solapur - added 10% escalation for 2 years)				
2.2	Repair / Rehabilitate / replace the leaky pipes, joints, pipe appurtenances The cost will include excavation, refilling, road cutting, road restoration, jointing, bedding, dewatering, timbering, cutting and welding of pipes, cost of new pipes etc. all complete in all types of pipe materials.				
2.2.1	Attending leaks in joints				
	Ductile Iron K7 Pipes				
	(Rate Analysis)				
2.1.1.1	100 mm	Nos	25	12245	306125
2.1.1.2	150 mm	Nos	15	13600	204000
2.1.1.3	200 mm	Nos	15	18100	271500
2.1.1.4	250 mm	Nos	15	21735	326025
2.1.1.5	300 mm	Nos	15	25960	389400
2.1.1.6	350 mm	Nos	15	38633	579489
2.1.1.7	400 mm	Nos	15	45134	677017
2.1.1.8	450 mm	Nos	15	50466	756991
2.1.1.9	500 mm	Nos	15	68381	1025717
2.1.1.10	600 mm	Nos	15	81357	1220353
2.1.1.11	700 mm	Nos	15	104140	1562107
2.1.1.12	750 mm	Nos	15	115706	1735595
	Cast Iron Pipes				
2.1.1.13	450 mm	Nos	15	39486	592291
2.1.1.14	500 mm	Nos	15	54229	813437
2.1.1.15	600 mm	Nos	15	65362	980428
2.1.1.16	750 mm	Nos	15	85363	1280450
					35224724

Bill of Quantities for SCADA AND INSTRUMENTATION WORKS

SR NO	REV NO	SPECIFICATION	Unit	Quantity (IMMEDIATE PHASE)	Quantity (ULTIMATE PHASE)	Unit Rate (INR)	Total (IMMEDIATE PHASE) - INR	Total (ULTIMATE PHASE) - INR
1	R0	Signal Survey, Design, Supply, FAT, Installation, Testing, Commissioning, SAT etc of Complete GPRS based centralised SCADA Monitoring system using 100 mbps speed leased line including modem and all connectivity accessories etc.						
1.1	R1	Blade server, medium range application having RAID 5 configuration. GPRS based SCADA software shall be deployed in the server. All required hardware, liscend software, KVM switch, 21" monitor, mouse etc shall be considered. Proposed Server model shall be HP Integrity BL860c (Robust value and virtualization of Integrity systems coupled with the efficiency of blades) or equivalent model of DELL/IBM. Number of processors: 2, shall be of 64 bit configuration Maximum number of cores: 4 Processors supported: Dual-Core Intel Itanium® 2 processors: 9040: 1.6 GHz, 533 MHz FSB and 9015: 1.4 GHz, 400 MHz FSB Cache: 18 MB L3 cache (1.6 GHz dual-core) Maximum memory: 48 GB Drives supported: Up to 2: Hot plug SFF SAS 10K 146/72/36 GB / Hot plug SFF SAS 15K 72/36 GB Maximum internal storage: 292 GB Form factor: 10U enclosure (8 blade servers per enclosure Monitors: Two nos. of 21" LED monitor shall be provided with KVM switch. Warranty: Shall be onsite / online for minimum 5 years. Software: The operating system of both application and database server shall be MS Windows 2016 or latest and database software shall be SQL / MS Access. Antivirus software shall be from reputed company based on the compatibility of hardware and operating system. All software shall be licensed and authenticated. Necessary online and offline supports for software updation based on latest release shall be provided.	Set	2	2	600,000.00	1,200,000.00	1,200,000.00
1.2	R1	NAS storage devices of 8 TB etc shall be considered.	Set	1	1	20,000.00	20,000.00	20,000.00
1.3	R1	Industrial grade operator PC having all latest configuration and Windows-10 based OS, professional version, MS Office, Antivirus software, Minimum configuration shall be as follows: Intel® Pentium® Processor G4400 4GB DDR3 RAM 500GB HDD DVD Drive Win 10 Pro 64Bit 21" Monitor Kyboard & Mouse etc	Nos	3	2	130,000.00	390,000.00	260,000.00
1.4	R0	SCADA Software for monitorin data at CCC having Unlimited Tags	LS	1	0	550,000.00	550,000.00	0.00
1.5	R0	Hard Key License	Nos	1	0	250,000.00	250,000.00	0.00
1.6	R0	Mimics Reporting Screen Development (approx 40 screens)	LS	1	1	300,000.00	300,000.00	300,000.00
1.7	R0	SCADA Software Development	LS	1	1	250,000.00	250,000.00	250,000.00
1.8	R0	Software Commissioning and Configuration (considered 10 Man days)	LS	1	1	150,000.00	150,000.00	150,000.00
1.9	R0	Supervision of Installation and Commissioning for GSM / GPRS (Considered 30 days)	LS	1	1	300,000.00	300,000.00	300,000.00
1.10	R0	Supply, Installation, testing and commissioning of GPRS Modem datalogger as per minimum Technical Specification.	Nos	120	80	25,000.00	3,000,000.00	2,000,000.00
1.11	R0	Supply, Installation, testing and commissioning of L2 managed Ethernet Switch, 24 Ports RJ 45 ports.	nos	1	1	130,000.00	130,000.00	130,000.00

Bill of Quantities for SCADA AND INSTRUMENTATION WORKS

SR NO	REV NO	SPECIFICATION	Unit	Quantity (IMMEDIATE PHASE)	Quantity (ULTIMATE PHASE)	Unit Rate (INR)	Total (IMMEDIATE PHASE) - INR	Total (ULTIMATE PHASE) - INR
1.12	R0	Supply, Installation, testing and commissioning of Router having minimum 2 Ethernet RJ 45 ports.	nos	1	1	140,000.00	140,000.00	140,000.00
1.13	R0	Supply, Installation, testing and commissioning of Server and Network cabinets [1200 mm (W) X 2000 mm (H) X 800 mm (D)] L2 managed Ethernet Switch including all other accessories like CAT6 patch cords, patch panel etc. Preferred make shall be Rittal.	LS	1	1	300,000.00	300,000.00	200,000.00
1.14	R0	Command Centre consoles and furnitures as per Client's acceptance	LS	1	0	300,000.00	300,000.00	0.00
1.15	R0	All other miscellaneous items like CAT6 cables, patch cords, RJ-45 socket, metal box, conduiting, cabling, laying, termination etc to complete the SCADA Central Command Centre activities.	LS	1	1	200,000.00	200,000.00	200,000.00
1.16	R0	supply and installation of minimum 5 A, 24 VDC SMPS units with surge protections facility.	Nos	20	20	15,000.00	300,000.00	300,000.00
1.17	R1	High Speed Modem, 10 MBPS speed	Nos	1	1	30,000.00	30,000.00	30,000.00
1.18	R0	Leased line Modem, 100 MBPS speed	Nos	1	1	30,000.00	30,000.00	30,000.00
1.19	R1	Large Video Screen, 55" size, LED screen, including driver and mounting kits	Nos	2	2	150,000.00	150,000.00	300,000.00
1.2		Total for SCADA implementation					7990000	5810000
2		FILED INSTRUMENTS						
2.1	R0	Supply and installation of Pressure Transmitter for distribution pipe lines pressure monitoring, weather protection to IP 68, Body material Die Cast Aluminium with integral / remote display. Medium - Potable Water, Max Pressure Range: 0 to 10 kg/cm2g. Preferred Make:Siemens, Rosemount, E & H, GE, Honeywell, Baldota etc.	Nos	100		45,000.00	4,500,000.00	
2.2	R0	Supply and installation of Ultrasonic Level Transmitter for distribution EST/GSR/Sumps for Level monitoring weather protection to IP 68, Body material Die Cast Aluminium with integral / remote display. Medium - Potable Water, Max Level Range: 0 to 8 Mtr. Preferred Make:Siemens, SBEM, E & H, GE, Honeywell etc.	Nos	50		45,000.00	2,250,000.00	
2.3	R0	Supply and installation of Radar (FMCW- Frequency Modulated Continuous Wave) Level Transmitter for distribution Dam and River Water Level monitoring, weather protection to IP 68, Body material Die Cast Aluminium with integral / remote display. Medium - Raw Water, Max Level Range: 0 to 40 Mtr. Preferred Make:Siemens, SBEM, E & H, GE, Honeywell etc.	Nos	25		150,000.00	3,750,000.00	
2.4	R0	Supply and installation of Free Residual Chlorine Analyser in distribution pipe lines for free residual chlorine monitoring, weather protection to IP 68, Body material Die Cast Aluminium with remote display. Medium - Potable Water, Max residual chlorine measurement Range: 0 to 5 ppm. Preferred Make: Forbes Marshal, HACH, Mettler Toledo etc.	Nos	66		150,000.00	9,900,000.00	

Bill of Quantities for SCADA AND INSTRUMENTATION WORKS

SR NO	REV NO	SPECIFICATION	Unit	Quantity (IMMEDIATE PHASE)	Quantity (ULTIMATE PHASE)	Unit Rate (INR)	Total (IMMEDIATE PHASE) - INR	Total (ULTIMATE PHASE) - INR
2.5	R0	Supply and installation of Electromagnetic Flow Meter including companion flange, gaskets etc in distribution pipe lines for flow monitoring, weather protection to IP 68, Body material CS, Sensor- SS316 with remote display. Medium - Potable Water. Preferred Make: Siemen, SBEM, EEPL, Khrono Marshal, GE etc.						
2.6	R0	Flow meter Line size 100 mm with Modbus RS485 and 4 to 20 mA analog output	Nos	15		160,000.00	2,400,000.00	
2.7	R0	Flowmeter Line size 150 mm with Modbus RS485 and 4 to 20 mA analog output	Nos	11		180,000.00	1,980,000.00	
2.8	R0	Supply and Installation of Non FLP Junction Boxes for entire DMA Area along with cable glands. Each 6 & 12 user JB shall conform to IEC-60529/IS-2148, Junction Box material: Die Cast Aluminium, 6 & 12 nos of inlet cable sizes shall be as required, minimum with double compression cable gland & Plug. Terminal shall be suitable to accepting 1.5 mm ² to 4 mm ² copper conductor. Pair / Core Cables shall be bottom entry. Cables are armoured. Required Canopy shall be provided. Minimum sizes shall be 400 mm (W) x 400 mm (H) X 200 mm (D) for accommodating 24 VDC power supply unit, GSM Modem, Transmitters display units as required. Terminal shall have 20% spare including earth boss, lock & key etc.	Nos	200		15000	3,000,000.00	
2.9	R0	Instrument signal cable: 1Px1.5 mm ² , individual pair screened & Overall screened, FRLS (Flame Retardant as per IEC 60332), armoured and overall FRLS sheathed copper signal cables.	Mtr	3000		45	135,000.00	
2.10	R0	Instrument Power cable:2Cx2.5 mm ² , individual pair screened & Overall screened, FRLS (Flame Retardant as per IEC 60332), armoured and overall FRLS sheathed copper signal cables.	Mtr	3000		48	144,000.00	
2.11	R0	Earthing Materials	LS	1		100,000.00	100,000.00	
2.12	R0	Instrument Hookups, mounting and other bulk materials like SS304L 10 mm OD tubes, 15 NB valves, Nipples, MS angles, MS plates, studs, bolts, Flanges, Gaskets etc.	LS	1		300,000.00	300,000.00	
2.13		Total for Instrumentation					28459000	
6		Grand Total					36,449,000.00	5,810,000.00

Comprehensive O & M							
	ITEM		Cost		O&M		Amount
1	O&M for SCADA & Instrumentation system						8110000.00
2	O&M for Water supply system		725436195.9		0.50%		3627180.98
3	O&M for Sewerage system		926552945.2		0.50%		4632764.726
4	O & M for Mechanical Meters and AMR		83121697		5%		4156084.85
							20526030.56
1	Comprehensive O & M						
	Operation and Maintenance Charges of the whole water supply scheme on SCADA,Sewerage System and generation of daily report of water quality parameters and electrical parameters with specific consumption in kWh/ml. Attending repairs etc. and perform the duties as per scope of work .The report shall be mailed daily to the quarters for monitoring purpose.				Payment %		Amount (Rs)
i	During First Year		5% of total cost		5%		1026301.53
ii	During Second Year		15% of total cost		15%		3078904.58
iii	During Third Year		20% of total cost		20%		4105206.11
iv	During Fourth Year		20% of total cost		20%		4105206.11
v	During Fifth Year		20% of total cost		20%		4105206.11
vi	During SixthYear		20% of total cost		20%		4105206.11
					100%	TOTAL COST	20526030.56

**Payment Shall be made on Quarterly basis or as per agreed terms by Employer
Amount subjected to change based on mutual discussion during Project Stage**