

BRIHANMUMBAI MUNICIPAL CORPORATION

Subject:-

P/L 1200mm NP4 class pipe sewer pipe for existing 600mm dia sewer line to micro sewer near Hemu Kalani Junction at R.C. marg, chembur, in M/West ward.

BILL OF QUANTITIES

Sr. No.	Schedule Item No.	Description	Total Qty	Unit	Rate	Total Cost
1	R2-SE-1-1	Excavation for foundations, substructures, basements, tanks, sumps, walls, chambers, manholes, trenches, poles, pits & general building works in all types of soils, vegetable earth, soft murum, running sand, shingle, turf clay, loam, peat, ash, shale, slag, chalk, garbage, muddy / marshy / slushy soil, marine clay, reclaimed land etc. for depths/lifts upto 2.0 M measured from the ground level, including dressing/trimming the sides, leveling and ramming of bottoms, manual dewatering, removing rank vegetation, backfilling in layers not more than 200 mm thickness, watering, consolidating, compacting to achieve not less than 97% Modified Proctor density conforming to relevant I-S, stacking the selected material in measurable heaps for future use within owners space or disposing within an initial lead of 150 m as directed, loading, unloading, leveling excluding shoring, strutting etc. complete as directed by Engineer-in-Charge. Note: 1) The rate includes the handling/supporting the existing utilities such as cables, drains, pipes, water mains etc. 2) It also includes the royalty and other taxes applicable if any.	50.00	CuM	468.00	23400.00
2	R2-SE-1-1-a	do-do-as per item R2-SE-1-1 for lift from 2.0 to 4.0m.	50.00	CuM	638.00	31900.00
3	R2-SE-1-1-b	do-do- as per item R2-SE-1-1 for lift from 4m to 6m.	50.00	CuM	868.00	43400.00
4	R2-SE-1-1-c	do-do- as per item R2-SE-1-1 for lift from 6 m to 8m.	50.00	CuM	1036.00	51800.00
5	R2-SE-1-1-j	Extra over above for item no. R2-SE-1-1 to R2-SE-1-1-i for relevant lift of excavation in soft/ disintegrated rock, road carriageway, sand stone, stiff clay, gravel, cobblestone, hard laterite, water bound macadam, wet mix macadam, asphalt mix carpet of any type, pitching, soling, paths and hardcore, lime concrete, plain cement concrete, stone masonry and all types of brick/ block masonry below ground level	30.00	CuM	429.00	12870.00
6	R2-SE-1-1-u	Extra over above for item no. R2-SE-1-1 to R2-SE-1-1-i for relevant lift of excavation in hard rock and reinforced concrete by chiseling for sewerage works by manual operations, pneumatic breaker, hammer, driller, compressor breaker, etc. including dressing/ trimming the sides, leveling of bottoms,	80.00	CuM	2100.00	168000.00
7	R2-SE-1-1-ae	Extra over above for item no. R2-SE-1-1 to R2-SE-1-1-if or relevant lifts of excavation in hard rock and reinforced concrete by splitter machine	80.00	CuM	4970.00	397600.00
8	R2-RW-10-55	Excavation in Reinforced OR pavement grade concrete M-20 & above by using modern machinery (poclain with rock breaker, etc.) including with stacking of excavated material within 150 m radius etc complete upto any depth as specified & as directed, by the Engineer.	10.00	CuM	1525.00	15250.00
9	R2-HE-8-27-a	Cutting of existing cement concrete road upto specified depth by using Diamond Saw machine etc. complete in all respects and as directed by Engineer In Charge. Note : The charges for supplying water and electricity are exclusive of the rate workedout upto 350 mm depth of cutting	20.00	Rmt	1486.00	29720.00
10	R2-SE-1-4-b	Providing and removing closed shoring and strutting in the trenches/pits for all depths as per specifications/drawings and or as directed by Engineer-in-charge by including walling, struts, open poling boards, horizontal sheeting, runners, dog spikes by using timber etc. complete.	5.00	CuM	8586.00	42930.00

11	R2-SE-1-5-a	Leaving shoring in trenches. (New or old) including dog spikes.	5.00	CuM	15561.00	77805.00
12	R2-SE-6-2-b	Constructing on sewer brick masonry conical manholes 1.5M dia. at bottom 0.56 M. dia. at top, built in brick masonry in cement mortar 1:3, plastered both inside and outside with 20 mm thick cement mortar 1:2 and neat cement rendering so as to give a smooth surface, including 300 mm thick M.15 cement concrete in foundation and in haunches and channels finished smooth with 20mm thick cement plaster in cement mortar 1:1 and providing C.I. steps (weighing 5.4 kg each) staggered at 300 mm. c/c including 75mm wide vata all round the external portion of the manhole and the foundation concrete in cement mortar 1:1 and supporting the incoming pipes with brick masonry wherever necessary including C.I. extra heavy duty (EHD) air-tight circular frame & cover (minimum 230 Kg.) with hinge/chain resting on 30 cm high cement concrete M.20 cap with necessary centering etc. all complete as per standard specifications and directions including finishing the cap with cement plaster on both sides 1:2 and neat cement rendering so as to give a smooth surface in line and level with the brick masonry surface and as per drawing DyCh.E.(Sewerage) P&D's office without excavation depth upto 2.3 M.(Depth of Manhole measured from top of manhole cover to Invert level of manhole)	1.00	no.	90305.00	90305.00
13	R2-SE-6-2-c	Extra for above manhole per metre depth above 2.3M and upto 5 M including safety chain and extra C.I steps on other side of benching-do-do-	32.00	MD	34099.00	1091168.00
14	R2-SE-6-2-d	Extra for above manhole per metre depth above 5M and upto 9M including safety chain and extra C.I steps on other side of benching-do-do-	80.00	MD	48097.00	3847760.00
15	R2-SE-12-15	Extra for providing locking arrangement to C.I. EHD Circular manhole frame and cover above the rate of providing and fixing C.I. EHD Circular manhole frame and cover.	1.00	Nos.	1038.00	1038.00
16	R2-RW-10-28	Supply & filling sand, metal GRAVELLY SAND Corresponded to CLASS II/ CLASS III GRADING of TABLE 100.1of new road pecifications-2006 in trenches upto required depth & watering, ramming etc. complete as directed	10.00	CuM	1905.00	19050.00
17	R2-RW-2-21	Providing & laying, spreading & compacting specified crushed stone in granular subbase course including premixing the material in mechanical mixer (pug mill or approved type), spreading of mixed material in uniform layer of 100mm to 75mm (compacted thickness each) with motor grader or paver on prepared murum surface & compacting with 10 tonne vibratory roller to achieve desired density including all material, labour, machinery, lighting barricating to all lifts & lead maintenance of diversion etc. complete.(metal gradation from 75mm to 75mm micron as per MCGM Road Specifications clause no.210).	10.00	CuM	2547.00	25470.00
18	R2-RW-2-22	Rebate for not using motor grader / paver for laying of Granular Sub base in RW-2-21	10.00	CuM	-93.00	-930.00
19	R2-RW-2-20	Providing & laying, spreading & compacting graded crushed stone aggregate to Wet Mix Macadam satisfaction including premixing the material with water to OMC in mechanical mix (pug mill) carriage of mix material by tipper to site laying in uniform layer of 75mm to100mm(compacted thickness each)with sensor paver finisher on prepared subbase & compacting with vibratory roller (10 tonne) to achieve desired density including lighing, guarding barricating & maintenance of diversion etc. as directed by the Engineer, (Rebate for not using sensor paver should be taken, (metal gradation from 53mm to 75mm micron as per MCGM Road Specifications clause no.240).	10.00	CuM	2937.00	29370.00

20	R2-RW-10-32	Providing and laying Dry Lean Concrete base including providing coarse and fine aggregate to the specified gradation using minimum cement content 150 kg/cum of concrete with OPC 43 grade cement, mixing of concrete as per approved design mix using mechanised batch mix plant of appropriate capacity, transporting and laying with self propelled paver with electronic sensor device and compacting with vibratory roller of minimum 80- 100 KN static weight to give desired compacted density and average compressive strength of 10 MPa at 7 days and curing with liquid curing compound and sprinkling water and covering with moist hessian cloth or ponding of water for 7 days including providing construction joints, including all material, labour, machinery with all leads and lifts etc. complete as specified and as directed by the Engineer. B) Laying by paver with electronic sensor device.	10.00	CuM	4481.00	44810.00
21	R2-RW-10-18	Providing & laying waterproof paper of 40 GSM including overlap (to be not less than 10cm) etc. complete as specified as directed	30.00	Sq.M	11.00	330.00
22	R2-RW-10-33	Providing & laying M-40 C.C.avg. compressive strength 45 MPa and avg. flexural strength of 5.0 MPa (As per IRC 15-2002.N.1.6) procured from M.C.G.M. approved R.M.C. plant including use of approved make of plasticizer/ retarder & Contractor's water with ice flakes and transported by transit mixer and placing at work site. Compacting, finishing, initial curing by approved curing compound & Contractor's water and tarring the sides of slab with hot bitumen as specified and directed (w/c ratio 0.4 maximum)(vata for curing will be paid separately.) (MINIMUM CEMENT CONTENT 350	10.00	CuM	7968.00	79680.00
23	R2-RW-10-05	Providing & laying R.C.C. running beam in M-40 cement concrete including required formwork mixing, compacting & curing, etc. complete reinforced with 12mm dia.(Minimum 4 Nos.)M.S. main bars & 6mm Dia M.S. rings at 15cm c/c to be anchored in slipper slab properly with M.S. reinforcement as per drawing etc. complete as specified(Steel will not be paid separately).Contractor has to make his own arrangement for potable water for construction/curing with hessian cloth, etc. & will not be paid separately. Beam Size:	10.00	RMT	805.00	8050.00
24	R2-RW-10-11	Cutting of construction & dummy joints of M-35 C.C.& above slab by mechanical means within 10 to 16 hrs.of casting of bay/slab as directed. A) transverse dummy joints 100mm deep or 1/3 thickness of concrete pavement & 6 mm wide	10.00	RMT	59.00	590.00
25	R2-RW-10-12	Cutting of construction & dummy joints of M-35 C.C.& above slab by mechanical means within 10 to 16 hrs.of casting of bay/slab as directed. B) Longitudinal construction joints 100mm deep or 1/3rd thickness of slab & 6 mm wide	10.00	RMT	59.00	590.00
26	R2-RW-10-13	Providing & fixing in position premoulded asphalt filler 12mm thick conforming to I.S. 1838 of 1983 for placing of the expansion joint,around manholes & waterentrances, etc put to the required depth & 25mm below the camber,etc. complete as directed.	10.00	SqM	352.00	3520.00
27	R2-RW-10-14	Providing & placing 5 mm thick thermocol in dummy & construction joints immediately after cutting of joints & removing the same before dressing of dummy & construction joints etc. complete, as directed	5.00	SqM	76.00	380.00
28	R2-RW-10-15	Providing & fixing high density polythene pipe of approved quality to fit around the dowel bars of 32mm dia at the end of expansion joints, fully greased inside, cotton waste the pipe around the dowel bars & the pipe duly capped at the end as directed.(H.D.P. pipe shall be 30cm in length) As shown in the drawing.	35.00	Each	31.00	1085.00
29	R2-RW-10-16	Providing & fixing in position mild steel in tie bars of 12mm dia 55cm long & 45cm C/C whenever directed including handling , wrapping with paper for half length,fixing straightening, wastage etc. complete in all respect as directed.	0.10	MT	63226.00	6322.60
30	R2-RW-10-17	Providing & fixing in position M.S. dowel bars of 32mm dia 55cm long & 30cm C/C whenever directed including handling, fixing, etc. complete(no extra payment will be made for applying bitumen & grease to dowel bars).	0.20	MT	62904.00	12580.80

31	R2-RW-10-19	Providing & constructing cement vatas in c/m 1:10 at 0.6m * 0.6mc/c admeasuring 0.09m at bottom, 0.04m at top & 0.075m deep & maintaining the same throughout 14 days curing & removing the same thereafter as directed.	25.00	SqM	78.00	1950.00
32	R2-RW-10-23	Dressing of M-35 & above new C.C.pavement,dummy,transverse, longitudinal & expansion joints with hot rubberised sealing compound confirming to IS 1834-1984 after proper cleaning with compressed air,applying required primer & providinga layer of lime powder over hot sealing compound etc. complete as directed.A) Sealing 6mm wide dummy/transverse joints with a depth of 100mm/1/3rd thickness of concrete pavement.	10.00	Rmt	92.00	920.00
33	R2-RW-10-24	Dressing of M-35 & above new C.C.pavement,dummy,transverse, longitudinal & expansion joints with hot rubberised sealing compound confirming to IS 1834-1984 after proper cleaning with compressed air,applying required primer & providinga layer of lime powder over hot sealing compound etc. complete as directed.B) Sealing of 6mm wide longitudinal joint with depth of 100mm or 1/3rd thickness of concrete pavement.	10.00	Rmt	92.00	920.00
34	R2-RW-10-25	Dressing of M-35 & above new C.C.pavement,dummy,transverse, longitudinal & expansion joints with hot rubberised sealing compound confirming to IS 1834-1984 after proper cleaning with compressed air,applying required primer & providinga layer of lime powder over hot sealing compound etc. complete as directed.C) Sealing of 25mm wide expansion joints with avg. depth of 12mm.	40.00	Rmt	60.00	2400.00
35	R2-SE-13-3	Excavation to form horizontal bore manually for installing 1200mm(ID) RCC sewer line by pipe jacking method for maximum drive length of 30 m, to correct grade and alignment in any type of strata including marshy land, soft clay, murum, rock and/ or boulders of any strength and hardness. Item includes dewatering, safety arrangements, ventilation in bore etc. but excluding muck disposal from shaft site complete as per specifications and as directed by the Engineer.	15.00	mtr	66582.00	998730.00
36	R2-SE-13-2-C	Approved 1200mm diameter reinforced concrete pipe conforming to jacking pipe standards like JSWAS A-6, ASTM C-76 SS 183 or AS 1342 but not less than NP4 class under IS 458; supplied, jointed and installed to correct line and grade by pipe jacking works etc. complete as per specifications and as directed by the Engineer	15.00	mtr	46641.00	699615.00
Total Estimated cost =					Rs.	7860379.40
Say					Rs.	78,60,380.00
sd/-		sd/-		sd/-		
S.E.(S.P.)P&D, ES		A.E.(S.P.)P&D, ES		E.E.(S.P.)P&D, ES		