



AURANGABAD MUNICIPAL CORPORATION.

(From No.52)

Measurement Book

Name of work:- Development of Underground Sewerage Collection system for Zone I to VI and Zone Salim Ali. Constructing, Erecting, Testing and Commissioning of Sewage Treatment Plant based on modern technology at Nakshtrawadi (Kanchanwadi), Banewadi, Siddharth Garden, Zalata, Padegaon, CIDCO (Airport), Construction, Erection, Testing and Commission of Sewage pumping stations at Banewadi, Siddharth Garden, Padegaon, Golwadi, Zalata, Ward No.98 and CIDCO (Airport). Providing, lowering, laying jointing and testing rising main GRP/DI pipe line from Golwadi SPS to Nakshtrawadi (Kanchanwadi) STP and Ward No.98 to

Book No. :-

Page No. : 083

11th RTO Office Quantity Node Abstract

14th R A BILL MEASUREMENTS

Branch Sewer E AT "RTO Office Back Side to Railway Station"

SR NO	Description	MB/PG	ITEM 1		ITEM 2		ITEM 4		ITEM 7	ITEM 11	ITEM 12			
			0-1.5	1.5-3.0	0-1.5	1.5-3.0	0-1.5	1.5-3.0			160mm	200mm	250mm	315mm
1	For Pipe		499.837	6.248	147.404	142.012	62.810	125.936	70.532	139.552	1.500	4.500	15.600	92.900
2	For Manhole		100.961	-	40.155	24.595	10.837	33.596		66.472				
	Total		600.798	6.248	187.559	166.607	73.647	159.532	70.532	206.024	1.500	4.500	15.600	92.900



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ANGABAD MUNICIPAL CORPORATION.

(From No.52)

Measurement Book

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Name of work:- Development of Underground Sewerage Collection system for Zone I to VI and Zone Salim Ali. Constructing, Erecting, Testing and Commissioning of Sewage Treatment Plant based on modern technology at Nakshirawadi (Kanchanwadi), Banewadi, Siddharth Garden, Zalta, Padegaon, CIDCO (Airport). Construction, Erection, Testing and Commission of Sewage pumping stations at Banewadi, Siddharth Garden, Padegaon, Golwadi, Zalta, Ward No 98 and CIDCO (Airport). Providing, lowering, laying jointing and testing rising main

11th RTO Office Quantity Node Abstract

12th R A BILL MEASUREMENTS

Branch Sewer E AT "RTO Office Back Side to Railway Station"

SR NO	Description	MB/PG	ITEM 13				ITEM 17	ITEM 21	ITEM 21.1	ITEM 22	ITEM 22.1	ITEM 23	ITEM 23.1	ITEM 30	EIRL 2		EIRL 2.a
			160mm	200mm	250mm	315mm									400mm	upto 2 m	
1	For Pipe		1.500	4.500	15.600	92.900	275.000							853.94			
2	For Manhole							8.000	(0.800)			3.00	(14.160)	143.673	10.000	(13.000)	
	Total		1.500	4.500	15.600	92.900	275.000	8.000	-0.800	0.000	0.000	3.000	-14.160	997.617	10.000	-13.000	



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Name of work:- Development of Underground Sewerage Collection system for Zone I to VI and Zone Salim Ali, Constructing, Erecting, Testing and Commissioning of Sewage Treatment Plant based on modern technology at Nakshtrawadi (Kanchanwadi), Banewadi, Siddharth Garden, Zalta, Padegaon, CIDCO (Airport), Construction, Erection, Testing and Commission of Sewage pumping stations at Banewadi, Siddharth Garden, Padegaon, Golwadi, Zalta, Ward No. 09 and CIDCO (Airport). Providing, lowering, laying jointing and testing rising main

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RTO Office to Mayor House 250mm-MB

11th RA BILL MEASUREMENTS

RTO Office to Mayor House

Date	Particulars of work	DETAILS						Content of area	Last measurement		TOTAL TO DATE
		No							Page	Quantity	
		GL	IL	EX.L	L	B	D				
	RCC 250mm Dia										
	Width of Trench -										
	For Bottom Lift 0.00-1.50m- 0.25+0.06+0.06+0.5=0.87m										
	From Bottom Lift 1.50m-3.00m- 0.25+0.06+0.06+0.5+0.4=1.27m										
	From Bottom Lift 3.00m-4.50m- 0.25+0.06+0.06+0.5+0.4+0.4 = 1.67m										
	E19.12.1										
	CH0.00	558.990	556.440	556.240							
	CH21.20	558.890	556.890	556.690			2.75				
	Item No. 1 :- Excavation for foundation/pipe trenches in all types of soil & soft murum etc complete.						2.20	2.475			
	(a) For Lift 0 to 1.5m	1			18.500	1.270	1.500	35.243			
	(b) For Lift 1.5m to 3.0m	1			18.500	0.870	0.000	0.000	0.000	35.243	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murum etc complete.										
	(b) For Lift 1.5m to 3.0m	1			18.500	0.870	0.975	15.693	0.000	15.693	
	Item No. 7 :- Filling in plinth and floors/ trenches etc complete.(bedding)	1			18.500	0.870	0.200	3.219	0.000	3.219	
	Item No. : 11 Transportation of earth Transportation charges including loading & unloading excavated							4.615	0.000	4.615	
	Extra item no.:-9.4 b) Lowering & Laying RCC NP3 class pipe of 250mm Dia	1			20.000			20.000	0.000	20.000	
	Item No 30 :- Refilling the excavated trenches ...										
	Total Excavation = A							50.935			
	Deduction										
	pipe area	1		0.785	18.500	0.310	0.310	1.396			
	soling							0.000			
	PCC							0.000			
	Murum bedding							3.219			
	Total = B							4.615			
								Net Qty = A - B			
	E19.12.2							46.321	0.000	46.321	
	CH21.20	558.890	556.890	556.690			2.20				
	CH56.40	559.340	557.390	557.190			2.15	2.175			
	Item No. 1 :- Excavation for foundation/pipe trenches in all types of soil & soft murum etc complete.										
	(a) For Lift 0 to 1.5m	1			32.500	1.270	1.175	48.498	35.243	83.741	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murum etc complete.										
	(a) For Lift 0 to 1.5m	1			32.500	1.270	0.225	9.287	0.000	9.287	
	(b) For Lift 1.5m to 3.0m	1			32.500	0.870	0.675	19.086	15.693	34.778	
	Item No. 4:- Excavation for foundation/pipe trenches in soft rock etc complete.										



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AURANGABAD MUNICIPAL CORPORATION.

(From No.52)

Measurement Book

Name of work:- Development of Underground Sewerage Collection system for Zone I to VI and Zone Salam Ah, Constructing, Erecting, Testing and Commissioning of Sewage Treatment Plant based on modern technology at Nakshirawadi (Kanchanwadi), Banewadi, Siddharth Garden, Zalta, Padegaon, CIDCO (Airport), Construction, Erection, Testing and Commission of Sewage pumping stations at Banewadi, Siddharth Garden, Padegaon, Golwadi, Zalta, Ward No.98 and CIDCO (Airport), Providing, lowering, laying jointing and testing rising main

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RTO Office to Mayor House 250mm-MB

Date	Particulars of work	DETAILS						Content of area	Last measurement		TOTAL TO DATE
		GL	No IL	EX.L	L	B	D		Page	Quantity	
	(a) For Lift 0 to 1.5m	1			32.500	1.270	0.100	4.128		0.000	4.128
	Item No. 7 :- Filling in plinth and floors/ trenches etc complete.(bedding)	1			32.500	0.870	0.200	5.655		3.219	8.874
	Item No. : 11 Transportation of earth Transportation charges including loading & unloading excavated							8.107		4.615	12.721
	Extra item no.-9.4 b) Lowering & Laying RCC NP3 class pipe of 250mm Dia	1			34.000			34.000		20.000	54.000
	Item No 30 :- Refilling the excavated trenches ...										
	Total Excavation = A							80.998			
	Deduction										
	pipe area	1		0.785	32.500	0.310	0.310	2.452			
	soling							0.000			
	PCC							0.000			
	Murram bedding							5.655			
	Total = B							8.107			
					Net Qty = A - B			72.891		46.321	119.212
	E19.12.3										
	CH56.40	559.340	557.390	557.190			2.15	2.095			
	CH99.00	559.907	558.068	557.868			2.04				
	Item No. 1 :- Excavation for foundation/pipe trenches in all types of soil & soft murram etc complete.										
	(a) For Lift 0 to 1.5m	1			41.250	1.270	1.195	62.603		83.741	146.344
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murram etc complete.										
	(a) For Lift 0 to 1.5m	1			41.250	1.270	0.205	10.739		9.287	20.026
	(b) For Lift 1.5m to 3.0m	1			41.250	0.870	0.595	21.353		34.778	56.131
	Item No. 4:- Excavation for foundation/pipe trenches in soft rock etc complete.										
	(a) For Lift 0 to 1.5m	1			41.250	1.270	0.100	5.239		4.128	9.366
	Item No. 7 :- Filling in plinth and floors/ trenches etc complete.(bedding)	1			41.250	0.870	0.200	7.178		8.874	16.052
	Item No. : 11 Transportation of earth Transportation charges including loading & unloading excavated							10.289		12.721	23.011
	Extra item no.-9.4 b) Lowering & Laying RCC NP3 class pipe of 250mm Dia	1			42.000			42.000		54.000	96.000
	Item No 30 :- Refilling the excavated trenches ...										
	Total Excavation = A							99.916			
	Deduction										
	pipe area	1		0.785	41.250	0.310	0.310	3.112			
	soling							0.000			
	PCC							0.000			
	Murram bedding							7.178			
	Total = B							10.289			
					Net Qty = A - B			89.627		119.212	208.839
	DWC - 250mm Dia										
	Width of Trench - For Lift 0 to 1.50m-0.25+0.5=0.75m										



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RTO Office to Mayor House 250mm-MB

Date	Particulars of work	DETAILS						Content of area	Last measurement		TOTAL TO DATE
		No			L	B	D		Page	Quantity	
		GL	IL	EX.L							
	For Lift 1.5 to 3.00m- 0.25+0.5+0.4=1.15m										
	For Lift 3.0 to 4.5m- 0.25+0.5+0.4+0.4=1.55m										
	E19.12.3A										
	CH99.00	559.907	558.068	557.968				1.939			
	CH114.00	560.110	558.310	558.210				1.900	1.920		
	Item No. 1 :- Excavation for foundation/pipe trenches in earth										
	(a) For Lift 0 to 1.5m	1			12.750	1.150	1.020	14.956		146.344	161.299
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			12.750	1.150	0.380	5.572		20.026	25.598
	(b) For Lift 1.5 to 3.0m	1			12.750	0.750	0.420	4.016		56.131	60.148
	Item No. 4 :- Excavation for foundation/pipe trenches in soft rock etc complete.										
	(a) For Lift 0 to 1.5m	1			12.750	1.150	0.100	1.466		9.366	10.833
	Item No. 7 :- Filling in plinth and floors/ trenches etc complete.(bedding)	1			13.250	0.750	0.100	0.994		16.052	17.045
	Item No. : 11 Transportation of earth Transportation charges including loading & unloading excavated							1.644		23.011	24.655
	Item No. 13 :- (c)Lowering & Laying of DWC pipe of 250mm Dia	1			13.500				13.500	0.000	13.500
	Item No. 30 :- Refilling the excavated trenches ...							26.005			
	Total Excavation=										
	Deduction of 250mm dia pipe pipe area	1.00			0.785	13.250	0.250	0.250	0.65		
	soling								0.00		
	PCC								0.99		
	Murrum bedding								1.64		
									24.361	208.839	233.200
	Net Qty = A - B										
	E19.12.4 TO E19.12.5										
	CH114.00	560.110	558.310	558.210				1.900	1.800		
	CH146.00	559.990	558.390	558.290				1.700			
	Item No. 1 :- Excavation for foundation/pipe trenches in earth										
	(a) For Lift 0 to 1.5m	1			29.300	1.150	0.900	30.326		161.299	191.625
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			29.300	1.150	0.500	16.848		25.598	42.446
	(b) For Lift 1.5 to 3.0m	1			29.300	0.750	0.300	6.593		60.148	66.740
	Item No. 4 :- Excavation for foundation/pipe trenches in soft rock etc complete.										
	(a) For Lift 0 to 1.5m	1			29.300	1.150	0.100	3.370		10.833	14.202
	Item No. 7 :- Filling in plinth and floors/ trenches etc complete.(bedding)	1			30.300	0.750	0.100	2.273		17.045	19.318
	Item No. : 11 Transportation of earth Transportation charges including loading & unloading excavated							3.759		24.655	28.414



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RTO Office to Mayor House Chamber Measurement

11th R-BILL MEASUREMENTS OF CHAMBERS RTO Office to Mayor House

Date	Particulars of work	DETAILS						Content of arrears	Last measurement		Total Upto Date Quantity
		No			L	B	D		Page	Quantity	
		GL	IL	EX.L							
	Excavation of Chamber - For 1.20 dia chamber (upto 2.0m depth)-1.20+0.50+0.5+0.5=2.7m										
	Area for chamber upto 2m=2.7*2.7=7.29m										
	E19.12.1										
	CH0.00	558.990	556.440	556.190			2.800				
	Item No. 1 :- Excavation for foundation/pipe trenches in earth soils, Soft murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	7.290	1.500	8.584	0.000	8.584	
	(b) For Lift 1.5m to 3.0m	1			0.785	7.290	0.300	1.717	0.000	1.717	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(b) For Lift 1.5m to 3.0m	1			0.785	7.290	0.200	1.145	0.000	1.145	
	(c) For Lift 3.0m to 4.5m	1			0.785	7.290	0.800	4.578	0.000	4.578	
	Item No. : 11 Transportation of earth Transportation charges including loading & unloading							4.220	0.000	4.220	
	Item No. 30 :- Refilling the excavated trenches ...										
	Total Excavation(A)=							16.023			
	Deduction										
	Brick work	1.000		0.785	1.310	1.310	2.550	3.435			
	soiling							0.000			
	PCC	1.000		0.785	2.000	2.000	0.250	0.785			
	Murrum bedding							0.000			
	Total (B)							4.220			
	Net Qty = A - B							11.803	0.000	11.803	
	E19.12.2										
	CH21.20	558.890	556.890	556.640			2.250				
	Item No. 1 :- Excavation for foundation/pipe trenches in earth soils, Soft murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	7.290	1.200	6.867	8.584	15.451	
	(b) For Lift 1.5m to 3.0m	1			0.785	7.290	0.050	0.286	1.717	2.003	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	7.290	0.200	1.145	0.000	1.145	
	(b) For Lift 1.5m to 3.0m	1			0.785	7.290	0.700	4.006	1.145	5.150	
	Item No. 4 :- Excavation for foundation/pipe trenches in soft rock etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	7.290	0.100	0.572	0.000	0.572	
	Item No. : 11 Transportation of earth Transportation charges including loading & unloading							3.479	4.220	7.699	
	Item No. 30 :- Refilling the excavated trenches ...										
	Total Excavation(A)=							12.876			
	Deduction										



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RTO Office to Mayor House Chamber Measurement

Date	Particulars of work	DETAILS						Content of arrears	Last measurement		Total Upto Date Quantity
		No			L	B	D		Page	Quantity	
		GL	IL	EX.L							
	Brick work	1.000		0.785	1.310	1.310	2.000	2.694			
	soling							0.000			
	PCC	1.000		0.785	2.000	2.000	0.250	0.785			
	Murrum bedding							0.000			
	Total (B)							3.479			
	E19.12.3	Net Qty = A - B						9.397	11.803	21.200	
	CH56.40	559.340	557.390	557.140			2.200				
	Item No. 1 :- Excavation for foundation/pipe trenches in earth soils, Soft murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	7.290	1.200	6.867	15.451	22.318	
	(b) For Lift 1.5m to 3.0m	1			0.785	7.290	0.100	0.572	2.003	2.575	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	7.290	0.200	1.145	1.145	2.289	
	(b) For Lift 1.5m to 3.0m	1			0.785	7.290	0.600	3.434	5.150	8.584	
	Item No. 4 :- Excavation for foundation/pipe trenches in soft rock etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	7.290	0.100	0.572	0.572	1.145	
	Item No. : 11 Transportation of earth Transportation charges including loading & unloading							3.412	7.699	11.114	
	Item No. 30 :- Refilling the excavated trenches ...										
	Total Excavation(A)=							12.590			
	Deduction										
	Brick work	1.000		0.785	1.310	1.310	1.950	2.627			
	soling							0.000			
	PCC	1.000		0.785	2.000	2.000	0.250	0.785			
	Murrum bedding							0.000			
	Total (B)							3.412			
	E19.12.4	Net Qty = A - B						9.178	21.200	30.378	
	CH114.00	560.110	558.310	558.060			2.050				
	Item No. 1 :- Excavation for foundation/pipe trenches in earth soils, Soft murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	7.290	1.150	6.581	22.318	28.899	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	7.290	0.250	1.431	2.289	3.720	
	(b) For Lift 1.5m to 3.0m	1			0.785	7.290	0.550	3.147	8.584	11.731	
	Item No. 4 :- Excavation for foundation/pipe trenches in soft rock etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	7.290	0.100	0.572	1.145	1.712	
	Item No. : 11 Transportation of earth Transportation charges including loading & unloading							3.210	11.111	14.321	
	Item No. 30 :- Refilling the excavated trenches ...										
	Total Excavation(A)=							11.731			
	Deduction										



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RTO Office to Mayor House Chamber Measurement

Date	Particulars of work	DETAILS						Content of arrears	Last measurement		Total Upto Date Quantity
		No			L	B	D		Page	Quantity	
		GL	IL	EX.L							
	Brick work	1.000		0.785	1.310	1.310	1.800	2.425			
	soling							0.000			
	PCC	1.000		0.785	2.000	2.000	0.250	0.785			
	Murram bedding							0.000			
	Total (B)							3.210			
		Net Qty = A - B								30.378	38.899
	E19.12.5										
	CH146.00	559.990	558.390	558.140			1.850				
	Item No. 1 :- Excavation for foundation/pipe trenches in earth soils, Soft murram etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	7.290	0.950	5.437		28.899	34.336
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murram etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	7.290	0.450	2.575		3.720	6.295
	(b) For Lift 1.5m to 3.0m	1			0.785	7.290	0.350	2.003		11.731	13.734
	Item No. 4 :- Excavation for foundation/pipe trenches in soft rock etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	7.290	0.100	0.572		1.717	2.289
	Item No. : 11 Transportation of earth Transportation charges including loading & unloading							2.940		14.321	17.262
	Item No. 30 :- Refilling the excavated trenches ...										
	Total Excavation(A)=							10.587			
	Deduction										
	Brick work	1.000		0.785	1.310	1.310	1.600	2.155			
	soling							0.000			
	PCC	1.000		0.785	2.000	2.000	0.250	0.785			
	Murram bedding							0.000			
	Total (B)							2.940			
		Net Qty = A - B								38.899	46.546
	Excavation of Chamber - For 0.9 mt.dia chamber up to Depth of 1.5 mt.-0.9+0.5+0.3+0.3=2.0m										
	Area for chamber up to Depth of 1.5m= 2 * 2=4m										
	E19.12.3A										
	CH99.00	559.907	558.068	557.818			2.089				
	Item No. 1 :- Excavation for foundation/pipe trenches in earth soils, Soft murram etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	4.000	1.189	3.733		34.336	38.069
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murram etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	4.000	0.211	0.663		6.295	6.957
	(b) For Lift 1.5m to 3.0m	1			0.785	4.000	0.589	1.849		13.734	15.584
	Item No. 4 :- Excavation for foundation/pipe trenches in soft rock etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	4.000	0.100	0.314		2.289	2.603



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AURANGABAD MUNICIPAL CORPORATION.

(From No.52)

Measurement Book

Name of work:- Development of Underground Sewerage Collection system for Zone I to VI and Zone Salim Ah, Constructing, Erecting, Testing and Commissioning of Sewage Treatment Plant based on modern technology at Nakshtrawadi (Kanchanwadi), Banewadi, Siddharth Garden, Zalta, Padegaon, CIDCO (Airport), Construction, Erection, Testing and Commission of Sewage pumping stations at Banewadi, Siddharth Garden, Padegaon, Golwadi, Zalta, Ward No.98 and CIDCO (Airport), Providing, lowering, laying jointing and testing rising main GRP DI pipe line from Golwadi SPS to Nakshtrawadi (Kanchanwadi) STP and Ward No.98 to ...

Book No. :- 092
Page No. :-

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RTO Office to Mayor House Chamber Measurement

Date	Particulars of work	DETAILS						Content of arrears	Last measurement		Total Upto Date Quantity
		No			L	B	D		Page	Quantity	
		GL	IL	EX.L							
	Item No. : 11 Transportation of earth Transportation charges including loading & unloading							2.420		17.262	19.682
	Item No. 30 :- Refilling the excavated trenches ...										
	Total Excavation(A)=							6.559			
	Deduction										
	Brick work	1.000		0.785	1.16	1.16	1.839	1.943			
	soling							0.000			
	PCC	1.000		0.785	1.56	1.56	0.250	0.478			
	Murrum bedding							0.000			
	Total (B)							2.420			
					Net Qty = A - B			4.139		46.546	50.685
	E19.12.4.1										
	CH14.00	560.090	558.590	558.340			1.750				
	Item No. 1 :- Excavation for foundation/pipe trenches in earth soils, Soft murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	4.000	1.500	4.710		38.069	42.779
	(b) For Lift 1.5m to 3.0m	1			0.785	4.000	0.250	0.785		2.575	3.360
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	4.000	0.000	0.000		6.957	6.957
	(b) For Lift 1.5m to 3.0m	1			0.785	4.000	0.000	0.000		15.584	15.584
	(c) For Lift 3.0m to 4.5m	1			0.785	4.000	0.000	0.000		4.578	4.578
	Item No. 4 :- Excavation for foundation/pipe trenches in soft rock etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	4.000	0.000	0.000		2.603	2.603
	Item No. : 11 Transportation of earth Transportation charges including loading & unloading							2.062		19.682	21.744
	Item No. 30 :- Refilling the excavated trenches ...										
	Total Excavation(A)=							5.495			
	Deduction										
	Brick work	1.000		0.785	1.16	1.16	1.500	1.584			
	soling							0.000			
	PCC	1.000		0.785	1.56	1.56	0.250	0.478			
	Murrum bedding							0.000			
	Total (B)							2.062			
					Net Qty = A - B			3.433		50.685	54.118



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AURANGABAD MUNICIPAL CORPORATION.

(From No.52)

Measurement Book

Name of work:- Development of Underground Sewerage Collection system for Zone I to VI and Zone Salim Ali, Constructing, Erecting, Testing and Commissioning of Sewage Treatment Plant based on modern technology at Nakshtrawadi (Kanchanwadi), Banewadi, Siddharth Garden, Zalta, Padegaon, CIDCO (Airport), Construction, Erection, Testing and Commission of Sewage pumping stations at Banewadi, Siddharth Garden, Padegaon, Golwadi, Zalta, Ward No.98 and CIDCO (Airport), Providing, lowering, laying jointing and testing rising main GRP/DI pipe line from Golwadi SPS to Nakshtrawadi (Kanchanwadi) STP and Ward No.98 to STP for Aurangabad City.

Book No. :-
Page No. :- **093**

Name of Agency:- M/s Khilari Infrastructure Pvt.Ltd. & GECPL (Joint Venture)

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RTO Office to Mayor House CHAMBER

12th R A BILL MEASUREMENTS CHAMBER RTO Office to Mayor House

SR NO	CHAMBER NUMBER	DETAILS			Rebate up to		Total Rebate Qty for 50 cm
		No			Depth of 2.0 mtr		
		GL	IL	DEPTH	For per 50 cm		
A	Item No. : 21 Providing and constructing on sewer.BBM manhole 1.2 m dia at bottom and 0.5 m dia at top and up to a depth of 2.0 M etc., complete						
1	E19.12.1	558.990	556.440	2.550	2	0.550	-0.2
2	E19.12.2	558.890	556.890	2.000	2	0.000	
3	E19.12.3	559.340	557.390	1.950	2	-0.050	
4	E19.12.4	560.110	558.310	1.800	2	-0.200	
5	E19.12.5	559.990	558.390	1.600	2	-0.400	
	Total					-0.100	-0.2
SR NO	CHAMBER NUMBER	DETAILS			Rebate up to		Total Rebate Qty for 30 cm
		No			Depth of 1.5 mtr		
		GL	IL	DEPTH	For per 30 cm		
B	Extra Item No 2: Providing and constructing on sewer.BBM manhole 0.9 m dia at bottom and 0.5 m dia at top and up to a depth of 1.5 M etc., complete						
1	E19.12.3A	559.907	558.068	1.839	1.500	0.34	1.13
2	E19.12.4.1	560.090	558.590	1.500	1.500	0.00	1.13
						0.34	1.13



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JRANGABAD MUNICIPAL CORPORATION,
(From No.52)

Measurement Book

Book No. :-

094

Page No. :-

Name of work:- Development of Underground Sewerage Collection system for Zone I to VI and Zone Salim Ali. Constructing, Erecting, Testing and Commissioning of Sewage Treatment Plant based on modern technology at Nakshrawadi (Kanehanwadi), Banewadi, Siddharth Garden, Zalta, Padegaon, CIDCO (Airport), Construction, Erection, Testing and Commissioning of Sewage pumping stations at Banewadi, Siddharth Garden, Padegaon, Golwadi, Zalta, Ward No.98 and CIDCO (Airport). Providing, lowering, laying jointing and testing rising main

RTO Office to Mayor House Quantity Node Abstract

14th R A BILL MEASUREMENTS

Branch Sewer RTO Office to Mayor House

SR NO	Description	ITEM 1		ITEM 2		ITEM 4	ITEM 7	ITEM 11	ITEM 12 250mm	ITEM 13 250mm	ITEM 21 upto 2 m Full Rate	ITEM 21.1 Rebate		ITEM 30	ITEM 35	EIRL 2		EIRL 2.a Rebate	EIRL 9.3 250mm RCC Pipes		EIRL 9.4 250mm	
		0-1.5	1.5-3.0	0-1.5	1.5-3.0							0-1.5	3.0-4.5			Full Rate	(0.200)		Full Rate	(0.200)		Full Rate
1	For Pipe	211.721	2.162	42.446	66.740	14.202	20.252	29.958	57.250	57.250	5.000			307.31	0.155		2.000	1.130		96.000	96.000	
2	For Manhole	42.779	3.360	6.957	15.584	2.603		21.744			5.000	(0.200)	54.118			2.000						
	Total	254.501	5.522	49.403	82.324	16.805	20.252	51.702	57.250	57.250	5.000	(0.200)	361.43	0.155		2.000	1.130		96.000	96.000		96.000

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Total up to Date
10



AURANGABAD MUNICIPAL CORPORATION.

(From No.52)

Measurement Book

Name of work:- Development of Underground Sewerage Collection system for Zone I to VI and Zone Salim Ali. Constructing, Erecting, Testing and Commissioning of Sewage Treatment Plant based on modern technology at Nakshtrawadi (Kanchanwadi), Banewadi, Siddharth Garden, Zalta, Padegaon, CIDCO (Airport), Construction, Erection, Testing and Commission of Sewage pumping stations at Banewadi, Siddharth Garden, Padegaon, Golwadi, Zalta, Ward No.98 and CIDCO (Airport), Providing, lowering, laying jointing and testing rising main GRP/DI pipe line from Golwadi SPS to Nakshtrawadi (Kanchanwadi) STP and Ward No.98 to STP for Aurangabad City.

Book No. :-

Page No. :- 095

N **Contractor:-** M/s. Khilari Infrastructure Pvt Ltd & GECPL (Joint Venture)

A 1 of 1

Sewer at Vits Hotel, Shahu Nagar, Kokanwadi Chowk and Railway Bridge Near Jain International School - Mease. DWC Pipe

17th RA BILL MEASUREMENTS PIPE SHAHUNAGAR INFRONT OF GARDEN

Date	Particulars of work	DETAILS						Content of arrears	Last measurement		Total Upto Date Quantity
		No			L	B	D		Page	Qty.	
GL	IL	EX.L									
	DWC PIPE - 315 mm Dia										
	Width of Trench -										
	For Lift 0 to 1.50m- 0.315+0.5=0.815m										
	For Lift 1.5 to 3.00m- 0.315+0.5+0.4=1.215m										
	For Lift 3.0 to 4.5m- 0.315+0.5+0.4+0.4=1.615m										
	Old MH to MH 1										
	CH0.00	565.515	564.045	563.945			1.570	1.500			
	CH9.30	565.665	564.335	564.235			1.430				
	Item No. 1 :- Excavation for foundation/pipe trenches in earth soils, Soft murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			7.600	0.815	1.500	9.291	0.000	9.291	
	Item No. 7 :- Filling in plinth and floors/ trenches etc complete.(bedding)	1			7.900	0.815	0.100	0.644	0.000	0.644	
	Item No. : 11 Transportation of earth Transportation charges including loading & unloading							1.259	0.000	1.259	
	Item 13 (d) :-Lowering & Laying of Polyethylene DWC pipe of 315mm Dia	1			8.400			8.400	0.000	8.400	
	Item No. 30 :- Refilling the excavated trenches ...										
	Total Excavation=							9.291			
	Deduction										
	pipe area	1		0.785	7.900	0.315	0.315	0.615			
	soling							0.000			
	PCC							0.000			
	Murrum bedding							0.644			
								1.259			
	Net Qty = A - B							8.032	0.000	8.032	



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AURANGABAD MUNICIPAL CORPORATION.

(From No.52)

Measurement Book

Name of work:- Development of Underground Sewerage Collection system for Zone I to VI and Zone Salim Ali. Constructing, Erecting, Testing and Commissioning of Sewage Treatment Plant based on modern technology at Nakshtrawadi (Kanchanwadi), Banewadi, Siddharth Garden, Zalta, Padegaon, CIDCO (Airport). Construction, Erection, Testing and Commission of Sewage pumping stations at Banewadi, Siddharth Garden, Padegaon, Golwadi, Zalta, Ward No.98 and CIDCO (Airport). Providing, lowering, laying jointing and testing rising main GRP/DI pipe line from Golwadi SPS to Nakshtrawadi (Kanchanwadi) STP and Ward No.98 to

Book No. :-

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Sewer at Vits Hotel, Shahu Nagar, Kokanwadi Chowk and Railway Bridge Near Jain International School 400mm

12th RA BILL MEASUREMENTS

Branch Sewer at Railway Bridge Near Jain International School

Date	Particulars of work	DETAILS					Content of area	Last measurement		TOTAL TO DATE	
		No			L	B		D	Page		Quantity
		GL	IL	EX.L							
	400mm Dia										
	Width of Trench - For Bottom Lift 0.00-1.50m- 0.4+0.15+0.15+0.5=1.2m										
	From Bottom Lift 1.50m-3.00m- 0.4+0.15+0.15+0.5+0.4=1.6m										
	From Bottom Lift 3.00m-4.50m- 0.4+0.15+0.15+0.5+0.4+0.4=2.0m										
	Nalla to Old MH										
	CH0.00	591.210	590.010	589.810			1.400				
	CH5.60	592.100	590.900	590.700			1.400				
	Item No. 1 :- Excavation for foundation/pipe trenches in all types of soil & soft murum etc complete.										
	(a) For Lift 0 to 1.5m	1			4.750	1.200	1.400	7.980		9.291	17.271
	Item No. 7 :- Filling in plinth and floors/ trenches etc complete.(bedding)	1			4.750	1.200	0.200	1.140		0.644	1.784
	Item No. : 11 Transportation of earth Transportation charges including loading & unloading							2.268		1.259	3.527
	Item No.17 (a) :- Lowering & Laying RCC NP3 class pipe of 400mm Dia	1			5.000			5.000		0.000	5.000
	Item No 30 :- Refilling the excavated trenches ...										
	Total Excavation= A							7.980			
	Deduction										
	pipe area	1		0.785	4.750	0.550	0.550	1.128			
	soling							0.000			
	PCC							0.000			
	Murum bedding							1.140			
	Total = B							2.268			
	Net Qty = A - B							5.712		8.032	13.744



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AURANGABAD MUNICIPAL CORPORATION.

(From No.52)

Measurement Book

Name of work:- Development of Underground Sewerage Collection system for Zone I to VI and Zone Salim Ali. Constructing. Erecting. Testing and Commissioning of Sewage Treatment Plant based on modern technology at Nakshtrawadi (Kanchanwadi). Banewadi, Siddharth Garden, Zalta, Padegaon. CIDCO (Airport). Construction, Erection, Testing and Commission of Sewage pumping stations at Banewadi, Siddharth Garden, Padegaon, Golwadi, Zalta, Ward No.98 and CIDCO (Airport). Providing, lowering, laying jointing and testing rising main GRP/DI pipe line from Golwadi SPS to Nakshtrawadi (Kanchanwadi) STP and Ward No.98 to STP for Aurangabad City.

Book No. **097**
Page No. :-

Name of Agency:- M/s Khilari Infrastructure Pvt.Ltd. & GECPL (Joint Vencture)

1 of 1

Sewer at Vits Hotel, Shahu Nagar, Kokanwadi Chowk and Railway Bridge Near Jain International School - 0.9 MH Exc.

14th R A BILL MEASUREMENTS OF CHAMBERS KOKANWADI CHOWK

Date	Particulars of work	DETAILS					Content of arrears	Last measurement		Total Upto Date Quantity	
		No			L	B		D	Page		Qty.
		GL	IL	EX.L							
	Excavation of Chamber - For 0.9 dia chamber up to 1.5 mt depth - 0.9+0.5+0.3+0.3=2m										
	Bredth for chember up to 1.5m=2 X 2=4m										
	MH 1										
	CH0.00	576.610	575.410	575.160			1.450				
	Item No. 1 :- Excavation for foundation/pipe trenches in earth soils, Soft murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	4.000	1.450	4.553	0.000	4.553	
	Item No. : 11 Transportation of earth Transportation charges							1.859	0.000	1.859	
	Item No. 30 :- Refilling the excavated trenches ...										
	Total Excavation(A)=							4.553			
	Deduction										
	Brick work	1		0.785	1.200	1.200	1.200	1.356			
	soling							0.000			
	PCC	1		0.785	1.600	1.600	0.250	0.502			
	Murrum bedding							0.000			
	Total (B)							1.859			
								Net Qty = A - B			
								2.694	0.000	2.694	



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AURANGABAD MUNICIPAL CORPORATION.

(From No.52)

Measurement Book

Name of work:- Development of Underground Sewerage Collection system for Zone I to VI and Zone Salim Ali. Constructing, Erecting, Testing and Commissioning of Sewage Treatment Plant based on modern technology at Nakshtrawadi (Kanchanwadi), Banewadi, Siddharth Garden, Zalta, Padegaon, CIDCO (Airport), Construction, Erection, Testing and Commission of Sewage pumping stations, at Banewadi, Siddharth Garden, Padegaon, Golwadi, Zalta, Ward No.98 and CIDCO (Airport). Providing, lowering, laying jointing and testing rising main GRP DI pipe line from Golwadi SPS to Nakshtrawadi (Kanchanwadi) STP and Ward No.98 to STP for Aurangabad City.

Book No. :- 098
Page No. :-

Name of Agency:- M/s Khilari Infrastructure Pvt.Ltd. & GECPL (Joint Venture)

1 of 1

Sewer at Vits Hotel, Shahu Nagar, Kokanwadi Chowk and Railway Bridge Near Jain International School - 0.9X0.6 mh eXC.

14th RA BILL MEASUREMENTS OF CHAMBERS SHAHUNAGAR INFRONT OF GARDEN

Date	Particulars of work	DETAILS						Content of arrears	Last measurement		Total Upto Date Quantity
		No			L	B	D		Page	Qty.	
		GL	IL	EX.L							
	Excavation of Chamber - For 0.9X0.6 chamber up to 1.5 mt depth										
	Area for chember up to One Side = $0.9+0.25+0.25+0.3+0.3=2.0$ M										
	Area for chember up to Other Side = $0.6+0.25+0.25+0.3+0.3=1.7$ M										
	MH 1										
	CH0.00	576.610	575.410	575.160			1.450				
	Item No. 1 :- Excavation for foundation/pipe trenches in earth soils, Soft murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			2.000	1.700	1.450	4.930		4.553	9.483
	Item No. : 11 Transportation of earth Transportation charges							1.918		1.859	3.777
	Item No. 30 :- Refilling the excavated trenches ...										
	Total Excavation(A)=							4.930			
	Deduction										
	Brick work	1		0.785	1.400	1.100	1.200	1.451			
	soling							0.000			
	PCC	1		0.785	1.700	1.400	0.250	0.467			
	Murrum bedding							0.000			
	Total (B)							1.918			
	Net Qty = A - B							3.012		2.694	5.706



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AURANGABAD MUNICIPAL CORPORATION.

(From No.52)

Measurement Book

Name of work:- Development of Underground Sewerage Collection system for Zone I to VI and Zone Salim Ali, Constructing, Erecting, Testing and Commissioning of Sewage Treatment Plant based on modern technology at Nakshtrawadi (Kanchanwadi), Banewadi, Siddharth Garden, Zalta, Padegaon, CIDCO (Airport), Construction, Erection, Testing and Commission of Sewage pumping stations at Banewadi, Siddharth Garden, Padegaon, Golwadi, Zalta, Ward No.98 and CIDCO (Airport), Providing, lowering, laying jointing and testing rising main GRP/DI pipe line from Golwadi SPS to Nakshtrawadi (Kanchanwadi) STP and Ward No.98 to STP for Aurangabad City.

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Sewer at Vits Hotel, Shahu Nagar, Kokanwadi Chowk and Railway Bridge Near Jain International School, BBS

14th RA BILL MEASUREMENTS

Scrapper Chamber Infront of Vits Hotel (Bansilalnagar)

Sr. No.	Description	No. of Scrapeers	Dia of Bar	Spacig	Nos	No of members	Total Nos	cut length	Lap length	overall cutting length	8mm (MT)	10mm (MT)	12mm (MT)	16mm (MT)
A Raft														
	# 10 @ 150 C/C/W at T & B													
	Along Long Span (for Middle Span)	1.00	10.00	0.15	13.00	2.00	26.00	4.83	0.00	125.45	0.000	0.078	0.000	0.000
	Along Long Span (for Edge Span)	1.00	10.00	0.15	1.00	2.00	2.00	2.50	0.00	5.00	0.000	0.003	0.000	0.000
	Along Long Span (for Edge Span)	1.00	10.00	0.15	1.00	2.00	2.00	3.84	0.00	7.68	0.000	0.005	0.000	0.000
	Along Long Span (for Edge Span)	1.00	10.00	0.15	1.00	2.00	2.00	1.52	0.00	3.03	0.000	0.002	0.000	0.000
	Along Short Span :- Average Width = $((1.98+2.59)/2)=2.285$	1.00	10.00	0.15	32.00	2.00	64.00	2.39	0.00	152.64	0.000	0.095	0.000	0.000
B Wall														
B.1 Horizontal														
1	For wall 4.72 mtr													
	# 10 @ 150 C/C at both Face for two Walls	1.00	10.00	0.15	36.00	4.00	144.00	4.82	0.00	694.08	0.000	0.430	0.000	0.000
2	For wall 2.59 mtr													
	# 10 @ 150 C/C at both Face for one Wall	1.00	10.00	0.15	36.00	2.00	72.00	2.69	0.00	193.68	0.000	0.120	0.000	0.000
B.2 Vertical														
1	For wall 4.72 mtr													
	# 10 @ 150 C/C at both Face for two Walls	2.00	10.00	0.15	32.00	4.00	128.00	5.50	0.00	704.00	0.000	0.435	0.000	0.000
2	For wall 2.59 mtr													
	# 10 @ 150 C/C at both Face for one Wall	1.00	10.00	0.15	18.00	2.00	36.00	5.50	0.00	198.00	0.000	0.123	0.000	0.000
C Top Slab														
	Along Long Span (for Middle Span)	1.00	12.00	0.10	20.00	2.00	40.00	4.83	0.00	193.00	0.000	0.000	0.172	0.000
	Along Long Span (for Edge Span)	1.00	12.00	0.10	2.00	2.00	4.00	3.10	0.00	12.40	0.000	0.000	0.011	0.000
	Along Long Span (for Edge Span)	1.00	12.00	0.10	2.00	2.00	4.00	1.53	0.00	6.10	0.000	0.000	0.005	0.000
	Along Long Span Extra Bars	1.00	16.00	0.30	7.00	2.00	14.00	4.83	0.00	67.55	0.000	0.000	0.000	0.107
	Along Long Span Extra Bars	1.00	16.00	0.30	2.00	2.00	4.00	1.68	0.00	6.72	0.000	0.000	0.000	0.011
	Along Short Span :- Average Width = $((1.98+2.59)/2)=2.285$	1.00	12.00	0.10	48.00	2.00	96.00	2.39	0.00	228.96	0.000	0.000	0.204	0.000
	Along Short Span Extra Bars	1.00	16.00	0.30	16.00	2.00	32.00	2.39	0.00	76.32	0.000	0.000	0.000	0.121
Sub Total											0.000	1.292	0.392	0.238
Total											1.921			





AURANGABAD MUNICIPAL CORPORATION

(From No.52)

Measurement Book

Name of work:- Development of Underground Sewerage Collection system for Zone I to VI and Zone Salim Ali, Constructing, Erecting, Testing and Commissioning of Sewage Treatment Plant based on modern technology at Nakshtrawadi (Kanchanwadi), Banewadi, Siddharth Garden, Zalta, Padegaon, CIDCO (Airport), Construction, Erection, Testing and Commission of Sewage pumping stations at Banewadi, Siddharth Garden, Padegaon, Golwadi, Zalta, Ward No.98 and CIDCO (Airport), Providing, lowering, laying jointing and testing rising main GRP/DI pipe line from Golwadi SPS to Nakshtrawadi (Kanchanwadi) STP and Ward No.98 to STP for Aurangabad City.

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Sewer at Vits Hotel, Shahu Nagar, Kokanwadi Chowk and Railway Bridge Near Jain International School, Scrapper detail

14th RA BILL MEASUREMENTS OF SCRAPPER Scrapper Chamber Infront of Vits Hotel (Bansilalnagar)

Date	Particulars of work		DETAILS				Content of arrears	Last measurement		Total Upto Date Quantity
			No	L	B	D		Page	Quantity	
A										
	ITEM NO. 1 :- Excavation for foundation/pipe trenches in earth soils of all types sand gravel and soft murum, manually or by using mechanical means including & removing the excavated materials, up to a distance of 50.0 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 back filling etc complete.									
	Lift 0.0 m to 1.5 m	Cum	1	6.920	4.790	1.500	49.720		17.271	66.994
	Lift 1.5 m to 3.0 m	Cum	1	6.520	4.390	1.500	42.934		0.000	42.934
	Lift 3.0 m to 4.5 m	Cum	1	6.120	3.990	1.500	36.628		0.000	36.628
	Lift 4.5 m to 6.0 m	Cum	1	5.720	3.590	1.300	26.695		0.000	26.695
B										
	Item No:6									
	Providing and laying in situ Cement Concrete of trap/granite /quartzite/gneiss metal for RCC work in									
	(a) Raft	Cum	1	4.720	1.980	0.150	1.402		0.000	1.402
		Cum	2	2.360	0.305	0.150	0.216		1.402	1.618
	(b) Short Wall	Cum	1	2.590	0.250	5.400	3.497		1.618	5.114
	(c) Long Wall	Cum	2	4.720	0.250	5.400	12.744		5.114	17.858
	(d) cover	Cum	1	4.720	1.980	0.250	2.336		17.858	20.195
		Cum	2	2.360	0.305	0.250	0.360		20.195	20.555
	(A)									20.555
	Deduction of pipes									
	600 dia	2	0.785	0.770	0.770	0.250	0.233		0.000	0.233
	deduction(B)									0.233
	(A-B)									20.322

