



AURANGABAD MUNICIPAL CORPORATION.

(From No.52)

Measurement Book

Name of work:- Development of Underground Sewerage Collection system for Zone I to VI and Zone Sahib 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 600/1200mm pipe line from Golwadi SPS to Nakshtrawadi (Kanchanwadi) STP and Ward No.98 to STP for Aurangabad City.

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Page No. :-

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

Authority No. AMC Ward B&C UIDSSMT/2014/184 Date 01.07.2014

Date of Measurement	Particulars of Work	Details					Last Measurement		Total up to Date
		No.	L	B	D	Contents of Arrears	Page No.	Quantity	

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RA 12 Sewer D Main-1200mm-MB

12th RA BILL MEASUREMENTS

Sewer "D"

Date	Particulars of work	DETAILS						Content of arrears	Last measurement		Total Upto Date Quantity
		No			L	B	D		Page	Quantity	
		GL	IL	EX.L							
	D-Sewer-1200mm Dia										
	1200mm dia (Width of Trench -1.2+0.25+0.25+0.5=2.60m)										
							0.0m to 1.5m	0.0m to 3.0m	0.0m to 4.5m		
	For Width of Trench Calculation Outer dia of Pipe + 0.50 for Bottom and Add 0.4 for Subsequent upper Lifts.						2.600	3.000	3.400		
								2.600	3.000		
									2.600		
	C 15 to D1										
	At Bhoiwada from Scrapper at Sewer C & D Junction										
	CH0.00	556.745	553.760	553.435			3.310	3.823			
27/09/2016	CH13.10/0.00	557.830	553.820	553.495			4.335				
	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			11.500	3.000	1.500	51.750	0.000	51.750	
	(b) For Lift 1.5m to 3.0m	1			11.500	2.600	0.300	8.970	0.000	8.970	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murum etc complete.										
	(b) For Lift 1.5m to 3.0m	1			11.500	2.600	0.500	14.950	0.000	14.950	
	Item No. 4 :- Excavation for foundation/pipe trenches in soft rock etc complete.										
	(b) For Lift 1.5m to 3.0m	1			11.500	2.600	0.500	14.950	0.000	14.950	
	Item No. 5 :- Excavation for foundation/pipe trenches in Hard rock etc complete.										
	(b) For Lift 1.5m to 3.0m	1			11.500	2.600	0.200	5.980	0.000	5.980	
	(c) For Lift 3.0m to 4.5m	1			11.500	2.200	0.823	20.822	0.000	20.822	
	Item No. 7 :- Filling in plinth and floors/ trenches etc complete.(bedding)	1			11.800	2.200	0.200	5.192	0.000	5.192	
	Item No. 17 (j) :- Lowering & Laying RCC NP3 class pipe of 1200mm Dia	1			12.500			12.500	0.000	12.500	
	Item No 30 :- Refilling the excavated trenches										
	Total Excavation= A							117.422			
	Deduction										
	pipe area	1			0.785	11.500	1.450	1.450	18.980		
	Murum bedding							5.192			
	Total = B							24.172			
	Net Qty = A - B							93.250	0.000	93.250	



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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.08 and CIDCO (Airport). Providing lowering, laying, jointing and testing rising main

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RA 1 Sewer D Main-700mm-MB

14th R A BILL MEASUREMENTS

Date	Particulars of work	SEWER "D"					Content of arrears	Last measurement		Total Upto Date Quantity	
		DETAILS			L	B		D	Page		Quantity
		GL	IL	EX.L							
	D-700mm Dia-Kailsh Nagar-Smashan Maruti Mandir										
	700mm dia (Width of Trench -0.70+0.17+0.17+0.5=1.54m)										
	For Width of Trench Calculation	For Depth			0.0m to 1.5m		0.0m to 3.0m	0.0m to 4.5m			
	Outer dia of Pipe + 0.50 for Bottom and Add 0.4 for Subsequent upper Lifts.	For Lift 0.0m to 1.5m			1.540		1.940	2.340			
		For Lift 1.5m to 3.0m					1.540	1.940			
		For Lift 3.0m to 4.5m						1.540			
	No Manhole	30m Gap From D-800 mm Dia Sewer CH.2990.95									
	CH3020.95	580.195	578.370	578.170			2.025				
	CH3039.05	580.285	578.440	578.240			2.045				
	Item No. 1 :- Excavation for foundation/pipe trenches in all types of soil & soft murrum etc										
	(a) For Lift 0 to 1.5m	1			16.65	1.940	1.335	43.122	51.750	94.872	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			16.65	1.940	0.165	5.330	0.000	5.330	
	(b) For Lift 1.5m to 3.0m	1			16.65	1.540	0.035	0.897	14.950	15.847	
	Item No. 4:- Excavation for foundation/pipe trenches in soft rock etc complete.										
	(b) For Lift 1.5m to 3.0m	1			16.65	1.540	0.200	5.128	14.950	20.078	
	Item No. 5 :- Excavation for foundation/pipe trenches in Hard rock etc complete.										
	(b) For Lift 1.5m to 3.0m	1			16.65	1.540	0.300	7.692	5.980	13.672	
	Item No. 7 :- Filling in plinth and floors/ trenches etc	1			17.15	1.540	0.200	5.282	5.192	10.474	
	Item No. 17 (e) :- Lowering & Laying RCC NP3 class pipe of 700mm Dia	1			17.50			17.500	0.000	17.500	
	Item No 30 :- Refilling the excavated trenches ...										
	Total Excavation= A							62.169			
	Deduction										
	pipe area	1		0.785	16.65	0.870	0.870	9.89			
	Murrum bedding							5.28			
	Total = B							15.18			
					Net Qty = A - B			46.99	93.250	140.244	
	D 71										
	CH3039.05	580.285	578.490	578.290			1.995	2.350			
	CH3055.25	581.055	578.550	578.350			2.705				
	Item No. 1 :- Excavation for foundation/pipe trenches in all types of soil & soft murrum etc										
	(a) For Lift 0 to 1.5m	1			13.30	1.940	1.500	38.703	94.872	133.575	
	(b) For Lift 1.5m to 3.0m	1			13.30	1.540	0.150	3.072	8.970	12.042	



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RA 11-Sewer D Main-700mm-MB

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. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(b) For Lift 1.5m to 3.0m	1			13.30	1.540	0.200	4.096		15.847	19.944
	Item No. 4:- Excavation for foundation/pipe trenches in soft rock etc complete.										
	(b) For Lift 1.5m to 3.0m	1			13.30	1.540	0.200	4.096		20.078	24.175
	Item No. 5 :- Excavation for foundation/pipe trenches in Hard rock etc complete.										
	(b) For Lift 1.5m to 3.0m	1			13.30	1.540	0.300	6.145		13.672	19.817
	Item No. 7 :- Filling in plinth and floors/ trenches etc	1			14.30	1.540	0.200	4.404		10.474	14.879
	Item No. 17 (e) :- Lowering & Laying RCC NP3 class pipe of 700mm Dia	1			15.00			15.000		17.500	32.500
	Item No 30 :- Refilling the excavated trenches ...										
	Total Excavation= A							56.113			
	Deduction										
	pipe area	1		0.785	13.30	0.870	0.870	7.90			
	Murrum bedding							4.40			
	Total = B							12.31			
					Net Qty = A - B			43.81		140.244	184.050
	D 72										
	CH3055.25	581.055	578.800	578.600			2.455				
	CH3075.85	581.125	578.880	578.680			2.445	2.450			
	Item No. 1 :- Excavation for foundation/pipe trenches in all types of soil & soft murrum etc										
	(a) For Lift 0 to 1.5m	1			19.15	1.940	1.500	55.726		133.575	189.301
	(b) For Lift 1.5m to 3.0m	1			19.15	1.540	0.450	13.271		12.042	25.313
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(b) For Lift 1.5m to 3.0m	1			19.15	1.540	0.500	14.745		19.944	34.689
	Item No. 7 :- Filling in plinth and floors/ trenches etc	1			19.65	1.540	0.200	6.052		14.879	20.931
	Item No. 17 (e) :- Lowering & Laying RCC NP3 class pipe of 700mm Dia	1			20.00			20.000		32.500	52.500
	Item No 30 :- Refilling the excavated trenches ...										
	Total Excavation= A										
	Deduction							83.743			
	pipe area	1		0.785	19.15	0.870	0.870	11.38			
	Murrum bedding							6.05			
	Total = B							17.43			
					Net Qty = A - B			66.31		184.050	250.362



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RA 136 Sewer D Main-700mm-MB

Date	Particulars of work	DETAILS						Content of arrears	Last measurement		Total Upto Date Quantity	
		No			L	B	D		Page	Quantity		
		GL	IL	EXL								
	CH3075.85											
	CH3100.85	581.125	578.880	578.680			2.445					
		581.435	578.980	578.780			2.655	2.550				
	Item No. 1 :- Excavation for foundation/pipe trenches in all types of soil & soft murrum etc											
	(a) For Lift 0 to 1.5m	1										
	(b) For Lift 1.5m to 3.0m	1			25.00	1.940	1.500	72.750		189.301	262.051	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.									25.313	50.338	
	(b) For Lift 1.5m to 3.0m	1			25.00	1.540	0.650	25.025				
	Item No. 7 :- Filling in plinth and floors/ trenches etc	1			25.00	1.540	0.400	15.400		34.689	50.089	
	Item No. 17 (e) :- Lowering & Laying RCC NP3 class pipe of 700mm Dia	1			25.00			7.700		20.931	28.631	
	Item No 30 :- Refilling the excavated trenches ...							25.000		52.500	77.500	
	Total Excavation= A							113.175				
	Deduction											
	pipe area	1		0.785	25.00	0.870	0.870	14.85				
	Murrum bedding							7.70				
	Total = B							22.55				
								Net Qty = A - B		90.62	250.362	340.983
	CH3100.85	581.435	578.980	578.780			2.655					
	CH3128.95	582.465	579.090	578.890			3.575	3.115				
	Item No. 1 :- Excavation for foundation/pipe trenches in all types of soil & soft murrum etc											
	(a) For Lift 0 to 1.5m	1			26.50	1.940	1.500	77.115		262.051	339.166	
	(b) For Lift 1.5m to 3.0m	1			26.50	1.540	1.312	53.543		50.338	103.881	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.											
	(b) For Lift 1.5m to 3.0m	1			26.50	1.540	0.188	7.672		50.089	57.762	
	(c) For Lift 3.0m to 4.5m	1			26.50	1.540	0.115	4.693		0.000	4.693	
	Item No. 7 :- Filling in plinth and floors/ trenches etc	1			27.00	1.540	0.200	8.316		28.631	36.947	
	Item No. 17 (e) :- Lowering & Laying RCC NP3 class pipe of 700mm Dia	1			27.50			27.500		77.500	105.000	
	Item No 30 :- Refilling the excavated trenches ...											
	Total Excavation= A							143.023				
	Deduction											
	pipe area	1		0.785	26.50	0.870	0.870	15.75				
	Murrum bedding							8.32				
	Total = B							24.06				
								Net Qty = A - B		118.96	340.983	459.945



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RA 12-Sewer D Main-700mm-MB

Date	Particulars of work	DETAILS						Content of arrears	Last measurement		Total Upto Date Quantity
		No			L	B	D		Page	Quantity	
		GL	IL	EX.L							
D 73											
	CH3128.95	582.465	579.090	578.890			3.575	3.638			
	CH3175.15	582.680	579.180	578.980			3.700				
	Item No. 1 :- Excavation for foundation/pipe trenches in all types of soil & soft murum etc										
	(a) For Lift 0 to 1.5m	1			43.00	2.340	1.500	150.930	339.166	490.096	
	(b) For Lift 1.5m to 3.0m	1			43.00	1.940	1.500	125.130	103.881	229.011	
	(c) For Lift 3.0m to 4.5m	1			43.00	1.540	0.100	6.622	0.000	6.622	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murum etc complete.										
	(c) For Lift 3.0m to 4.5m	1			43.00	1.540	0.538	35.626	4.693	40.320	
	Item No. 7 :- Filling in plinth and floors/ trenches etc	1			44.00	1.540	0.200	13.552	36.947	50.499	
	Item No. 17 (e) :- Lowering & Laying RCC NP3 class pipe of 700mm Dia	1			45.00			45.000	105.000	150.000	
	Item No 30 :- Refilling the excavated trenches ...										
	Total Excavation = A							318.308			
	Deduction										
	pipe area	1		0.785	43.00	0.870	0.870	25.55			
	Murum bedding							13.55			
	Total = B							39.10			
								Net Qty = A - B	279.21	459.945	739.152
D 74											
	CH3175.15	582.680	579.680	579.480			3.200	3.300			
	CH3198.25	582.925	579.725	579.525			3.400				
	Item No. 1 :- Excavation for foundation/pipe trenches in all types of soil & soft murum etc										
	(a) For Lift 0 to 1.5m	1			21.50	2.340	1.500	75.465	490.096	565.561	
	(b) For Lift 1.5m to 3.0m	1			21.50	1.940	1.500	62.565	229.011	291.576	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murum etc complete.										
	(c) For Lift 3.0m to 4.5m	1			21.50	1.540	0.300	9.933	40.320	50.253	
	Item No. 7 :- Filling in plinth and floors/ trenches etc	1			22.00	1.540	0.200	6.776	50.499	57.275	
	Item No. 17 (e) :- Lowering & Laying RCC NP3 class pipe of 700mm Dia	1			22.50			22.500	150.000	172.500	
	Item No 30 :- Refilling the excavated trenches ...										
	Total Excavation = A							147.963			
	Deduction										
	pipe area	1		0.785	21.50	0.870	0.870	12.77			
	Murum bedding							6.78			
	Total = B							19.55			
								Net Qty = A - B	128.41	739.152	867.564



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Date	Particulars of work	DETAILS						Content of arrears	Last measurement		Total Upto Date Quantity
		No			L	B	D		Page	Quantity	
		GL	IL	EX.L							
	D 75										
	CH3243.85	582.915	579.815	579.615			3.300				
	CH3264.45	582.955	579.855	579.655			3.300	3.300			
	Item No. 1 :- Excavation for foundation/pipe trenches in all types of soil & soft murrum etc										
	(a) For Lift 0 to 1.5m	1			19.00	2.340	1.300	57.798		720.001	777.799
	(b) For Lift 1.5m to 3.0m	1			19.00	1.940	0.500	18.430		419.616	438.046
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			19.00	2.340	0.200	8.892		5.330	14.222
	(b) For Lift 1.5m to 3.0m	1			19.00	1.940	0.600	22.116		57.762	79.878
	Item No. 4:- Excavation for foundation/pipe trenches in soft rock etc complete.										
	(b) For Lift 1.5m to 3.0m	1			19.00	1.940	0.200	7.372		24.175	31.547
	Item No. 5 :- Excavation for foundation/pipe trenches in Hard rock etc complete.										
	(b) For Lift 1.5m to 3.0m	1			19.00	1.940	0.200	7.372		19.817	27.189
	(c) For Lift 3.0m to 4.5m	1			19.00	1.540	0.300	8.778		20.822	29.600
	Item No. 7 :- Filling in plinth and floors/ trenches etc	1			19.50	1.540	0.200	6.006		70.981	76.987
	Item No. 17 (e) :- Lowering & Laying RCC NP3 class pipe of 700mm Dia	1			20.00			20.000		217.500	237.500
	Item No 30 :- Refilling the excavated trenches ...										
	Total Excavation= A							130.758			
	Deduction										
	pipe area	1		0.785	19.00	0.870	0.870	11.29			
	Murrum bedding							6.01			
	Total = B							17.30			
								Net Qty = A - B		1140.726	1254.188
	CH3264.45	582.955	579.855	579.655			3.300				
	CH3285.05	583.095	579.895	579.695			3.400	3.350			
	Item No. 1 :- Excavation for foundation/pipe trenches in all types of soil & soft murrum etc										
	(a) For Lift 0 to 1.5m	1			19.00	2.340	1.300	57.798		777.799	835.597
	(b) For Lift 1.5m to 3.0m	1			19.00	1.940	0.600	22.116		438.046	460.162
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			19.00	2.340	0.200	8.892		14.222	23.114
	(b) For Lift 1.5m to 3.0m	1			19.00	1.940	0.500	18.430		79.878	98.308
	Item No. 4:- Excavation for foundation/pipe trenches in soft rock etc complete.										
	(b) For Lift 1.5m to 3.0m	1			19.00	1.940	0.300	11.058		31.547	42.605
	Item No. 5 :- Excavation for foundation/pipe trenches in Hard rock etc complete.										
	(b) For Lift 1.5m to 3.0m	1			19.00	1.940	0.100	3.686		27.189	30.875
	(c) For Lift 3.0m to 4.5m	1			19.00	1.540	0.350	10.241		29.600	39.841



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(From No.52)

Measurement Book

Book No. :- **180**
Page No. :-

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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. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			19.00	2.340	0.200	8.892		33.176	42.068
	(b) For Lift 1.5m to 3.0m	1			19.00	1.940	0.800	29.488		121.248	150.736
	(c) For Lift 3.0m to 4.5m	1			19.00	1.540	0.000	0.000		69.830	69.830
	Item No. 4:- Excavation for foundation/pipe trenches in soft rock etc complete.										
	(a) For Lift 0 to 1.5m	1			19.00	2.340	0.150	6.669		7.546	14.215
	(b) For Lift 1.5m to 3.0m	1			19.00	1.940	0.500	18.430		61.374	79.804
	(c) For Lift 3.0m to 4.5m	1			19.00	1.540	0.000	0.000		10.953	10.953
	Item No. 5 :- Excavation for foundation/pipe trenches in Hard rock etc complete.										
	(b) For Lift 1.5m to 3.0m	1			19.00	1.940	0.000	0.000		51.730	51.730
	(c) For Lift 3.0m to 4.5m	1			19.00	1.540	0.700	20.482		58.051	78.533
	Item No. 7 :- Filling in plinth and floors/ trenches etc	1			19.50	1.540	0.200	6.006		89.769	95.775
	Item No. 17 (e) :- Lowering & Laying RCC NP3 class pipe of 700mm Dia	1			20.00			20.000		280.000	300.000
	Item No 30 :- Refilling the excavated trenches ...										
	Total Excavation= A							142.462			
	Deduction										
	pipe area	1		0.785	19.00	0.870	0.870	11.29			
	Murrum bedding							6.01			
	Total = B							17.30			
	Net Qty = A - B							125.17		1505.804	1630.971



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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

Book No. :- **181**
Page No. :-

1 of 1

RA 12 Sewer D Main 300 DWC-Conn.

12th R A BILL MEASUREMENTS

SEWER "D"

Date	Particulars of work	DETAILS					Content of arrears	Last measurement		Total Upto Date Quantity	
		No			L	B		D	Page		Quantity
		GL	IL	EX.L							
	DWC - 315 mm Dia Connections to old line to new line at D 76 Manhole At Kailash Nagar										
	315mm dia (Width of Trench -0.315+0.5=0.815m)										
	For Width of Trench Calculation Outer dia of Pipe + 0.50 for Bottom and Add 0.4 for Subsequent upper Lifts.	For Depth			0.0m to 1.5m		0.0m to 3.0m	0.0m to 4.5m			
		For Lift 0.0m to 1.5m			0.815		1.215	1.615			
		For Lift 1.5m to 3.0m					0.815	1.215			
		For Lift 3.0m to 4.5m						0.815			
	D 76										
	CH0.00	583.095	581.496	581.396			1.699	1.775			
	CH6.00	583.095	581.345	581.245			1.850				
	Item No. 1 :- Excavation for foundation/pipe trenches in earth soils, Soft murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			6.000	1.215	1.500	10.935	944.583	955.518	
	(b) For Lift 1.5m to 3.0m	1			6.000	0.815	0.275	1.345	467.534	468.879	
	(c) For Lift 3.0m to 4.5m	1			6.000	0.815	0.000	0.000	6.622	6.622	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			6.000	1.215	0.000	0.000	42.068	42.068	
	(b) For Lift 1.5m to 3.0m	1			6.000	0.815	0.000	0.000	150.736	150.736	
	(c) For Lift 3.0m to 4.5m	1			6.000	0.815	0.000	0.000	69.830	69.830	
	Item No. 4 :- Excavation for foundation/pipe trenches in soft rock etc complete.										
	(a) For Lift 0 to 1.5m	1			6.000	1.215	0.000	0.000	14.215	14.215	
	(b) For Lift 1.5m to 3.0m	1			6.000	0.815	0.000	0.000	79.804	79.804	
	(c) For Lift 3.0m to 4.5m	1			6.000	0.815	0.000	0.000	10.953	10.953	
	Item No. 5 :- Excavation for foundation/pipe trenches in Hard rock etc complete.										
	(b) For Lift 1.5m to 3.0m	1			6.000	0.815	0.000	0.000	51.730	51.730	
	(c) For Lift 3.0m to 4.5m	1			6.000	0.815	0.000	0.000	78.533	78.533	
	Item No. 7 :- Filling in plinth and floors/ trenches etc complete.(bedding)	1			6.000	0.815	0.100	0.489	95.775	96.264	
	Item No. : 11 Transportation of earth Transportation charges including loading & unloading							0.956	0.000	0.956	
	Item No. 13 :- (d) Lowering & Laying of Polyethylene DWC pipe of 315mm Dia	1			6.000			6.000	0.000	6.000	
	Item No. 30 :- Refilling the excavated trenches ...										
	Total Excavation=							12.280			
	pipe area	1.00		0.785	6.000	0.315	0.315	0.467			
	Murrum bedding							0.489			
								0.956			
								11.323	1630.971	1642.294	



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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) STD and Ward No. 09 :-

Book No. :-

Page No. :- **183**

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RA 12 Sewer D Main RCC 1.5m MH

Date	Particulars of work	DETAILS					Content of arrears	Last measurment		Total Upto Date Quantity	
		No			L	B		D	Page		Quantity
		GL	IL	EX.L							
	Item No. 4 :- Excavation for foundation/pipe trenches in soft rock etc complete.										
	(b) For Lift 1.5m to 3.0m	1			0.785	8.410	0.200	1.320		1.320	2.641
	ITEM No. 5 :- Excavation for foundation / pipe trenches in laterite rock masses etc complete										
	(b) For Lift 1.5m to 3.0m	1			0.785	8.410	0.805	5.314		1.981	7.295
	Item No. : 11 Transportation of earth Transportation charges							8.628		6.757	15.385
	Item No. 30 :- Refilling the excavated trenches ...										
	Total Excavation=							18.848			
	Deduction										
	Wall	1		0.785	1.900	1.900	2.505	7.099			
	Raft	1		0.785	2.300	2.300	0.250	1.038			
	PCC	1		0.785	2.500	2.500	0.100	0.491			
								8.628			
	Net Qty = A - B							10.221		7.734	17.955



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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 Salem Ah. Constructing, Erecting, Testing and Commissioning of Sewerage Treatment Plant based on modern technology at Nakshinawadi (Kanchanwadi), Banewadi, Siddharth Garden, Zilla, Padarvan, CHDCO (Airport), Constructing, Erection, Testing and Commissioning

Book No. :-

Page No. :- 184

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RA 14 Sewer D Main BBM 1.5m MH

14th RA BILL MEASUREMENTS

SEWER "D"

Date	Particulars of work	DETAILS					Content of area	Last measurement		Total Upto Date Quantity	
		No			L	B		D	Page		Quantity
		GL	IL	EX.L							
	Excavation of Chamber - For 1.50m dia Manhole (upto a depth of 2.0m to 5.0m)- 1.50*0.35*0.35*0.5*0.5=3.20m Breadth for Manhole=3.2*3.2=10.24m D 73										
	CH3128.95	582.465	579.090	578.640			3.825				
	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	10.240	1.500	12.058	18.716	30.774	
	(b) For Lift 1.5m to 3.0m	1			0.785	10.240	1.312	10.546	0.990	11.537	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(b) For Lift 1.5m to 3.0m	1			0.785	10.240	0.188	1.511	2.608	4.119	
	(c) For Lift 3.0m to 4.5m	1			0.785	10.240	0.825	6.632	0.000	6.632	
	Item No. : 11 Transportation of earth Transportation charges							11.686	15.385	27.071	
	Item No. 30 :- Refilling the excavated trenches ...										
	Total Excavation=							30.747			
	Deduction										
	Brick work	1			0.785	2.280	2.280	1.375	5.611		
		1			0.785	1.540	1.540	2.000	3.723		
	PCC	1			0.785	2.580	2.580	0.250	1.306		
	Soling	1			0.785	2.580	2.580	0.200	1.045		
								11.686			
	Net Qty = A - B							19.061	17.955	37.016	
	D 74										
	CH3175.15	582.680	579.180	578.730			3.950				
	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	10.240	1.500	12.058	30.774	42.831	
	(b) For Lift 1.5m to 3.0m	1			0.785	10.240	1.500	12.058	11.537	23.594	
	(c) For Lift 3.0m to 4.5m	1			0.785	10.240	0.100	0.804	0.000	0.804	
	Item No. 2 :- Excavation for foundation/pipe trenches In Hard murrum etc complete.										
	(c) For Lift 3.0m to 4.5m	1			0.785	10.240	0.850	6.833	6.632	13.464	
	Item No. : 11 Transportation of earth Transportation charges							12.196	27.071	39.267	
	Item No. 30 :- Refilling the excavated trenches ...										
	Total Excavation=							31.752			
	Deduction										
	Brick work	1			0.785	2.280	2.280	1.500	6.121		
		1			0.785	1.540	1.540	2.000	3.723		
	PCC	1			0.785	2.580	2.580	0.250	1.306		
	Soling	1			0.785	2.580	2.580	0.200	1.045		



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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 Zoge Salim Ali. Constructing, Erecting, Testing and Commissioning of Sewage Treatment Plant based on modern technology at Nakshtrawadi (Kanchanwadi), Banewadi, Siddharth

Book No. :-

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RA 12-6sewer D Main BBM 1.5m MH

Date	Particulars of work	DETAILS						Content of area	Last measurement		Total Upto Date Quantity
		No			L	B	D		Page	Quantity	
		GL	IL	EX.L							
							12.196				
							19.556		37.016	56.571	
		Net Qty = A - B									
	D 75										
	CH3243.85	582.915	579.815	579.365			3.550				
	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	10.240	1.500	12.058	42.831	54.889	
	(b) For Lift 1.5m to 3.0m	1			0.785	10.240	1.500	12.058	23.594	35.652	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(c) For Lift 3.0m to 4.5m	1			0.785	10.240	0.225	1.809	13.464	15.273	
	Item No. 4 :- Excavation for foundation/pipe trenches in soft rock etc complete.										
	(c) For Lift 3.0m to 4.5m	1			0.785	10.240	0.325	2.612	0.000	2.612	
	Item No. : 11 Transportation of earth Transportation charges							10.564	39.267	49.830	
	Item No. 30 :- Refilling the excavated trenches ...										
	Total Excavation=							28.536			
	Deduction										
	Brick work	1		0.785	2.280	2.280	1.100	4.489			
		1		0.785	1.540	1.540	2.000	3.723			
	PCC	1		0.785	2.580	2.580	0.250	1.306			
	Soling	1		0.785	2.580	2.580	0.200	1.045			
								10.564			
		Net Qty = A - B									
								17.973	56.571	74.544	
	D 76										
	CH3285.05	583.095	579.895	579.445			3.650				
	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	10.240	1.300	10.450	54.889	65.339	
	(b) For Lift 1.5m to 3.0m	1			0.785	10.240	0.600	4.823	35.652	40.475	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	10.240	0.200	1.608	1.089	2.697	
	(b) For Lift 1.5m to 3.0m	1			0.785	10.240	0.500	4.019	4.119	8.138	
	Item No. 4 :- Excavation for foundation/pipe trenches in soft rock etc complete.										
	(b) For Lift 1.5m to 3.0m	1			0.785	10.240	0.300	2.412	2.641	5.052	
	ITEM No. 5 :- Excavation for foundation / pipe trenches in laterite rock masses etc complete										
	(b) For Lift 1.5m to 3.0m	1			0.785	10.240	0.100	0.804	7.295	8.099	
	(c) For Lift 3.0m to 4.5m	1			0.785	10.240	0.650	5.225	0.000	5.225	
	Item No. : 11 Transportation of earth Transportation charges							10.972	49.830	60.802	



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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

Book No. :-

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RA 11 Sewer D Main-Dewatering

11th R A BILL MEASUREMENTS Sewer "D"

Sr.No.	Date	Pump Capacity in Hp	No. of Pumps	Time		Total Hrs	Bhp/Hr
				From	To		
D-700mm Dia Kailas Nagar-Smashan Maruti Mandir							
1	24/10/2016	15	1	7:30	9:00	1:30	22:30:00
		15	1	11:00	12:00	1:00	15:00:00
		15	1	14:00	15:30	1:30	22:30:00
		15	1	17:00	17:30	0:30	7:30:00
2	25/10/2016	15	1	7:00	9:00	2:00	30:00:00
		15	1	10:00	11:00	1:00	15:00:00
		15	1	14:00	16:30	2:30	37:30:00
		15	1	17:00	17:30	0:30	7:30:00
3	26/10/2016	15	1	7:00	8:00	1:00	15:00:00
		15	1	10:00	11:30	1:30	22:30:00
		15	1	14:30	15:30	1:00	15:00:00
4	27/10/2016	15	1	7:00	9:00	2:00	30:00:00
		15	1	11:00	12:30	1:30	22:30:00
		15	1	14:00	16:30	2:30	37:30:00
5	28/10/2016	15	1	7:00	8:00	1:00	15:00:00
		15	1	10:00	11:00	1:00	15:00:00
6	03/11/2016	15	1	7:30	9:30	2:00	30:00:00
		15	1	10:00	11:00	1:00	15:00:00
		15	1	14:00	16:00	2:00	30:00:00
7	04/11/2016	15	1	6:30	9:30	3:00	45:00:00
		15	1	11:00	12:00	1:00	15:00:00
		15	1	14:00	15:00	1:00	15:00:00
8	05/11/2016	15	1	7:00	11:00	4:00	60:00:00
		15	1	12:30	13:00	0:30	7:30:00
		15	1	14:00	14:30	0:30	7:30:00
9	07/11/2016	15	1	15:00	15:30	0:30	7:30:00
		15	1	7:00	11:00	4:00	60:00:00
		15	1	12:00	12:30	0:30	7:30:00
10	08/11/2016	15	1	14:00	15:00	1:00	15:00:00
		15	1	7:30	9:30	2:00	30:00:00
		15	1	10:00	11:30	1:30	22:30:00
11	09/11/2016	15	1	14:30	16:00	1:30	22:30:00
		15	1	7:00	9:30	2:30	37:30:00
		15	1	10:00	10:30	0:30	7:30:00
		15	1	12:00	12:30	0:30	7:30:00
12	10/11/2016	15	1	14:00	15:00	1:00	15:00:00
		15	1	7:30	10:30	3:00	45:00:00
		15	1	11:00	12:00	1:00	15:00:00
		15	1	13:00	15:00	2:00	30:00:00
		15	1	16:00	17:00	1:00	15:00:00



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AURANGABAD MUNICIPAL CORPORATION.

(From No.52)

Measurement Book

188

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

Book No. :-

Page No. :-

Page 2 of 2

RA 12-Sewer D Main-Dewatering

Sr.No.	Date	Pump Capacity in Hp	No.of Pumps	Time		Total Hrs	Bhp/Hr
				From	To		
13	13/11/2016	15	1	8:10	9:10	1:00	15:00:00
		15	1	11:00	12:00	1:00	15:00:00
		15	1	14:00	15:00	1:00	15:00:00
14	14/11/2016	15	1	8:00	9:30	1:30	22:30:00
		15	1	11:15	12:15	1:00	15:00:00
		15	1	15:00	16:00	1:00	15:00:00
15	15/11/2016	15	1	8:20	9:20	1:00	15:00:00
		15	1	10:10	11:10	1:00	15:00:00
		15	1	14:00	15:00	1:00	15:00:00
16	16/11/2016	15	1	8:15	9:15	1:00	15:00:00
		15	1	11:20	12:20	1:00	15:00:00
		15	1	14:00	15:00	1:00	15:00:00
		15	1	16:30	17:00	0:30	7:30:00
Sub Total						72:30:00	1087:30:00
							1087.500



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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 Nakshrawadi (Kanchanwadi), Banewadi, Siddharth Garden, Zalta, Padegaon, CIDCO (Airport), Construction, Erection, Testing and Commission

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RA 11 Sewer D Main MANHOLE

Page 1 of 1

11th R A BILL MEASUREMENTS

Sewer "D"

ITEM No: 22 Providing and constructing on sewer. R.C.C circular manhole 2.2 m dia and up to a depth of 5 M of Reinforced								
Sr.No.	MH No	Chainage	MTL	IL	Depth	Depth Difference than 5 m	Total Difference	Rebate/Add for Excess height (per 50 cm)
1	D 1	CH13.10/0.00	560.270	553.820	6.450	1.450	1.95	3.90
2	D 49	2069.300	574.821	569.571	5.250	0.250		
3	D 50	2091.100	575.546	570.296	5.250	0.250		

Item No. 23:- Providing and constructing on sewer.BBM manhole 1.5 m dia at bottom and 0.5 m dia at top and up to a depth of 2 to 5.0 M

Sr.No.	MH No	Chainage	MTL	IL	Depth	Depth Difference than 5 m	Total Difference	Rebate/Add for Excess height (per 50 cm)
1	D 73	3128.950	582.465	579.090	3.375	-1.625	-8.33	-16.65
2	D 74	3175.150	582.680	579.180	3.500	-1.500		
3	D 75	3243.850	582.915	579.815	3.100	-1.900		
4	D 76	3285.050	583.095	579.895	3.200	-1.800		
5	D 77	3328.750	583.480	579.980	3.500	-1.500		

Extra Item No. 1: Construction of RCC circular Manhole of 1.5m dia & 3.5m depth

Sr.No.	MH No	Chainage	MTL	IL	Depth	Depth Difference than 3.5 m	Total Difference	Rebate/Add for Excess height (per 50 cm)
1	D 71	3039.050	583.090	578.440	4.650	1.150	2.250	4.50
2	D 72	3055.250	583.150	578.550	4.600	1.100		



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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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Page No. :- **191**

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

Authority No. AMC/Ward R&C/UIDSSMT/2014/184 **Date** 01 07 2014

Sewer D Main Quantity Node Abstract

11th R A BILL MEASUREMENTS

Sewer "D"

SR NO	Description	MB/PG	ITEM 13		ITEM 17		ITEM 22	ITEM 23	ITEM 23.1	ITEM 30	EIRL 1		EIRL 1.a
			315mm	700mm	1200mm	upto 5 m	22.1	2-5 m	Rebate		3.5m	Rebate	
1	For Pipe		0.956	300.000	12.500					1,642.294			
2	For Manhole		72.998			3.000	5.00	(16.650)		112.468		2.000	4.500
Total			73.954	300.000	12.500	3.000	5.000	-16.650	1754.763		2.000	4.500	

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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 Nakshrawadi (Kanchanwadi), Banewadi, Siddharth

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Page No. :-

• 11th In Front Of Nupur Cinema 400mm Meas.

of 3

12th RA BILL MEASUREMENTS

Branch Sewer at In Front Nupur Cinema

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 Branch at In Front Nupur Cinema										
	400mm dia (Width of Trench -0.400+0.15+0.15+0.5=1.20m)										
	For Width of Trench Calculation					0.0m to 1.5m	0.0m to 3.0m	0.0m to 4.5m			
	Outer dia of Pipe + 0.50 for Bottom and Add 0.4 for Subsequent upper Lifts.					1.200	1.600	2.000			
							1.200	1.600			
								1.200			
2-May-16	NC 1 to NC 2										
	CH0.00	605.924	603.594	603.394			2.530				
	CH26.30	606.064	603.644	603.444			2.620				
	Item No. 1 :- Excavation for foundation/pipe trenches in all types of soil & soft murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			23.600	1.600	0.400	15.104	0.000	15.104	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			23.600	1.600	1.050	39.648	0.000	39.648	
	(b) For Lift 1.5m to 3.0m	1			23.600	1.200	1.075	30.444	0.000	30.444	
	Item No. 4:- Excavation for foundation/pipe trenches in soft rock etc complete.										
	(a) For Lift 0 to 1.5m	1			23.600	1.600	0.050	1.888	0.000	1.888	
	Item No. 7 :- Filling in plinth and floors/ trenches etc complete.(bedding)										
	(a) For Lift 0 to 1.5m	1			23.600	1.200	0.200	5.664	0.000	5.664	
	Item No. 11 Transportation of earth Transportation charges including loading & unloading							11.268	0.000	11.268	
	Item No.17 (a) :- Lowering & Laying RCC NP3 class pipe of 400mm Dia	1			25.000			25.000	0.000	25.000	
	Item No 30 :- Refilling the excavated trenches ...							87.084			
	Total Excavation = A										
	Deduction										
	pipe area	1		0.785	23.600	0.550	0.550	5.604			
	soling							0.000			
	PCC							0.000			
	Murrum bedding							5.664			
	Total = B							11.268			
	Net Qty = A - B							75.816	0.000	75.816	
9-May-16	NC 2 to NC 3										
	CH26.30	606.064	603.644	603.444			2.620				
	CH50.10	606.094	603.669	603.469			2.625	2.623			
	Item No. 1 :- Excavation for foundation/pipe trenches in all types of soil & soft murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			20.600	1.600	0.400	13.184	15.104	28.288	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			20.600	1.600	1.050	34.608	39.648	74.256	



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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

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12h In Front Of Nupur Cinema 400mm Meas.

	(b) For Lift 1.5m to 3.0m	1			20.600	1.200	1.123	27.761		30.444	58.205	
	Item No. 4:- Excavation for foundation/pipe trenches in soft rock etc complete.											
	(a) For Lift 0 to 1.5m	1			20.600	1.600	0.050	1.648		1.888	3.536	
	Item No. 7 :- Filling in plinth and floors/ trenches etc complete.(bedding)	1			20.600	1.200	0.200	4.944		5.664	10.608	
	Item No. : 11 Transportation of earth Transportation charges including loading & unloading							9.836		11.268	21.104	
	Item No.17 (a) :- Lowering & Laying RCC NP3 class pipe of 400mm Dia	1			22.500			22.500		25.000	47.500	
	Item No 30 :- Refilling the excavated trenches ...							77.201				
	Total Excavation= A											
	Deduction											
	pipe area	1		0.785	20.600	0.550	0.550	4.892				
	soling							0.000				
	PCC							4.944				
	Murrum bedding							9.836				
	Total = B											
					Net Qty = A - B					67.365	75.816	143.181
13-May-16	NC 3 to NC 4											
	CH50.10	606.094	603.669	603.469				2.625	2.673			
	CH73.90	606.214	603.694	603.494				2.720				
	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			20.600	1.600	0.400	13.184		28.288	41.472	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murum etc complete.											
	(a) For Lift 0 to 1.5m	1			20.600	1.600	1.050	34.608		74.256	108.864	
	(b) For Lift 1.5m to 3.0m	1			20.600	1.200	1.173	28.997		58.205	87.201	
	Item No. 4:- Excavation for foundation/pipe trenches in soft rock etc complete.											
	(a) For Lift 0 to 1.5m	1			20.600	1.600	0.050	1.648		3.536	5.184	
	Item No. 7 :- Filling in plinth and floors/ trenches etc complete.(bedding)	1			20.600	1.200	0.200	4.944		10.608	15.552	
	Item No. : 11 Transportation of earth Transportation charges including loading & unloading							9.836		21.104	30.940	
	Item No.17 (a) :- Lowering & Laying RCC NP3 class pipe of 400mm Dia	1			22.500			22.500		47.500	70.000	
	Item No 30 :- Refilling the excavated trenches ...											
	Total Excavation= A							78.437				
	Deduction											
	pipe area	1		0.785	20.600	0.550	0.550	4.892				
	soling							0.000				
	PCC							0.000				
	Murrum bedding							4.944				
	Total = B							9.836				
					Net Qty = A - B					68.601	143.181	211.702
16-May-16	NC 4 to NC 5											



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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 Sahur Ah. Construction, Erecting, Testing and Commissioning of Sewage Treatment Plant for Zone Sahur Ah. Location: Sahur Ah, Aurangabad, Maharashtra.

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12th In Front Of Nupur Cinema 400mm Meas.

C1173.90	606.214	603.694	603.494			2.720	2.803		
C1100.20	606.479	603.794	603.594			2.885			
Item No. 1 :- Excavation for foundation/pipe trenches in all types of soil & soft murrum etc complete.									
(a) For Lift 0 to 1.5m	1			23.100	1.600	0.500	18.480	41.472	59.952
Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.									
(a) For Lift 0 to 1.5m	1			23.100	1.600	0.950	35.112	108.864	143.976
(b) For Lift 1.5m to 3.0m	1			23.100	1.200	1.303	36.119	87.201	123.320
Item No. 4 :- Excavation for foundation/pipe trenches in soft rock etc complete.									
(a) For Lift 0 to 1.5m	1			23.100	1.600	0.050	1.848	5.184	7.032
Item No. 7 :- Filling in plinth and floors/ trenches etc complete (bedding)	1			23.100	1.200	0.200	5.544	15.552	21.096
Item No. 11 Transportation of earth Transportation charges including loading & unloading							11.029	30.940	41.969
Item No. 17 (a) :- Lowering & Laying RCC NP3 class pipe of 400mm Dia	1			25.000			25.000	70.000	95.000
Item No 30 :- Refilling the excavated trenches ...									
Total Excavation = A							91.559		
Deduction									
pipe area	1		0.785	23.100	0.550	0.550	5.485		
soling							0.000		
PCC							5.544		
Murrum bedding							11.029		
Total = B							80.530	211.782	292.311
				Net Qty = A - B					



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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

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12th
14th In Front Of Nupur Cinema 1.5m MH Excavation

1st RA BILL MEASUREMENTS

BRANCH SEWER AT In Front Nupur Cinema

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 1.50m dia Manhole (upto a depth of 2.0m to 5.0m)- 1.50+0.35+0.35+0.5+0.5=3.20m										
	Breadth for Manhole=3.2*3.2=10.24m										
	NC 2										
	CH26.30	606.064	603.644	603.394			2.670				
	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	10.240	0.400	3.215	0.000	3.215	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	10.240	1.050	8.440	0.000	8.440	
	(b) For Lift 1.5m to 3.0m	1			0.785	10.240	1.170	9.405	0.000	9.405	
	Item No. 4 :- Excavation for foundation/pipe trenches in soft										
	(a) For Lift 0 to 1.5m	1			0.785	10.240	0.050	0.402	0.000	0.402	
	Item No. : 11 Transportation of earth Transportation charges							6.744	0.000	6.744	
	Item No. 30 :- Refilling the excavated trenches ...										
	Total Excavation=							21.463			
	Deduction										
	Brick work	1		0.785	2.280	2.280	0.420	1.714			
		1		0.785	1.540	1.540	2.000	3.723			
	PCC	1		0.785	2.580	2.580	0.250	1.306			
	Soling	1		0.785	2.580	2.580	0.000	0.000			
								6.744			
								14.719	0.000	14.719	
	NC 3										
	CH50.10	606.094	603.669	603.419			2.675				
	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	10.240	0.400	3.215	3.215	6.431	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	10.240	1.050	8.440	8.440	16.881	
	(b) For Lift 1.5m to 3.0m	1			0.785	10.240	1.175	9.445	9.405	18.850	
	Item No. 4 :- Excavation for foundation/pipe trenches in soft										
	(a) For Lift 0 to 1.5m	1			0.785	10.240	0.050	0.402	0.402	0.804	
	Item No. : 11 Transportation of earth Transportation charges							6.764	6.744	13.508	
	Item No. 30 :- Refilling the excavated trenches ...										
	Total Excavation=							21.503			
	Deduction										
	Brick work	1		0.785	2.280	2.280	0.425	1.734			
		1		0.785	1.540	1.540	2.000	3.723			
	PCC	1		0.785	2.580	2.580	0.250	1.306			



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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
J Zone Salim Ali, Constructing, Erecting, Testing and Commissioning of Sewage Treatment

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12th
14th In Front Of Nupur Cinema 1.5m MH Excavation

Date	Particulars of work	DETAILS						Content of arrears	Last measurement		Total Upto Date Quantity
		No			L	B	D		Page	Quantity	
		GL	IL	EX.L							
	Soling	1		0.785	2.580	2.580	0.000	0.000			
								6.764			
				Net Qty = A - B				14.739	14.719	29.458	
	NC 4										
	CH73.90	606.214	603.694	603.444			2.770				
	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	10.240	0.400	3.215	6.431	9.646	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	10.240	1.050	8.440	16.881	25.321	
	(b) For Lift 1.5m to 3.0m	1			0.785	10.240	1.270	10.209	18.850	29.059	
	Item No. 4 :- Excavation for foundation/pipe trenches in soft										
	(a) For Lift 0 to 1.5m	1			0.785	10.240	0.050	0.402	0.804	1.206	
	Item No. : 11 Transportation of earth Transportation charges							7.152	13.508	20.659	
	Item No. 30 :- Refilling the excavated trenches ...										
	Total Excavation=							22.266			
	Deduction										
	Brick work	1		0.785	2.280	2.280	0.520	2.122			
		1		0.785	1.540	1.540	2.000	3.723			
	PCC	1		0.785	2.580	2.580	0.250	1.306			
	Soling	1		0.785	2.580	2.580	0.000	0.000			
								7.152			
				Net Qty = A - B				15.115	29.458	44.572	
	NC 5										
	CH100.20	606.479	603.794	603.544			2.935				
	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	10.240	0.500	4.019	9.646	13.665	
	Item No. 2 :- Excavation for foundation/pipe trenches in Hard murrum etc complete.										
	(a) For Lift 0 to 1.5m	1			0.785	10.240	0.950	7.636	25.321	32.957	
	(b) For Lift 1.5m to 3.0m	1			0.785	10.240	1.435	11.535	29.059	40.594	
	Item No. 4 :- Excavation for foundation/pipe trenches in soft										
	(a) For Lift 0 to 1.5m	1			0.785	10.240	0.050	0.402	1.206	1.608	
	Item No. : 11 Transportation of earth Transportation charges							7.825	20.659	28.484	
	Item No. 30 :- Refilling the excavated trenches ...										
	Total Excavation=							23.593			
	Deduction										
	Brick work	1		0.785	2.280	2.280	0.685	2.795			
		1		0.785	1.540	1.540	2.000	3.723			
	PCC	1		0.785	2.580	2.580	0.250	1.306			
	Soling	1		0.785	2.580	2.580	0.000	0.000			
								7.825			
				Net Qty = A - B				15.768	44.572	60.340	



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AURANGABAD MUNICIPAL CORPORATION.

(From No.52)

Measurement Book

Work:- Development of Underground Sewerage Collection system for Zone I to VI one Salim Ali. Constructing, Erecting, Testing and Commissioning of Sewage Treatment based on modern technology at Nakshtrawadi (Kanchanwadi), Banewadi, Siddharth an. Zalta, Padegaon, CIDCO (Airport). Construction, Erection, Testing and Commission wage pumping stations at Banewadi, Siddharth Garden, Padegaon, Golwadi, Zalta, Ward 8 and CIDCO (Airport). Providing, lowering, laying jointing and testing rising main DI pipe line from Golwadi SPS to Nakshtrawadi (Kanchanwadi) STP and Ward No.98 to or Aurangabad City.

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12th In Front Of Nupur Cinema MANHOLE

12th RA BILL MEASUREMENTS

Sewer at In Front Nupur Cinema

Item No. : 23 Providing and constructing on sewer BBM manhole 1.5 m dia at bottom and 0.5 m dia at top and up to a depth of 5 M

Sr.No.	Chainage	MH No	MTL	IL	Depth	Depth Difference than 5 m	Total Difference	Rebate/Add for Excess height (per 50 cm)
1	CH 26.30	NC 2	606.064	603.644	2.420	-2.580	-9.950	-19.900-
2	CH 50.10	NC 3	606.094	603.669	2.425	-2.575		
3	CH 73.90	NC 4	606.214	603.694	2.520	-2.480		
4	CH 100.20	NC 5	606.479	603.794	2.685	-2.315		
							Total	-19.900





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

12th In Front Of Nupur Cinema Quantity Node Abstract

12th R A BILL MEASUREMENTS

Branch Sewer - In Front Nupur Cinema

SR NO	Description	MB/PG	ITEM 1		ITEM 2		ITEM 4		ITEM 7	ITEM 11	ITEM 17 400mm	ITEM 23		ITEM 30	
			0-1.5	59.952	0-1.5	143.976	0-1.5	7.032				21.096	41.969	95.000	2-5 m
1	For Pipe		0-1.5	59.952	143.976	123.320	7.032	21.096	41.969	95.000					
2	For Manhole			13.665	32.957	40.594	1.608		28.484			4.00	(19.900)	60.340	
Total				73.617	176.933	163.914	8.640	21.096	70.453	95.000	4.00	(19.900)	352.65		

