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1. INTRODUCTION

- **Gurgaon** is the industrial and financial center of Haryana. Gurgaon is one of Delhi's four major satellite cities and is part of the National Capital Region of India. Over the past 10 years the city has undergone rapid development and construction.

2 LOCATION

- The project is located within approved master plan of Gurgaon in Sector 81, 82A, 82, 83, 84 & 85
- The site is located at junction of National Highway-8 & Northern Periphery Road.
- Vatika Limited Vatika Triangle, Block B, Sushant Lok-1, Mehrauli Gurgaon Road, Gurgaon, is developing residential colony, Vatika India Next in proposed sector 82, 82A, 83, 84 & 85 Gurgaon.
- Vatika Limited Vatika Triangle, Block B, Sushant Lok-1, Mehrauli Gurgaon Road, Gurgaon has been awarded License by Director, Town & Country Planning Department, and Govt. of Haryana to develop 393.36 acre area in proposed sector 82, 82 A, 83, 84& 85 Gurgaon. (License No. 76 of 2011 dtd. 7-9-2011)

3 ROADS

3.1 Roads

3.1.1 Proposed Site Grading

The concept adopted for site grading and estimating the earth work quantities is described below.

a. Sufficient natural slopes are available on the ground.

b. The master roads been constructed by HUDA have already been planned & the road grading has been finalized. These levels, conveyed by HUDA to **M/S Vatika Ltd.**, have been kept in view.

3.2 ROAD NETWORK

3.2.1 Existing Connectivity to the Project site

- At present the project site is connected directly from the National Highway-8 located on the southern side of the project site.
- The site will further be connected with the 60 Mtr master plan roads dividing 82-83, 84-85, 83-84 & 82-85 which show that the site will have excellent connectivity with National Highway.
- The site will further get connected with the NPR directly to Delhi near Dwarka.

3.2.2 Road Cross Sections

- The ROW of various road are decided as per the min. requirements of deptt of TCP Haryana & have been cross checked with the IRC requirements of roads in URBAN area based on the traffic assessment criteria as mentioned above. The land under roads is 92.72 acres under internal roads & 18.7 acres under external roads. The total land under roads is 18.15% of the project area.

3.2.3 Road Design

3.2.3.1 Soil Investigation Report

- Based on the Soil Investigation Report the CBR value for 5mm penetration have been considered fit for the design & as such the average value CBR considered for the design is 6 %

3.2.3.2 Earth Work

- The fill sections or from sub grade level at cut sections should be compacted to a dry density corresponding to the minimum state of compaction likely to be achieved. As per normal practice the dry density of the embankment shall be 95 % while in case of sub-grade to the depth of 500 mm below the curst shall be 97% in all roads.

3.2.3.3 Internal Streets

All Internal Streets of 12 & 15 Mtr have been proposed with the following crust thickness

GSB	-	150 mm
Granular Base (WMM)	-	225 mm
BM	-	50 mm
SDBC	-	25 mm

All Roads of 24 Mtr width

GSB	-	200 mm
Granular Base (WMM)	-	225 mm
DBM	-	50 mm
SDBC	-	25 mm

The Granular Sub Base material should have a minimum CBR value of 25 % Standard Road Cross Sections have been adopted

Table:-1

Sr. No.	Name of Wide Road	Road Width	Road Cross Section				
			Berms of Main Road Upper side	Main Road	Central Verge	Paved Parking	Berms of Main Road Lower side
	M	M	M	M	M	M	M
1	12 m	12	3	6			3
2	15 m	15	4.5	6			4.5
3	18 m	18	4.5	6		3	4.5
4	24 m	24	4	14	2		4
	Total			24?			

4 WATER SUPPLY

4.1 Source of Water

- HUDA water pipe line is laid along 90 m wide Road from proposed development of residential colony in Sector 82, 82A, 83, 84 & 85 Gurgaon.
- Boosting Station is proposed in Sector 82.
- Area available is 1600 sqm.
- Rising Main from the above said HUDA water pipe line to Boosting Station in Sector-82 is proposed.
- It is proposed to construct centralized RCC underground tank of capacity as per attached details for domestic purpose.
- The RCC underground tank will be filled from the HUDA rising Main and then pumped directly to plots.
- The scheme has been designed and the total water supply requirements calculated for population as given inn attached sheets.
- 7 No. Existing Tube wells will supply water in initial stage.

4.2 Pumping Equipments

- It has been proposed to install pumping machinery as described with standby of equal capacity.
- Provision for stand by generating set has been made to run the system in case of power failure.
- The total area has been sub dived in 2 Zones
- The distribution of water from Boosting Station is proposed in 2 Zones as per breakup given below:-

5 SEWERAGE SYSTEM

Proposal

- Master Sewer is proposed to be laid along 60 m & 75 m wide roads by HUDA.
- 800 mm i/d, 900 mm i/d pipe sewer is proposed to be laid.
- It is proposed that internal sewer from sector may be connected with HUDA sewer at three points.
- Three no sites have been earmarked for construction of STP before joining HUDA Sewer in Sector 82A, 85 & 83.
- The sewer has been designed in such a manner that gravity flow is feasible in main sewer.
- The Estimated Waste Water Generation = 5.02 mld in plotted area
- Initial arrangements for treatment of 1.5 mld for plotted Area.
  STP1 =1 No. module of 300 KL each
  STP2 =3 No. module of 300 KL each.
  STP3 =1 No. module of 300 KL each
  5 x 0.30 = 1.5 MLD
- Balance quantity of 5-1.5=3.5 mld waste water is to be disposed off in master sewer.

6 RECYCLING OF TREATED WASTE WATER

Plotted Area

- Requirement of Treated Waste Water = 3150Kld.
- 1500 kld of waste water will be treated by developer.
- Balance quantity of 3150-1500 =1650kld will be supplied by HUDA at later stage.
- Till then this quantity will be added in fresh water supply.
- The distribution network has been designed both ways.

7 STORM WATER DRAINAGE SCHEMES

- As per proposal for Storm Water Drainage the storm runoff from the area will be drained off in the master storm sewer yet to be laid.
- 40% of rain fall finds its way as surface water ,balance quantity is either evaporated or infiltrate in ground.
- Efforts are done that part of surface flow also finds its way into ground with the help of injection wells.
- 50 No. Recharge well is proposed in common area.

8 STREET LIGHTING

- As per latest instructions issued by Govt. of Haryana energy efficient street lighting is to be provided in Govt. buildings, Boards, Corporations and public places.
- 150Watt sodium vapour lamps have been proposed on 24 m road on both sides at 40 m distance in a staggered manner i.e. 20 m centre to centre.
- 150Watt sodium vapour lamps have been proposed on 18 m road at 20 m distance on one side of the road, (60 Nos).
- 70Watt HPSV lamps on 12 mt. & 15 mt. roads at a spacing of 20 mts. on one side of roads.
- Clearance of poles from edge is proposed to be 0.6 mts.
- The Street light points shall be supplied power through 25 sq. mm PVC Cables.

9 HORTICULTURE

- Green area acts in the similar manner as lungs performs in human body. Hence its development is important for eco friendly development.
- Fine grassing & landscaping is proposed in all the parks.

- Shrubs and creepers will be provided at suitable places.
- Side plantation will be carried out as per norms on foot paths.
- The different variety of plants will be used as per requirements i.e. for parking area, side, commercial area etc

10 SPECIFICATIONS:

- The work will be carried out in accordance with the Haryana Schedule of rates / HUDA and as per Guide lines of the Haryana Govt.

11 RATES

- Estimate for providing services in this project has been prepared on the basis of recent market rates and H.S.R.

12 COST

- The cost of the project:-62~~15~~Crore 6758.55
- Add charges on account of Escalation, Over Head& Supervision Charges at 49% of Project Cost: - 3046 Lacs 3309.25
- Total Cost of the project 9261 Lacs 20.43 1003(2.91
- Maintenance Cost for 10 years:-3067 Lacs 32.20
- Resurfacing of Roads after 5 yrs. & 10 yrs.=1574 lacs
- Grand Total =12902 lacs. 1538.30 lacs
- Net Area Planned=321.748 Acres
- The cost of development in this project comes out to be :-40.1 Lacs per acre 47.60

For Jay Consultants Pvt. Ltd.

(Director)

Area Statement - Vatika Project, Gurgaon, Haryana		
Description (As per layout plan)	Area	Unit
Total Area of the Scheme (182.796+98.781+44.454+67.331)	393.358	Acres
Area under 45m & 60m Sector Road	18.70	Acres
Balance Scheme Area (A)	374.66	Acres
50% of the area under Sector Roads (B)	9.35	Acres
Total (A)+(B)	384.01	Acres
Area under Group Housing	28.00	Acres
Area under Undetermined Use	34.26	Acres
Net Planned Area (As new plan)	**321.748**	**Acres**

DETAILS OF COMMUNITY SITES				
Sr.No.	Community Facilities	Unit Area	Required	Provided
		Acres	Nos.	Nos.
1	Nursery School	0.20	6	6
2	Primary School	1.00	4	4
3	High School	5.00	2	3
4	Creche	0.20	2	3
5	Religious Building	0.20	2	2
6	Dispensary	1.25	2	2
7	Club / Community Centre	2.00	2	2
8	Police Post	2.00	1	1
9	Health Center	2.00	1	1
10	Taxi Stand	0.50	6	6
	As a part of LSC/Retail			
1	Clinic 250 sq.m each	0.06	7	7
2	ATM of 12 sq.m	0.003	7	7
3	Beauty Parlour of 12 sq.m	0.003	7	7
4	Multipurpose Booth 5 x 5.5 sq.m	0.0068	7	7
5	Milk & Vegetable Booth	-	7	7
6	Nursing Home	1127.16		8

Detail of Area Residential Vatika India Next, Gurgaon						
Sr. No.	Description	Area of each Unit / Plot	Plots	Total Area		Total Persons
1	**Residential (Plotted)**					
		Sq.m.	Nos.	Sq.m.	Acres	No.
		EWS Category				
1.11	A	56.25	497	27956	6.91	4473
1.12	A1	50.00	52	2600	0.64	468
			549	30556	8	4941

	General Category					
1.13	B	150.88	145	21878	5.41	1958
1.14	C	200.68	125	25085	6.20	1688
1.15	D	150.88	361	54468	13.46	4874
1.16	E	201.82	245	49447	12.22	3308
1.17	F	251.40	131	33226	8.24	1769
1.18	FI	250.80	173	43388	10.72	2336
1.19	G	295.20	213	62878	15.54	2876
1.20	H	330.07	152	50171	12.40	2052
1.21	H1	334.49	94	31442	7.77	1269
1.22	H2	342.40	14	4788	1.18	189
1.23	I	400.22	79	32128	7.99	1067
1.25	J	411.81	22	9060	2.24	297
1.26	K	339.84	28	9516	2.35	378
1.27	L	301.07	6	1806	0.45	81
1.28	M	205.39	68	13967	3.45	918
	Sub Total		1856	**443548**	**110**	**25056**
	Total		**2405**	**474104**	**117**	**24997**
2	**Area under Group Housing**			113311	28.00	**84000**
3	**Commercial Area**	Sqm	Nos.	Sq.m	Acres	
3.1	Commercial Area			52083	12.87	
3.2	Nursing Home	9127	8	8903	2.21	
4	**Community Area**	Acres	Nos.	Sq.m	Acres	
4.1	High School	5.00	3	67825	16.76	
4.2	Primary School	1.00	4	17078	4.22	
4.3	Nursery School	0.70	6	6232	1.54	
4.4	Creche	0.20	3	3035	0.75	
4.5	Dispensary	2.25	2	9146	2.26	
4.6	Club / Community Centre	2.00	2	16632	4.11	
4.7	Religious Building	0.20	2	2388	0.59	
4.8	Tavi Stand	0.50	6	12790	3.16	
4.9	Police Post	1.02	1	4128	1.02	
4.10	Health Centre	2.63	1	10643	2.63	
	Sub Total			149896	37.04	
5	**Undetermined use**			138644	34.26	
6	**Green Area**					
6.1	Organised Green - Area under Green Belt	13.16	1	532562	13.16	
6.2	Incidental Green -	8.6	1	34762.2	8.59	
	Sub Total			**88018**	**21.750**	
7	**Area under Master Roads**			75676	18.700	
8	**Area under Roads**			491175	121.373	
	Total Area / Total Demand			**1591861**	**393.356**	

Detail of Area Residential Vs Re Use				Daily Water Requirement		
Sr. No.	Description	Total Persons	Water Allowance	Water Require-ment	Net Water Require-ment	Net Water Require-ment to meet from Recycled water
1	Residential Category of Plots					
		No.	LPCD	Ltrs./Day	Ltrs./Day	Ltrs./Day
	EWS Category					
1.11	A	4475	135	603855	603855	167738
1.12	A1	468	135	63180	63180	17550
		4941		667035	667035	185288
	General Category					
1.13	B	1958	172.5	337669	337669	73406
1.14	C	1688	172.5	291094	291094	63281
1.15	D	4874	172.5	840679	840679	182736
1.16	E	3308	172.5	570544	570544	124031
1.17	F	1769	172.5	305066	305066	66319
1.18	F1	2336	172.5	402874	402874	87581
1.19	G	2876	172.5	496024	496024	107831
1.20	H	2052	172.5	353970	353970	76950
1.21	H1	1269	172.5	218903	218903	47588
1.22	H2	189	172.5	32603	32603	7088
1.23	I	1067	172.5	183971	183971	39994
1.24	J	297	172.5	51233	51233	11138
1.25	K	378	172.5	65205	65205	14175
1.26	L	81	172.5	13973	13973	3038
1.27	M	918	172.5	158355	158355	34425
	Sub Total	**25056**		**4322160**	**4322160**	**939600**
	Total	**29997**		**4989195**	**4989195**	**1124888**
2	**Area under Group**	8400	172.5	1449000	1134000	315000
3	**Commercial Area**					
3.1	Commercial Area 12.87		25000	321750	321750	64350
3.2	Nursing Home 8		5000	40000	40000	8000
4	**Community Area**					
4.1	High School 3		150000	450000	360000	90000
4.2	Primary School 4		50000	200000	160000	40000
4.3	Nursery School 4		10000	60000	48000	12000
4.4	Creche 3		10000	30000	24000	6000
4.5	Dispensary 2		25000	56500	45200	11300
4.6	Club / Community 2		25000	102750	82200	20550
4.7	Religious Building 2		10000	20000	20000	0
4.8	Taxi Stand 6		5000	30000	24000	6000
4.9	Police Post 1		25000	25500	20400	5100
4.10	Health Centre 1		25000	65750	52600	13150
	Sub Total			**1040500**	**836400**	**294100**
5	**Undetermined use** 34.2(Ha)		25000	898464	898464	
6	**Green Area**					
6.1	Organised Green - 13.1(Ha)		25000	329000	32900	296100
6.2	Incidental Green - 8.1 Acre		25000	214750	21475	193275
	Sub Total			**543750**	**74375**	**489375**
7	**Area under**		10000	187000	18700	168300
8	**Area under Roads**		10000	1213730	121373	1092357
	Total Area / Total			**10683380**	**8434257**	**3466370**
	Total Area / Total			**9234389**	**7300257**	**3151370**

9234 KLD 73 KLD 3152 KLD

	Type of Water & Type of Source	Demand	
	Total Water Demand	9234	KL
1	Potable Water Demand of Plotted Area	7302	KL
2	Fire Fighting Demand	550	KL
3	Flushing Water Demand	1152	KL

Rising Main from HUDA Source			
1	Potable Water Demand of Plotted Area	7302	KL
2	Duration of Supply	16	Hrs
3	Line Flow Rate	11.40	M^3/Min
4	Internal Diameter of Pipe	400	mm
5	Flow Velocity	1.51	M/Sec
6	Frictional Head Loss/100.0M	3.58	M
7	Length of Pipe	380	M
8	Total Head Loss	1.50	M

Design of Water Works			
Net Water Demand of 2041	Residential (Plotted)	7302	KL
Net Water Demand of 2041	Zone 1	4652	KL
Net Water Demand of 2041	Zone2	2650	KL
Net Water Demand of 2041	Zone 1	4652	KL
Over Head Service Reservoir			
Size of OHSR@ 6 hrs storage capacity		1163	KL
Provide OHSR600 KL storage capacity with30 M Staging Height		382	KL
Balance capacity to carried to UGT		781	KL
Size of UGT@ 8 hrs storage capacity		1551	KL
Fire Fighting Demand		275	KL
Total Capacity required		2607	KL
Provide UGT in Two Compartments one to meet fire demand size 18m x6mx3 m		324	KL
Provide UGT in Two Compartments another to meet water demand size18m x18mx3.6m		2333	KL
Design of Pumping Machinery			
Net Water Demand Zone 1		4652	KL
Daily Pumping Hrs		16	Hr
No of Pumps Proposed		3	Nos

Pumping Capacity of Pump to cater for average demand with 60% efficiency=1000/3600*4653/16/3	26.9	35	lps
BHP of Motor=35*45/(75*0.6)	35.0	35	BHP
Provide 3pumps to meet total demand 35lps with45 m head ,35 hp Motor each &Provide one pump as stand bye35 lps with45 m , 35 hp Motor			
Provide one no generating set of100 k VA as100% Power back up arrangements to run three pumps average demand with 35HP Motor each.			
Net Water Demand of 2041 2031 Zone 2	2650		KL
Over Head Service Reservoir			
Size of OHSR@ 6 hrs storage capacity (2650x4)	663		KL
Provide OHSR600 KL storage capacity WITH 30 M Staging Height	218		KL
Balance capacity to carried to UGT (663-218)	445		KL
Size of UGT@ 8 hrs storage capacity (2(884/3))	884		KL
Fire Fighting Demand	275		KL
Total Capacity required (445+884+275)	1604 1322		KL
Provide UGT in Two Compartments one to meet fire demand , size 18m x6mx3 m (18X6X3)	324		KL
Provide UGT in Two Compartments another to meet water demand , siz18m x18mx3.6m each (1322-324)	2333 998		KL
Design of Pumping Machinery			
Net Water Demand Zone 2	2650		KL
Daily Pumping Hrs	16		Hr
No of Pumps Proposed Two for Peak Demand	2		Nos.
Pumping Capacity of Pump to cater for average demand with 60% efficiency=1000/3600*2652/16/3 -2	23.0	35	lps
BHP of Motor=20*45/(75*0.6) 35Y 45/(75X0.60)	35.0	35	BHP
Provide 2pumps to meet total demand 35lps with45 m head ,35 hp Motor each &Provide one pump as stand bye35 lps with45 m , 35 hp Motor			
Provide one no generating set of100 k VA as100% Power back up arrangements to run 2 pumps with 35HP Motor each.			
Design of Boosting Station for recycling of Treated Water			
Anticipated Waste Water 5000			KL
Net Water Demand to met from Recycled Water 3153 As per calculation			KL
Phase 1	1500		KL
Phase 2(Balance treated water to be supplied by HUDA) (3153-1500)	1653		KL
To be disposed in HUDA Sewer (5000-3153)	1847		KL

Break up use of treated sewer		Net Water Demand to met from Recycled Water	Phase 1(To be treated & utilize by developer)	Phase 2(Balance treated water to be supplied by HUDA)		
Boosting Station	STP -1	685	300	385	KL	
Boosting Station	STP -2	1498 (5 x 300)	900	598	KL	
Boosting Station	STP -3	970	300	670	KL	
Sub Total		3153	1500	1653	KL	
Design of Boosting Station for receveling of Treated Water						
Boosting Station at point STP1			STP1	No.		1
Size of UGT@ 12 hrs Storage Capacity (300 x 1)				150		KL
Provide UGT of 9m *6M* 3 m Depth 9 x (6 x 3) x 1				162		KL
Design of Pumping Machinery						
Net Water Demand STP (PHE)				300		KL
Daily Pumping Hrs				16		Hr
No of Pumps Proposed one for Average Demand +One for Peak Demand (Two Times Average Demand)				1		Nos.
Pumping Capacity of Pump to cater for average demand =1000/3600*300/16/1				5.2	5	lps
BHP of Motor=5*30/(75*0.6)				3.3	5	BHP
Pumping Capacity of two Pump to cater for peak demand with 60% efficiency=2*1000/3600*889/10/3/0.6 (1+1) 2x5=10 (2x5)				10.4	10	lps
BHP of Motor=10*30/(75*0.6) (1+1)				6.7	10	BHP
Provide one pumps to meet total demand 5 lps with30 m head ,5 hp Motor each &Provide one pumps stand bye5 lps with30 m , 5 hp Motor (3-3x2) (5x2)						
Provide one no generating set of20 k VA as100% Power back up arrangements to run 2 pump as average demand with 5HP Motor each.				20.0	k VA	
Boosting Station at point STP2				No.	3	
Size of UGT@ 12 hrs Storage Capacity (900 x 1/2)				450		KL
Provide UGT of 9m *6M* 3 m Depth (162 x 3)				486		KL
Design of Pumping Machinery						
Net Water Demand				300		KL
Daily Pumping Hrs				16		Hr
No of Pumps Proposed one for Average Demand +One for Peak Demand (Two Times Average Demand)				1		Nos.
Pumping Capacity of Pump to cater for average demand =1000/3600*300/16/3 1/3 (1x3 kW)				5.2	5	lps
BHP of Motor=5*30/(75*0.6) (1x3 kW)				3.3	5	BHP
Pumping Capacity of two Pump to cater for peak demand with 60% efficiency=2*1000/3600*889/10/3/0.6				17.4	10	lps
BHP of Motor=10*30/(75*0.6)				10.0	10	BHP
Provide Three pumps to meet total demand 5 lps with30 m head ,5 hp Motor each &Provide one pump as stand bye5 lps with30 m , 5 hp Motor 20						
Provide one no generating set of25 k VA as100% Power back up arrangements to run three pumps average demand with 5HP Motor each.				25.0	k VA	
Boosting Station at point STP3				No.	1	

3 x 20 = 60 kVA

Size of UGT@ 12 hrs Storage Capacity	150		KL
Provide UGT of 9m *6M* 3 m Depth	162		KL
Design of Pumping Machinery			
Net Water Demand	300		KL
Daily Pumping Hrs	16		Hr
No of Pumps Proposed one for Average Demand +One for Peak Demand (Two Times Average Demand)	1		Nos
Pumping Capacity of Pump to cater for average demand =1000/3600*300/16/1	5.2	5	lps
BHP of Motor=5*30/(75*0.6)	3.3	5	BHP
Pumping Capacity of two Pump to cater for peak demand with 60% efficiency 2*1000/3600*889/10/3/0.6 (1x2 Nos)	10.4	10	lps
BHP of Motor=10*30/(75*0.6) (1x2 Nos)	10.0	10	BHP
Provide 1epumps to meet total demand 5 lps with30 m head ,5 hp Motor each &Provide one pump as stand bye5 lps with30 m , 5 hp Motor (1+1)			
Provide one no generating set of 20 k VA as100% Power back up arrangements to run three pumps average demand with 5HP Motor each (1x 20 KVA)			

For [illegible]

(Director)

COSTING

vatika

Final Allotment of Cost of Vatika India Next, in Sector 82, 82A, 83, 84 & 85 being developed by Vatika Group

Sr. No.	Description		Total Cost in
1	Sub Work No. 1 (Roads)	4351.84	4723[illegible]398
2	Sub Work No. 2 (Water Supply)	1412.70	1407756570
3	Sub Work No. 3 (Waste Water Collection System & Recycling of Treated Waste Water)	1880.60	1159[illegible]185
4	Sub Work No. 4 (Storm Water)	1936.50	1729[illegible]984
5	Sub Work No. 5 (Horticulture & Road Side Plantation)	120.30	91[illegible]902
6	Sub Work No. 6 (Lighting & Fittings)	829.90	6692[illegible]100
	Sub Total	10062.84	9261[illegible]118
	Maintenance for 10 years		
	Roads @ 2% capital cost / yr 20y.	870.36	8447[illegible]030
	Water Supply @ 2.5% capital cost / yr 25y	353.18	3510[illegible]093
	Waste Water Collection System @ 2.5% capital cost / yr 25y.	276.12	2805[illegible]796
	Storm Water @ 1.5% capital cost / yr 15y	290.48	4332[illegible]771
	Horticulture & Road Side Plantation @ 2% capital cost / yr 20y.	24.06	1832[illegible]980
	Light & Fittings @ 2.5% capital cost / yr 25y	205.22	1290[illegible]436
	Resurfacing of Road after 5 yrs & 10yrs	3220.46	1573[illegible]8000
	SubTotal	5245.42	3648[illegible]7796
	Total Cost	15308.12	1289[illegible]6574
	Cost / Acre including Maintenance for net area planned =321.748 Acres		[illegible]

Executive Engineer
HUDA Division No. III
Gurgaon

Cost per Acre
1536.32 / 321.748
= 47.76 Lac / Acre.

Superintending Engineer
HUDA Circle No. I
Gurgaon

Director General
Town and Country Planning
Haryana, Chandigarh

Cost Estimation of Sub Work No. 1 (Roads)					
S No	SUB HEAD NO. 1 Description	Qty.	Unit	Rate in ₹	Amount in ₹
		Roads			
1	Providing for levelling & earth filling : includes providing good earth transportation from source to site, laying in layer, rolling & watering & compaction to the desired specification complete as per MORT & H specifications for road & bridge works Clause - 305 for all leads and lifts as per site conditions	393.338	Acres	100000	39595781
2	Construction of Road By :- Providing GSB 200 mm thick as per MORT & H specifications conforming to Clause 401 grading -II 400.1				
	ii) Providing Laying, spreading and compacting graded stone aggregates as per Table 400-11 to Wet Mix Macadam specifications - 406 MORT&H, IV Revision, including premixing the mixed materials with water to OMC in Mechnical mixer (Plug Mill) carriage of mixed material by tipper to site, laying in uniform layers using paver in subbase / base course, on a well prepared sub base and compacting with power and vibratory roller to achieve & desired density, including cost of material complete 150 mm thick	262260	sq mtr	800	209808000
	Providing, laying & compaction of B.M. (Bituminous Macadam) 50 mm thick with grading 2 as per table No. 500.10 and minimum 4.5% bitumen of 60/70 grade as per MORT&H specifications for road & bridge works 2001 (Revision IV) clause. 507.1 to 507.8 for all leads & lifts etc. complete in all respects to the satisfaction of the Engineer in charge				
	20 mm thick mix seal surfacing				
3	Providing & Fixing kerbs & channels of C.C. M-20 grade as per standard size including back filling etc. complete in all respects.	41784	mtr	333	13914033
4	Provision for Guide Maps & Plot Indicators, Road Marking Strips & Post Delineators ,	L S		500000	500000
5	Provision for Carriage of materials.	L S		2000000	2000000
10.159 HNR	Provision for 80 mm thickPavement of parking in shopping center/commercial center for pavement/parking taking 50 % of the area that is 21.75 ac or 15831 Sq M / 2 = 44009	44009	sq mtr	450	19804150
	Total				283661984
	Total Cost				283461984
	C .O to Final Abstract of Cost				

Abstract of Sub Work No. 2 (Water Supply)		
No. of Sub Head	Name of Sub Head	Amount in ₹
SUB HEAD NO. 1	Source Generation	8112236
Sub Head No. 2	Water Works & Boosting Station	31526000
Sub Head No. 3	Distribution System & Rising Main	54855972
	Total	94494208
	Add 3% Contigency Charges	
	Total Cost	94494208
	Add 4% GHC (Admin. & supervision charges)	
	C.O to Final Abstract of Cost (Escalation Charges)	

81·24
270·72
564·60
920·56
27·24
948·12
484·57
1442·69
1412·70

Cost Estimation of Water Supply Scheme					
Cost Estimation of Sub Work No. 2		Water Supply			
SUB HEAD NO. 1		Source Generation			
Sr. No.	Description	Qty.	Unit	Rate in ₹	Amount in ₹
1	Boring of tubewells having minimum of 450 mm dia with depth of 70 mtr including providing & fixing 200 mm inside dia V - wire Screen of stainless steel of approved make, blind pipe of MS confirming to IS: 3589 of 4.8 mm thick threaded and socketed as per approved design including cost of all fitting and clamps placed on the girder and coated with anticorosive paint of approved quality, including supply and installation of 12.5 BHP pumping set, GI rising mains pipes, panel board and all other electrical appurtenances to run the tubewell, making provision for the earthing, cost of panel board etc complete in all respect upto delivery pipe lines including the cost of Sluice valves, scour valves and non return valves etc. - Well Chamber Complete (Two Pkg)	7	Nos.	800000	5600000
2	Providing & installation of Generator Set of Standard make 20 KVA capacity to run the tubewell fixed with the canopy and platform including cost of change over switch etc complete in all repect.	7	Nos.	338890	2372230
3	Provision for releasing electric connection charges to the DHBVN for the above tube wells	LS			140000
	Total				8112236

Total

81·24 Lacs

Cost Estimation of Sub Work No. 2				Water Supply			
SUB WORK NO. 2				Water Supply-Head works			
SUB HEAD NO.2				(Water Works, Boosting Station)			
Sr. No.	Description			Qty.	Unit	Rate in ₹	Amount in ₹
	Construction of Boosting chamber of suitable size with cost of Pumping Machinery (Four No Horizontal centrifugal pumps, 35 LPS at 45 M Head, and Generating set of 100KVA capacity etc. complete in all respect As detailed below :	WWL	WW2				
	(I) Construction of Boosting Chamber	1	1	2	No	1000000 1500,000/-	2000000 30,00,000/-
	Construction of RCC OHSR of 500 KL capacity with 29 m staging height of standard design as per Public Health/HUDA Departments including cost for providing and fixing of clamps etc., DI Pipes Double flanged class K9 in inlet, outlet, overflow or scour pipes, Providing & laying DI Standard specials of Class K12 including jointing to pipes and fittings, complete as required for all sizes and degrees and CI Sluice Valves with wheel & cap complete with bolts, nuts, rubber lastcations etc. of class PN-1 as per	218	382	600	KL.	15000	9000000 15,00,000/-
	(II) Construction of RCC Under Ground Clear Water Storage Tank, 4700KL capacity in three compartments including inlet, outlet & overflow	2657	2657	5314	KL	3750	19926000
2	Provision for carriage of materials and other unforeseen items.			1	L.S.	100000	100000
3	Construction of Boundary wall and gate around the water works			1	L.S.	200000	200000
4	Development of campus of water works including construction of approach roads, footpath, hedges and development of lawns and plantation etc. complete at water works site			1 LS	1 No	100000	100000
5	Provision for Staff Quarter			LS	LS	200000	200000
	Total						31520000

C.O to Abstract of Cost of sub work no 2

	SUB HEAD NO.3	Distribution System & Rising Main			
Sr.No. / HSR No.	Description	Qty.	Unit	Rate in ₹	Amount in ₹
1	Providing, stringing, cutting and jointing **D.I. pipe** (Class K-7) Zinc coating outside the pipe and cement lining inside including cost of excavation				
	(For Distribution)				
	100 mm id	22033	Mtr	1034	22777936
	150 mm id	4093	Mtr	1490	6099020
	200 mm id	1501	Mtr	1989	2985011
	250 mm id	1853	Mtr	2709	5019787
	300 mm id	665	Mtr	3390	2254231
	350 mm id	517	Mtr	4932	2549734
	400 mm id	710	Mtr	5429	2806832
	For Rising Main				
	150 mm id	1967	Mtr	1490	2931046
	200 mm id	352	Mtr	1989	700016
	250 mm id	146	Mtr	2709	395515
	300 mm id	169	Mtr	3390	572880
2/ NS Recommendation of Committee	Providing and fixing cast iron double fainged **sluice valve/ Butter fly Valve** PN 1.6 marked with IS: 14846 including cost of all joint of material, carriage, loading, unloading, stacking, handling etc complete in all respect of the satisfaction to the Engineer - in charge.				
	100 mm id	301	Nos.	3698	1113098
	150 mm id	59	Nos.	5709	336831
	200 mm id	21	Nos.	9945	208845
	250 mm id	30	Nos.	15589	467670
	300 mm id	6	Nos.	18810	112860
	350 mm id	5	Nos.	30395	151975
	400 mm id	10	Nos.	41120	411200
3/NS	Providing and fixing **Fire Hydrants** complete with masonry chambers	8	Nos.	5000	40000
4	Construction of Brick masonry **Handi for Sluice Valves** & Fire hydrant including surface boxes complete as per Public Health Standard	440	Nos.	5650.00	2486000
5	Provision for indicating **Arrow plates** for Sluice valve & Fire hydrant	440	Nos.	500	220000
6/ 28.13(A)	Providing and fixing C.I. double **Air valves** marked with IS : 14845 including carriage, loading, unloading, stacking, handling, re-handling etc., drilling, tapping, screwing in valves connections complete in all respects to the satisfaction of Engineer-in-charge (as per HSR item 28.13 with C.P. nil) 100mm i/d.	5	Nos.	3098	15490
7	Provision for Carriage of material	1	LS	100000	100000
8	Provision for Cutting of Roads and making good to its orignal condition	1	LS	100000	100000
	Total				64855928

Abstract of Sub Work No. 3 (Waste Water Collection System &Recycling of Treated Water)		
No. of Sub Head	Name of Sub Head	Amount in ₹
Sub Head No. 1	Waste Water collection/Sewerage 412·18	38703903
Sub Head No. 2	Recycling of Treated Water 487·45	39115684
Total	899·58	77819587
Total Cost	1 22·98	77819587
C.O to Final Abstract of Cost	926·56	
Cost Estimation of Waste Water / Sewerage	457·01	Say 138460
SUB WORK NO. 3	1370·58	

Sr. No.	Description	Qty.	Unit	Rate in ₹	Amount in ₹
	Providing unit glazed stone ware pipes grade 'A' in standard length of 600 mm each pipe marked with IS: 651 and their lowering, cutting, jointing and testing , including cost of excavation, bed concrete , Man holes jointing materials as well as carriage, loading, unloading stacking, handling, rehandling etc, complete in all respects to the satisfaction of Engineer in Charge.				
	200 mm id S.W Pipe				
	i) Average Depth up to 2 M				
	Above water table	20668	M	1134	23437512
	250 mm id S.W Pipe				
	ii) Average Depth 2 M to 4 M	2235	M	1437	3211695
	300 mm id S.W Pipe				
	i) Average Depth 2 M to 4 M	2533	M	1832	4640456
	350 mm id S.W Pipe				
	i) Average Depth 2 M to 4 M	1336	M	2214	2957904
	400 mm id S.W Pipe				
	i) Average Depth 2 M to 4 M	787	M	2498	1965926
	450 mm id S.W Pipe				
	i) Average Depth 2 M to 5 M	82	M	3231	264942
	500 mm id S.W Pipe				
	i) Average Depth 2 M to 5 M	408	M	3661	1493688
	700 mm id S.W Pipe R.C.C Np-3				
	i) Average Depth 2 M to 5 M	140	M	5227	731780
	Total	28189			38703903

C.O to Abstract of Cost of sub work no 3

Provision for service connection (28·18 Km) 387·10 Lac
line to C.T. plot. Berhaen along
24 Mtr / master Roads (Sewer) 5000/- = 25·40 Lac
412·00 Lac

	Recycling of Treated Water	(2.2) Distribution System			
	SUB HEAD NO 2(Recycling of Treated Water)	Qty.	Unit	Rate in ₹	Amount in ₹
Sr.No.	Description				
1	Providing, stringing, cutting and jointing AC Pipe of 25kg / cm² pressure including cost of Excavation complete in all respect				
	110 mm/od	20557	Mtr	300	6167100
	160 mm/od	4115	Mtr	728	2995720
	210 mm/od	2934	Mtr	1214	3561876
	250 mm f/d	1936	Mtr	1658	3209888
	300 mm/d	336	Mtr	2416	811776
3 /	Providing and fixing Butter Fly valves /Ball Valve in C.I. body with integrally moulded liner of nitrile or EPDM, as per is :13095 in PN 1.0.				
	100 mm f/d	283	Nos.	3698	1063930
	150 mm f/d	63	Nos.	5709	359667
	210 mm/od	36	Mtr	9945	358020
	250 mm f/d	29	Mtr	15589	452081
	300 mm/d	3	Mtr	18810	56430
4/ 28.13(A)	Providing and fixing C.I. double Air Valves , Butter Fly valves marked with IS : 14845 including carriage, loading, unloading,	2	Nos.	3098	6196
5	Provision for indicating Arrow Plates for sluice valve and Air Valves	418	Nos.	1000	418000
6	Construction of Brick masonry Handi for snd Air valves including surface boxes complete Public Health Standard	418	Nos.	5000	2090000
7	Provision for providing & fixing lawn hydrants/ Sprinklers with sprinkler system at a distance of 30 m centre to centre on the periphery (green land) complete in all respects	50	Nos.	1000	50000
8	Construction of Boosting Station suitable for the pumping machinery and D.G. set.	1	Nos.	150000.00	150000
9	Construction of RCC Under Ground Water Storage Tank including inlet, outlet & overflow arrangement.	750	Kl.	2000.00	1575000
10	Providing & Installing Treatment Units ,5 modules of 300 cum/day	1500	Nos.	100000.00	1500000
11	Providing and installing of pumping set with electric driven slip ring motor complete in all respects.	5	each	100000.00	500000
	Total				39115084
	C.O to Abstract of Cost of sub work no 3				

Cost Estimation of Sub Work No. 4 (Storm Water Drainage)					
Sub Head No. 1		(Storm Water Drainage)			
Sr. No.	Description	Qty.	Unit	Rate in ₹	Amount in ₹
1	Construction of RCC Drain, 1:3 cement plaster inside with 1 mm thick cement rendering, RCC slab in RMC M20 or SFRC slab including cost of excavation & complete in all respect				
	Covered Drain				
	Covered Drain 300 mm x 300 mm	3640	mtr.	2000	7280293
2	Providing, stringing, cutting and jointing RCC NP-3 pipe and specials in in Trenches including cost of excavation , cost of manholes, Road Gullies, ventilating chambers etc., complete in all respect.				
	400 mm dia avg.depth 0-2 M	21966	M	3022.00	66381252
	500 mm dia avg.depth 0-2 M	2692	M	3723.00	10022316
	600 mm dia avg.depth 0-2 M	1769	M	4512.00	7981728
	700 mm dia avg.depth 0-2.5 M	1046	M	5227.00	5467442
	800 mmi/d avg.depth 0-3 M	240	M	6413	1539120
	900 mmi/d avg.depth 0-3.5 M	254	M	7785	1977390
	4)1000 mmi/d avg.depth 0-4 M	207	M	8914	1845198
	1100 mmi/d avg.depth 0-4 M	439	M	10590	4649010
	1200 mmi/d avg.depth 0-4 M	125	M	12342	1542750
4	Provision for connection of proposed drains with existing HUDA Drains	1	Each	30000	30000
5	Provision for Shoring & Timbering , Lighting & Watching	L.S		150000	150000
7	Provision for Carriage of Material	L.S		100000	100000
9	Provision for cutting of road & making good to its original conditions	L.S		100000	100000
5	Provision for 50 nos Recharge Wells	50	Nos.	140000	7000000
	Total Cost				116866499

C.O to Final Abstract of Cost

Sub Work No. 5		Horticulture and Road Side Plantation			
Sub Head No. 1		Qty.	Unit	Rate in ₹	Amount in ₹
Sr. No.	Description				
1	DEVELOPMENT OF GREEN AREA (8.61 Acres) a) Trenching the ordinary soil up to depth of 60 cm i.e. removal and stacking of serviceable material & disposing by spreading and levelling within a lead of 50 M and making up the trench area for proper levels by filling with earth or earth mixed with manure before and after flooding trench with water excluding cost of imported earth and manure. **Area of Road**	21.75	Acres	100,000 99000	2175000/- 1957500
	b) Supply and stacking sludge at site including royalty and carriage Green Area				
	C) Rough dressing of turfed area Grassing with "DOOB GRASS" i.e. watering & maintenance of lawns for 30 days till the grass forms a thick lawn, free from weeds and fit moving in rows 7.5 cm part in either direction including provision for bedges and barbed wire around park				
	d) Maintenance of lawns or turfing of slopes for a period of 1 year				
2	Road Side Plantation and plantation along the roads and above after distance of each 12 m Detail of Cost	8.60	Acr	3500	2858000/-
i	Trees/ Shurbs – 60 Rs				
ii	Excavation – 30 Rs				
	Manure = 60 Rs				
	Tree Guard –600 Rs				
	Total Cost of 1 Tree = 750	**4090**	**No**	**750**	3067500
	Total				5025826
	Total cost				5925026
	C.O to Final Abstract of Cost				

Add 3% Contingency charges

Add 4% O.H.C. (Admn. Unforseen escalation charges)

Say 120.30

Cost Estimation of Sub Work No. 6 (Street Lighting & Fittings)					
Sub Work No. 6		Lighting & Fittings			
Sr. No.	Description	Qty.	Unit	Rate in ₹	Amount in ₹
1	Cost of Lighting & Fittings (Including Cabling etc.	1981	Nos.	12000 / 10000	23772000 / 19810000
2	Cost of Poles (Including etc. existing Complete.	1981	Nos.	12000 / 15000	23772000 / 29715000 / -
	Total cost				43582000 / 53427000 / -
Total					43582000 / 534.27 lac
C.O to Final Abstract of Cost					(Say) 534.27 lac

Add 3% Contigency charges 16.05

550.92 lac

Add 49% otic. (Admin excalation unpredicted charges 269.95 lac

820.87

Say ₹20.90 lacs.

DESIGN STATEMENT OF ROADS

Abstract of Road Length

Sr. No.	Description	Width of Road				Total Length
		12 M	15 M	18 M	24 M	
		m	m	m	m	m
1	Sector 82	10116	2526	483	2310	15435
2	Sector 82A	2382	179	0	763	3324
3	Sector 83	5936	1505	637	1987	10065
4	Sector 84	1636	0	243	204	2083
5	Sector 85	4289.00	296.00	0.00	514.00	5099
6	Total	24359.00	4506	1363	5778	36006

24359 m 4.506 km 1.363 km 5.778 km 36.006 km

Sign by Contractor

Area master Road - Pavement

12m (24.359 x 6.0) = 1615.4 Sqm

15m (4.506 x 6.0) = 27036 Sqm

18m (1.363 x 6.00) = 8178 Sqm

24m - 5.778 x 7.0 = 40892 Sqm

262.260 Sqm

Rly = 36006 - 5778 = 41784 m (Engg. Breakup.)

Longitudinal Section (Road Design Statement) of Roads

S.No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Chainage	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Length of Roads			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12 M Wide Road	15 M Wide Road	18 M Wide Road	21 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m	m
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	D12-D11	133	24	234.100	234.130	-1	1000	234.908	235.430	1219.11	1219.11	0.00				133
2	D11-B10	60	24	234.130	234.130	-1	1000	234.430	234.415	421.81	421.81	0.00				60
3	B10- B9	57	24	234.130	236.900	-1	300	234.015	234.225	417.82	417.82	0.00				57
4	B9- B8	88	24	235.900	235.750	-1	450	234.225	234.030	639.19	639.19	0.00				88
5	B8- D7	62	24	235.750	234.000	-1	1250	234.050	233.930	195.54	195.54	0.00				62
6	D7- D5	195	24	234.000	233.430	-1	625	233.980	233.668	511.38	511.38	0.00				195
7	D7-D6	59	24	234.000	233.250	-1	600	233.668	233.553	448.40	448.40	0.00				59
8	D6- D5	18	24	233.250	233.250	1	200	233.553	233.618	89.66	89.66	0.00				18
9	D5- B4	55	24	233.250	233.600	1	175	233.618	233.933	396.55	396.55	0.00				55
10	B4- D3	56	24	233.600	234.050	1	200	233.958	234.213	432.71	358.71	0.00				56
11	D3- B2	24	24	234.050	234.260	1	125	234.213	234.485	198.54	198.54	0.00				24
12	B2- C1	77	24	234.150	234.300	1	350	234.485	234.705	673.70	673.70	0.00				77
13	C20-C18	84	24	231.250	231.250	1	425	232.018	232.291	1681.12	1681.12	0.00				82
14	C18- C16	43	24	231.250	231.750	1	475	232.191	232.283	359.35	750.35	0.00				43
15	C16- C7	20	24	231.750	232.380	1	150	232.007	233.040	316.02	316.02	0.00				20
16	C7- C5	74	24	232.380	233.000	1	225	233.040	233.209	860.61	860.61	0.00				74
17	C5- C3	58	24	233.250	233.450	1	225	233.553	233.811	462.01	462.01	0.00				58
18	C3- D31	80	24	233.750	234.130	1	180	234.004	234.437	476.37	476.37	0.00				80
19	D15-D30	31	24	232.000	232.000	-1	600	232.788	232.736	506.91	506.91	0.00				31
20	D30-D31	40	24	232.000	232.150	-1	600	232.736	233.669	554.69	554.69	0.00				40

Consultants Pvt Ltd

Sr No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Change	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Length of Roads			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12 M Wide Road	15 M Wide Road	18 M Wide Road	24 M Wide Road
		m	m					m	m	cum	cum	cum	m	m	m	m
21	P28-P27	168	24	233.250	232.000	-1	600	232.665	232.180	1690.84	1630.84	0.00				168
22	P27-P8	15	24	232.000	232.000	-1	600	232.589	232.211	380.13	380.13	0.00				15
23	P8- P7	62	24	232.000	232.000	-1	600	232.589	232.211	501.06	501.06	0.00				62
24	P7-P6	68	24	232.000	232.000	-1	600	232.611	232.056	252.10	252.10	0.00				68
25	P6-P12	45	24	231.250	231.250	-1	600	232.098	232.023	875.13	875.13	0.00				45
26	P6- P5	125	24	233.250	232.750	-1	600	233.553	233.246	1379.38	1379.38	0.00				125
27	P5- P1	60	18	234.000	233.810	-1	625	233.980	233.884	29.45	29.45	0.00		60		
28	P1- P2	56	28	234.810	233.500	-1	675	233.884	233.601	189.29	189.29	0.00		56		
29	P1-P5	195	19	233.810	232.250	-1	825	233.884	233.646	1602.21	1602.21	0.00	195			
30	P9-P8	97	15	232.250	232.430	1	475	232.648	232.071	691.17	691.17	0.00		97		
31	P2-P24	172	19	233.500	232.150	-1	500	233.801	233.515	859.07	859.07	0.00		172		
32	P14-P15	50	12	233.150	233.900	-1	225	233.515	233.266	90.55	0.00	90.55	50			
33	P24-P10	35	19	233.150	233.000	-1	550	233.515	233.451	214.11	214.11	0.00		35		
34	P13-P18	120	19	232.750	232.850	1	600	233.523	233.529	896.68	896.68	0.00	120			
35	P18-P19	30	15	232.850	232.700	1	1100	233.525	233.550	342.60	342.60	0.00		30		
36	P2-P1	56	18	233.500	233.150	-1	725	233.801	233.552	354.68	354.68	0.00			56	
37	P4-P13	172	12	233.150	233.900	-1	600	233.552	233.266	259.25	0.00	259.25	172			
38	P15-P16	56	19	233.900	232.800	1	250	233.266	233.490	18.65	18.65	0.00	56			
39	P16-P17	15	15	232.800	233.850	1	300	233.490	233.520	152.94	152.94	0.00		15		
40	P16-P18	9	12	232.800	232.850	1	300	233.490	233.520	75.41	75.41	0.00	9			

Sr No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Length of roads			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				10 M Wide Road	15 M Wide Road	15 M Wide Road	20 M Wide Road
		m	m					m	m	sq.m	cu.m	cu.m	m	m	m	m
41	P5-P4	16	18	233.150	233.100	-1	400	233.552	233.472	111.58	111.58	0.00			16	
42	P4-P12	67	12	233.150	240.160	1	860	233.477	239.551	331.11	251.11	0.00	67			
43	P1-P5	27	18	233.100	233.000	-1	250	233.472	233.361	179.03	179.03	0.00			27	
44	P5-P6	35	18	233.000	232.750	-1	225	233.064	233.031	435.71	435.71	0.00			35	
45	P8-P20	25	12	243.000	233.000	-1	925	233.361	233.221	94.53	94.53	0.00	25			
46	P20-P21	106	18	233.000	232.750	-1	300	233.371	233.309	431.98	431.98	0.00	106			
47	P21-P22	39	18	232.750	232.750	1	2000	233.109	233.111	46.33	13.33	0.00	39			
48	P21-P7	61	12	232.750	232.750	-1	775	233.109	233.030	253.69	233.69	0.00	61			
49	P6-P23	37	12	232.750	232.750	1	625	233.030	233.121	222.64	222.64	0.00	37			
50	P23-P24	110	12	232.750	232.250	1	575	233.121	233.373	878.27	878.27	0.00	110			
51	P6-P7	132	18	232.750	232.250	-1	525	233.020	232.443	362.08	362.08	0.00			132	
52	P7-P8	61	18	232.250	232.000	-1	475	232.443	232.315	278.92	278.92	0.00			61	
53	P7-P26	37	12	232.250	232.250	1	775	232.443	232.349	242.20	242.20	0.00	83			
54	P9-P25	40	12	232.250	232.100	1	675	232.443	232.302	242.97	140.97	0.00	40			
55	B8-B33	40	18	233.750	233.650	1	1000	234.070	234.070	167.94	167.94	0.00	40			
56	A10-B32	90	12	234.750	233.500	-1	500	234.415	234.237	546.20	546.20	0.00	89			
57	B32-B35	34	12	233.500	233.500	-1	800	234.237	234.105	282.20	282.20	0.00	34			
58	B35-C1	72	12	233.500	233.750	-1	800	234.105	234.105	453.54	453.54	0.00	72			
59	B35-C2	54	12	233.500	233.450	-1	950	234.185	234.819	215.66	215.66	0.00	54			
60	C21-C21	11	12	233.750	233.750	1	5000	234.922	234.819	75.31	75.31	0.00	11			
61	C21-C1	164	12	233.750	233.750	-1	750	234.819	234.105	905.46	905.46	0.00	164			

Sr.No	Name of Road	Length of Road	Width of Road	Natural Surface Level		Slope Character	Longitudinal slope	Formation Levels		Quantity	Earthwork in Embkmt	Excavation in Cutting	Length of Roads			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				10 M Wide Road	15 M Wide Road	14 M Wide Road	24 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m	m
85	C31-C32	70	12	233.400	232.250	1	5000	232.726	232.740	284.58	284.58	0.00	70			
86	C31-C34	57	12	232.300	232.000	-1	275	232.726	232.518	322.82	322.82	0.00	57			
87	C34-C36	83	15	232.000	231.000	1	825	232.518	232.419	707.94	707.94	0.00		83		
88	C36-C51	94	14	232.000	232.000	0	1000	232.419	232.219	938.97	938.97	0.00		94		
89	C34-C35	62	12	232.000	231.750	-1	205	232.518	232.216	366.13	366.13	0.00	62			
90	C35-C34	70	12	232.000	231.750	1	175	232.618	232.219	330.90	330.90	0.00	70			
91	C35-C52	188	15	231.750	231.750	1	500	232.216	232.597	1475.17	1475.17	0.00	188			
92	C35-C36	68	12	231.750	231.750	1	3000	232.216	232.239	389.41	389.41	0.00	68			191
93	C36-C16	171	24	231.750	231.800	1	1000	232.739	232.410	2719.92	2253.37	0.00				
94	C36-C35	86	15	231.750	231.550	-1	300	232.239	231.952	459.47	459.47	0.00	86			
95	C36-C52	18	24	231.550	231.250	1	1050	231.952	231.969	242.12	242.12	0.00				18
96	C16-C16	226	24	231.250	231.750	1	725	231.969	232.281	3389.62	3389.47	0.00				226
97	C38-C40	63	12	231.550	231.120	-3	350	231.952	231.777	398.33	398.33	0.00	63			
98	C52-C53	71	12	231.250	231.000	3	3000	231.969	231.995	729.20	729.20	0.00	71			
99	C53-C54	148	12	231.000	231.250	1	3000	231.995	232.042	1584.84	1584.84	0.00	148			
100	C20-C54	95	12	231.250	231.000	-1	200	232.018	231.852	940.56	940.56	0.00	95			
101	C54-C41	143	15	231.000	230.550	-3	650	231.882	231.442	1539.59	1539.59	0.00	143			
102	T20-D20	46	12	232.000	232.000	-3	1500	232.736	232.705	607.89	607.89	0.00	46			
103	D20-D38	166	12	232.000	232.000	1	2500	232.705	232.232	1471.44	1471.44	0.00	166			
104	D38-D22	97	12	232.000	232.000	1	2001	232.773	232.646	650.51	650.51	0.00	97			
105	D22-D37	42	12	232.000	232.000	-1	90	232.646	232.580	308.94	308.94	0.00	42			

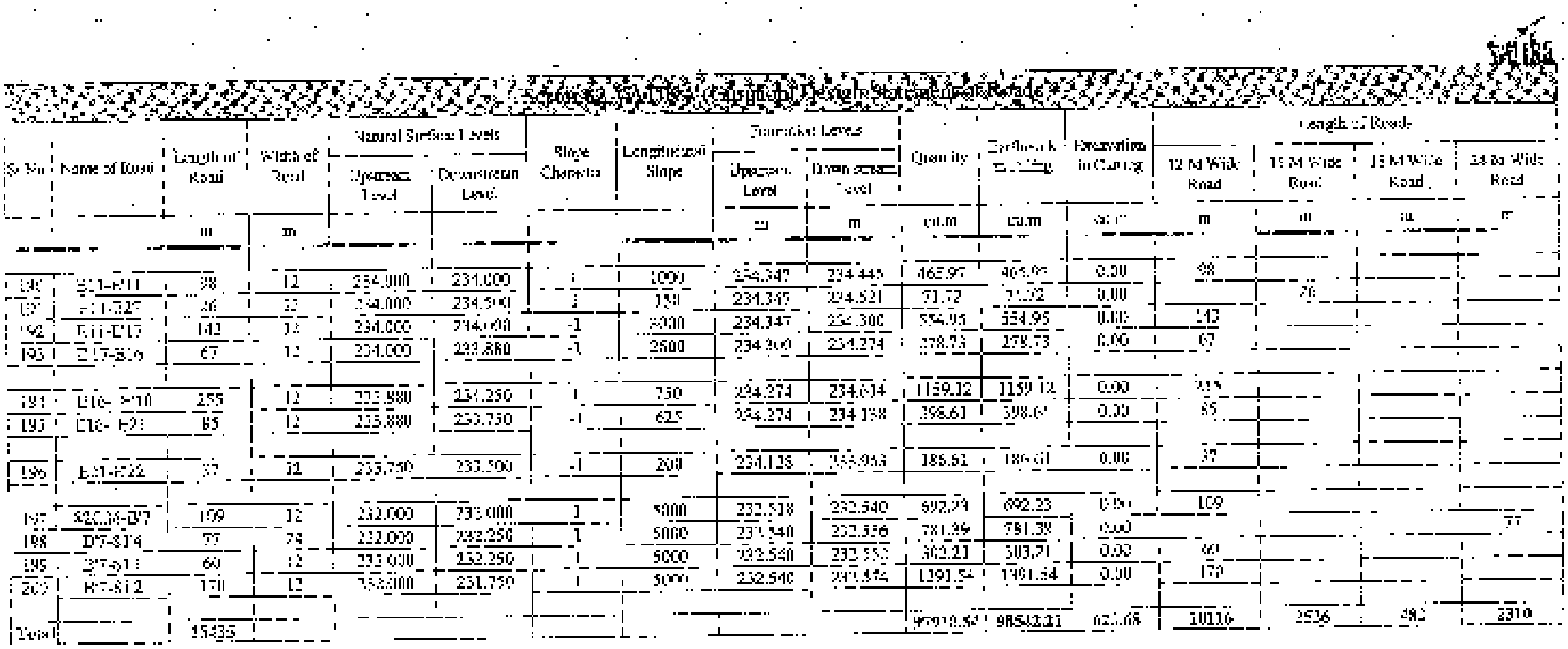
Sr.No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Embankment in Filling	Excavation in Cutting	Length of Roads			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12 M Wide Road	10 M Wide Road	18 M Wide Road	24 M Wide Road
		m	m					m	m	cum	cum	cum	m	m	m	m
106	D28-D36	67	12	232.250	232.250	1	450	232.669	232.861	414.21	414.21	0.00	67			
107	D36-D34	51	12	232.250	232.000	1	5000	232.861	232.871	453.49	453.49	0.00	51			
108	D38-D40	62	12	232.000	231.750	1	6000	232.773	232.782	671.12	671.12	0.00	62			
109	D40-D40	72	12	231.750	232.000	1	6000	232.782	232.791	789.01	789.01	0.00	72			
110	D26-D23	69	12	232.000	232.000	1	1000	232.705	232.771	612.70	612.70	0.00	69			
111	D23-D21	75	12	232.000	232.000	1	4000	232.774	232.793	686.43	686.43	0.00	75			
112	D23-D26	142	12	232.000	231.750	-1	225	232.774	233.158	1160.44	1160.44	0.00	142			
113	C16-D36	20	12	231.750	231.750	-1	350	232.338	232.380	134.15	134.15	0.00	20			
114	D26- D25	48	12	231.750	231.750	-1	2500	232.338	232.518	332.90	332.90	0.00	48			
115	D25- D28	220	12	231.500	231.500	-1	5000	232.518	232.245	1733.64	1733.64	0.00	220			
116	D28- D30	169	12	231.500	231.250	-1	500	232.245	231.907	1421.66	1421.66	0.00	169			
117	D30- D37	85	12	231.250	231.000	-1	1000	231.907	231.822	754.21	754.21	0.00	85			
118	D28- D29	106	12	231.500	231.250	1	700	232.245	232.775	1113.74	1445.74	0.00	106			
119	D29-D27	96	15	231.250	231.250	1	2000	232.775	232.870	2159.83	2159.83	0.00		96		
120	D29- D32	64	15	231.250	231.000	-1	1225	232.775	232.736	1558.94	1558.94	0.00		64		
12	D32-D34	38	12	231.000	231.500	-1	375	232.736	232.621	648.48	648.48	0.00	38			
122	D34-D35	59	12	231.500	231.250	-1	375	232.621	232.464	876.78	876.78	0.00	59			
123	D35-D36	81	12	231.250	230.750	-1	875	232.464	232.248	1618.14	1618.14	0.00	81			
124	D32- D33	67	12	231.000	231.000	-1	50	232.723	232.584	846.43	846.43	0.00	67			
125	D33-D31	60	15	231.000	231.500	1	50000	232.583	232.395	124.89	124.89	0.00		60		
126	D33-D31	61	12	231.000	231.250	-1	1400	232.583	232.399	172.74	172.74	0.00	61			
127	D31-D25	64	12	231.250	231.000	-1	1400	231.250	231.293	116.55	116.55	0.00	64			
128	D25-D24	64	12	231.000	231.000	-1	1500	231.295	231.253	209.00	209.00	0.00	64			
129	D21-D17	18	12	231.250	231.250	1	5000	231.559	231.546	19.66	19.66	0.00	18			
130	D17-D12	90	12	231.250	231.500	1	500	231.643	231.225	62.12	97.49	0.00	90			

Sr No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Length of Roads			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12 M Wide Road	15 M Wide Road	18 M Wide Road	24 M Wide Road
		m	m	m	m			m	m	cu.m	cu.m	cu.m	m	m	m	m
131	D17- D19	47	12	231.250	231.191	1	5000	231.343	231.301	50.10	50.10	0.00	47			
132	D19- 316	57	12	231.250	231.250	1	5000	231.351	231.362	69.91	56.32	0.60	57			
133	D16-D18	46	12	231.250	231.500	1	300	231.362	231.512	55.47	55.47	0.00	46			
134	D15- D16	63	12	231.450	231.250	1	3000	231.508	231.380	88.60	88.60	0.00	63			
135	D11- D15	69	15	231.250	231.550	1	2300	231.480	231.401	145.67	145.67	0.00		69		
136	D01-p10	80	12	231.350	231.120	-1	725	231.401	231.291	106.58	106.58	0.00	80			
137	D10-D9	37	12	231.120	231.000	1	5000	231.291	231.298	104.14	104.14	0.00	37			
138	D10-D11	22	12	231.120	231.120	1	5000	231.291	231.295	45.69	45.69	0.00	22			
139	D11-D7	55	15	231.550	231.370	1	390	231.401	231.342	92.16	92.16	0.00		55		
140	D7-D8	160	15	231.370	231.050	-1	875	231.342	231.360	542.95	542.95	0.00			160	
14	D8-D17	40	12	231.050	231.250	1	60	231.360	232.007	260.99	260.99	0.00	40			
142	D7-D6	55	15	231.370	231.500	1	725	231.543	231.618	119.75	119.75	0.00		55		
143	D5-D5	39	12	231.500	231.500	1	5000	231.618	231.626	57.09	57.09	0.00	39			
144	D6- D2	84	12	231.500	232.000	1	150	231.618	232.176	149.27	149.27	0.00	84			
145	25-D1	23	15	233.420	233.500	1	700	233.668	233.783	89.97	89.97	0.00		23		
146	24- B24	210	12	235.500	234.250	1	200	235.783	234.849	1091.84	1091.84	0.00	210			
147	B4-B5	59	15	233.500	233.500	1	225	233.783	234.019	318.83	318.83	0.00		59		
148	B5- B29	210	12	234.300	234.300	1	285	234.019	234.849	1327.09	1327.09	0.00	210			
149	B24-B23	54	12	234.250	234.300	1	6001	234.853	234.842	364.67	364.67	0.00	54			
150	B3-B4	65	12	233.500	233.600	-1	800	234.019	233.938	334.00	334.00	0.00	65			

Sr.No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quarry	Earthwork in Filling	Excavation in Cutting	Length of Roads			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				2.8 M Wide Road	3.5 M Wide Road	4.8 M Wide Road	7.0 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m	m
151	B3-B4	56	15	233.200	234.100	1	200	234.019	234.299	301.41	301.41	0.00		56		
152	B5- B6	69	15	234.100	234.500	1	435	234.299	234.502	150.73	150.73	0.00		69		
153	B4-B5	64	15	234.100	234.050	-1	775	234.299	234.216	175.73	155.23	0.00		64		
154	B2-D35	46	15	234.100	234.250	1	900	234.486	234.336	210.53	210.53	0.00		46		
155	D36-D37	34	15	234.250	234.230		5000	234.536	234.342	147.42	147.42	0.00		34		
156	D36-D1	90	12	234.250	234.500	1	925	234.536	234.633	226.06	226.06	0.00	90			
157	B29- B25	142	12	234.300	234.250	-1	675	234.842	234.632	787.39	787.39	0.00	142			
158	D25-D26	49	12	234.250	234.200	-1	775	234.636	234.436	186.87	186.87	0.00	19			
159	B32- B33	111	15	234.200	234.500	1	775	234.451	234.641	242.30	247.30	0.00	174			
160	B30- B31	6	12	234.200	234.000	-1	325	234.454	234.436	24.80	24.80	0.00	6			
161	D21- D35	53	12	234.000	233.900	1	6000	234.495	234.445	335.16	335.16	0.00	53			
162	B61- B60	50	12	234.000	234.000	-1	925	234.436	234.281	215.00	215.00	0.00	50			
163	B60- B59	114	12	234.000	234.250	1	600	234.281	234.509	369.92	369.92	0.00	114			
164	D30- D9	18	12	234.000	233.900	-1	325	234.281	234.226	65.60	65.60	0.00	18			
165	B58- D26	9	12	234.250	234.500	1	925	234.662	234.660	33.72	33.72	0.00	9			
166	D25- D34	124	15	234.500	234.500	1	775	234.660	234.820	557.24	557.24	0.00		124		
167	B59- B57	48	12	234.250	234.500	1	525	234.660	234.654	176.75	176.75	0.00	48			
168	B27- D28	106	15	234.500	234.750	1	1500	234.834	234.857	350.85	350.85	0.00		106		
169	B27-D22	59	12	234.500	234.750	1	1000	234.854	234.892	168.96	168.96	0.00	59			
170	D22-D21	129	12	234.750	234.800	1	1000	234.893	235.012	253.67	253.67	0.00	129			

Summary of Alignment Design Statement Sheets

Sr.No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Length of Roads			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12 M. Wide Road	15 M. Wide Road	18 M. Wide Road	24 M. Wide Road
		m	=					m	m	cu.m.	cu.m.	cu.m.	m	m	m	m
171	B1-B15	205	12	234.600	235.170	1	302	234.705	235.277	813.00	813.99	0.00	205			
172	B15- B16	121	12	235.120	234.750	1	3000	235.277	235.401	658.90	658.90	0.00	121			
173	B16- B17	26	15	234.750	234.750	1	5000	235.401	235.406	254.86	254.86	0.00		26		
174	B15-B18	13	15	234.750	234.750	1	5000	235.401	235.403	127.18	127.18	0.00		13		
175	B15-B19	10	12	235.120	235.200	1	825	235.377	235.500	133.55	133.55	0.00	60			
176	B5-B6	750	12	239.350	235.100	-1	825	239.618	233.402	487.76	487.76	0.00	125			
177	B15-B20	159	12	233.100	233.500	-1	600	233.762	233.397	56.11	56.11	0.00	59			
178	B4-B7A	130	12	236.600	233.400	-1	775	234.933	233.761	342.95	342.95	0.00	130			
179	B14-B19	189	12	233.100	233.500	-1	525	233.765	233.405	305.76	205.76	0.00	189			
180	B19-B24	62	12	235.500	233.500	-1	775	233.405	233.319	102.63	0.00	102.63	62			
181	B14-B15	94	15	233.400	234.100	-1	180	233.765	233.405	295.50	295.50	0.00		94		
182	B19-B20	68	17	233.500	233.500	-1	300	233.405	233.162	151.94	0.00	151.94	68			
183	B24-B26	84	12	233.500	233.000	-1	475	233.319	233.142	19.28	0.00	19.28	84			
184	B24-B25	22	12	233.500	234.500	1	100	233.319	233.539	18.67	0.00	18.67	22			
185	B2- B13	133	15	234.050	233.750	-1	800	234.210	234.052	460.54	460.54	0.00		133		
186	B 2- B18	152	15	233.750	234.050	-1	700	234.052	233.895	442.15	442.15	0.00		152		
187	B12- B14	56	15	234.050	233.400	-1	1100	234.052	233.777	285.50	285.50	0.00		56		
188	B18- B19	87	12	233.750	233.500	-1	275	233.835	233.411	1.02	0.00	1.02	87			
189	B12- B13	56	15	234.350	234.050	1	550	234.052	234.347	272.89	272.89	0.00		56		



Sr No	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Change in	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Cutting	Excavation in Cutting	Length of Roads			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12 M Wide Road	15 M Wide Road	18 M Wide Road	24 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m	m
190	B1-B11	38	12	234.000	234.000		1000	234.347	234.445	462.97	462.97	0.00	38			
191	B11-B27	26	12	234.000	234.500	1	1250	234.347	234.521	71.72	71.72	0.00		26		
192	B11-D17	142	12	234.000	234.000	-1	0000	234.347	234.300	554.95	554.95	0.00	142			
193	D17-B19	67	12	234.000	233.880	-1	2600	234.300	234.274	278.73	278.73	0.00	67			
194	D16-B10	255	12	233.880	234.250	1	750	234.274	234.614	1159.12	1159.12	0.00	255			
195	D16-B21	85	12	233.880	233.750	-1	625	234.274	234.198	398.61	398.61	0.00	85			
196	B21-B22	37	12	233.750	233.500	-1	200	234.138	234.066	185.61	186.61	0.00	37			
197	B22,26-D7	109	12	232.000	232.000	1	0000	232.518	232.540	692.23	692.23	0.00	109			
198	D7-B24	77	24	232.000	232.250	1	5000	232.340	232.356	781.39	781.39	0.00				77
199	D7-B1	60	12	232.000	232.250	1	5000	232.540	232.553	303.21	303.71	0.00	60			
200	B7-B12	170	12	232.000	231.750	1	5000	232.540	232.514	1391.54	1391.54	0.00	170			
Total		15435								9750.62	9852.21	62.68	10110	2536	482	2310

DESIGN STATEMENT OF WATER SUPPLY

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Abstract of Water Supply Line(s)								
Sr.No.	Description	100 mm I/D	150 mm I/D	200 mm I/D	250 mm I/D	300 mm O/D	450 mm O/D	Total Length
		m	m	m	m	m	m	m
	(Distribution Main)	DI K9						
1	Zone 1	14338	2535	1334	1116	465	280	20068
2	Zone 2	7695	1538	167	737	200	237	10594
3	Sub Total	22033	4093	1501	1853	665	517	30662
4	(Rising Main)	DI K9	DI K9	DI K9	DI K9	DI K9	DI K9	
5	HUDA Source -Boosting Station						380	380
6	Tube wells -Boosting Station		1967	352	146	169		2634
7	Sub Total	0	1967	352	146	169	380	3014
8	Total Length	22033	6060	1853	1999	834	897	33676
	Sluice Valves							
9	No.	No.	No.	No.	No.	No.	No.	No.
10	Zone 1	203	38	18	18	5	3	285
11	Zone 2	98	21	3	12	1	2	137
12	Sub Total	301	59	21	30	6	5	423
13	(Rising Main)							
14	HUDA Source -Boosting Station						2	2
15	Tube wells -Boosting Station	21	7	1	1	1		31
16	Sub Total	21	7	1	1	1	2	33
17	Total	322	66	22	31	7	7	455

For Ky Consultants Pvt. Ltd.

(Director)

vatika

Detail of Area Residential Vatica India Next,Gurgaon								Daily Water Requirement		
Sr.	Description	Size of Plot		Area of each Unit / Plot	Total Area		Total Persons	Water Allowance	Water Require-ment	Net Water Require-ment
1	Residential (Plotted)									
	Category of Plots	Width	Depth							
		m	m	Sq.m.	Sq.m.	Acres	No.	Ltrs./Capit al/ Day	Ltrs./Day	Ltrs./Day
1.11	A	4.50	12.50	56.25	27956	6.91	4473	135	603855	603855
1.12	A1	5.00	10.00	50.00	2600	0.64	468	135	63180	63180
1.13	B	8.20	18.40	150.88	21576	5.33	1931	172.5	333011	333011
1.14	C	10.54	19.04	200.68	24483	6.05	1647	172.5	284108	284108
1.15	D	8.20	18.40	150.88	54468	13.46	4874	172.5	840679	840679
1.16	E	10.60	19.04	201.82	54291	13.42	3632	172.5	626434	626434
1.17	F	10.60	24.00	254.40	33326	8.24	1769	172.5	305066	305066
1.18	F1	11.40	22.00	250.80	43388	10.72	2336	172.5	402874	402874
1.19	G	12.30	24.00	295.20	63763	15.76	2916	172.5	503010	503010
1.20	H	14.13	23.36	330.07	52481	12.97	2147	172.5	370271	370271
1.21	H1	12.98	25.77	334.49	31442	7.77	1269	172.5	218903	218903
	H2	13.68	25.00	342.00	4788	1.18	189	172.5	32603	32603
1.23	I	15.80	25.90	409.22	29464	7.28	972	172.5	167670	167670
1.24	H	14.50	28.80	417.60	418	0.10	14	172.5	2329	2329
1.25	J	15.90	25.90	411.81	9060	2.24	297	172.5	51233	51233
1.26	K	14.40	23.60	339.84	9516	2.35	378	172.5	65205	65205
1.27	L	11.62	25.91	301.07	1806	0.45	81	172.5	13973	13973
1.28	M	9.99	20.56	205.39	13967	3.45	918	172.5	158355	158355
	Sub Total				478793	118.31	30308		5042756	5042756
2	Area under Group Housing				113311	28.00	8400	172.5	1449000	1449000
3	Commercial Area			Sqm	Sq.m	Acres				
3.1	Commercial Area				52083	12.87		25000	321750	321750
3.2	Nursing Home	2.21		1127	8943	2.21		5000	40000	40000
4	Community Area			Acres	Sq.m	Acres				
4.1	High School		16.76	5.00	67825	16.76		150000	450000	450000
4.2	Primary School		4.22	1.00	17078	4.22		50000	200000	200000
4.3	Nursery School		1.54	0.20	6232	1.54		10000	60000	60000
4.4	Creche		0.75	0.20	3035	0.75		10000	30000	30000
4.5	Dispensary		2.26	1.25	9146	2.26		25000	56500	56500
4.6	Club / Community		4.11	2.00	16632	4.11		25000	102750	102750
4.7	Religious Building		0.59	0.20	2388	0.59		10000	20000	20000
4.8	Taxi Stand		3.1605	0.50	12790	3.16		5000	30000	30000
4.9	Police Post		1.02	1.02	4128	1.02		25000	25500	25500
4.10	Health Centre		2.63	2.63	10643	2.63		25000	65750	65750
	Sub Total				149896	37.04			1040500	1040500
5	Undetermined use				138644	34.26		25000	856500	856500
5	Green Area									
5.1	Organised Green - Area under Green			13.16	532862	13.16		25000	329000	
5.2	Incidental Green -			8.6	34762.2	8.59		25000	214750	
	Sub Total				88018	21.750			543750	
6	Area under Master Roads				75676	18.700		10000	187000	
7	Area under Roads				486485	120.214		10000	1202140	
	Total Area / Total Demand				1591850	393.358			10683396	8750506
	Fire Demand Plotted					550.52			9234396	7301506

For ky Consultants Pvt. Ltd.

(Director)

Abstract of Water Supply Length								
Sr. No.	Description	100 mm dia	150 mm dia	200 mm dia	250 mm dia	300mm dia	400mm dia	Total Length
		m	m	m	m	m	m	m
	(Distribution Main)	DI K9						
1	Zone 1	14338	2535	1334	1116	465	280	20068
2	Zone 2	7695	1558	167	737	200	237	10594
3	Sub Total	22033	4093	1501	1853	665	517	30662
4	(Rising Main)	DI K9	DI K9	DI K9	DI K9	DI K9	DI K9	
5	HUDA Source -Boosting Station						380	380
6	Tube wells -Boosting Station		1967	352	146	169		2634
7	Sub Total	0	1967	352	146	169	380	3014
8	Total Length	22033	6060	1853	1999	834	897	33676
	Sluice Valves							
9	No.	No.	No.	No.	No.	No.	No.	No.
10	Zone 1	203	38	18	18	5	3	285
11	Zone 2	98	21	3	12	1	2	137
12	Sub Total	301	59	21	30	6	5	422
13	(Rising Main)							
14	HUDA Source -Boosting Station						2	2
15	Tube wells -Boosting Station	21	7	1	1	1		31
16	Sub Total	21	7	1	1	1	2	33
17	Total	322	66	22	31	7	7	455

Not to Consider for Billing

Design of Pipe Line

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Fire Water Demand + Total Distributive Water Demand)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Real Loss Pressure	Terminal Head
						self	connection	total	20 HRS				
		m	mm	LPD		KLD	KLD	KLD	LPM	m	m	m	m
	1	2	3	4	5	6	7.00	8	9	10	11	12	13
1	WW-0	30	400	1144	0	0.00	7306.19	7306.19	13221.22	0.0164	0.435	0.435	25.57
2	D-82D2	27	400	1030	0	0.00	4653.33	4653.33	9694.44	0.0083	0.169	0.602	25.40
	SECTOR 82-												
3	D82-D6	92	100	7800	4329	4.33	313.03	317.36	565.17	0.0271	2.372	2.974	26.02
4	D6-D5	70	100	12052	10908	10.91	0.00	10.91	23.22	0.0001	0.002	2.976	26.02
5	D6-D7	56	100	22864	21528	21.53	280.60	302.12	629.45	0.0338	1.895	4.869	24.13
6	D7-D8	125	100	61658	56890	56.89	0.00	56.89	118.52	0.0015	0.192	6.061	23.94
7	D7-D12	56	100	12451	9919	9.92	214.39	223.31	466.06	0.0194	1.086	6.955	23.05
8	D11-D10	78	100	19277	16301	16.30	10.41	26.71	55.64	0.0001	0.001	6.964	23.03
9	D10-D14	8	100	10755	10408	10.41	0.00	10.41	21.68	0.0001	0.001	6.965	23.03
10	D11- D15	65	100	54173	13644	53.64	174.04	187.68	391.03	0.0140	0.911	7.865	22.35
11	D15- D16	62	100	13615	9250	9.25	164.79	174.04	362.59	0.0122	0.755	7.710	22.29
12	D15- D18	29	100	12750	11644	11.64	0.00	11.64	24.26	0.0001	0.002	7.712	22.29
13	D16- D19	61	100	5877	2758	2.75	150.40	153.15	319.06	0.0096	0.586	8.296	21.70
14	D19- D17	25	100	12712	11641	11.61	138.75	150.40	313.33	0.0092	0.260	8.557	21.44
15	D17-D41	66	100	24148	21630	21.63	0.00	21.63	45.06	0.0005	0.033	8.574	21.42
16	D17-D21	21	100	11301	10508	10.50	106.62	117.12	244.01	0.0059	0.123	8.698	21.32
17	D21-D33	56	100	2880	550	0.75	135.87	106.62	222.13	0.0049	0.275	8.955	21.05
18	D33-D34	35	100	29809	28477	28.47	0.00	28.47	59.32	0.0004	0.015	8.970	21.03
19	D33-D32	70	100	17999	16329	16.33	62.07	77.40	161.25	0.0027	0.190	9.145	20.85
20	D32-D31	27	100	12487	11408	11.41	0.00	11.41	23.77	0.0001	0.002	9.147	20.85
21	D32- D29	91	100	11642	9215	9.22	41.35	50.06	105.55	0.0013	0.026	9.221	20.78
22	D29- D25	67	100	21262	18706	18.71	0.00	18.71	38.97	0.0009	0.013	9.234	20.77
23	D29-D28	112	100	23600	19394	19.39	3.25	22.64	47.17	0.0008	0.021	9.255	20.75
24	D28-D27	220	100	59892	0	0.00	3.25	3.25	6.77	0.0000	0.000	9.255	20.75
25	D27- D26	48	100	5081	3250	3.25	0.00	3.25	6.77	0.0000	0.000	9.255	20.75
26	82D2- D1	31	400	1182	0	0.00	4335.97	4335.97	9033.26	0.0055	0.170	0.772	25.23
27	82D1-82F2	67	400	14792	12236	12.23	4323.72	4335.97	9033.26	0.0055	0.368	1.140	24.86
28	82F2- F7	58	300	8088	0	0.00	1874.82	1874.82	3905.88	0.0047	0.270	1.569	24.60

Sheet No:- 1

Xy consultants Pvt Ltd

Design of Pipe Line

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total water Demand - Total Recreational Water Demand)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Terminal Head
						self	previous	total	70 HRS				
		m	mm	L	l	KLD	KLD	KLD	LPM	m	m	m	m
29	T7-T20	87	200	30996	32917	32.92	0.00	32.92	68.58	0.0006	0.049	1.448	28.55
30	T7-T23	21	100	12173	11372	11.37	0.00	11.37	23.69	0.0001	0.002	1.40	28.60
31	T7- T6	136	300	40119	34911	34.93	1795.69	1830.62	3813.61	0.0045	0.614	3.013	27.99
32	T8-T23	51	200	9046	6986	6.99	30.27	37.26	77.63	0.0007	0.038	2.051	27.95
33	T23-T24	117	100	34737	30274	30.27	0.00	30.27	63.07	0.0005	0.056	2.107	27.89
34	T6-T21	36	100	9103	6986	6.99	2.33	9.32	19.41	0.0001	0.003	2.016	27.98
35	T21-T22	11	100	2748	2325	2.33	0.00	2.33	4.85	0.0000	0.000	2.016	27.98
36	T6- T5	61	300	55827	50000	50.00	1693.03	1743.03	3633.81	0.0041	0.254	2.266	27.73
37	T5-T20	28	100	5250	4182	4.18	16.47	20.65	43.03	0.0002	0.007	2.272	27.73
38	T20-T21	88	100	19829	16472	16.47	0.00	16.47	34.32	0.0002	0.014	2.286	27.71
39	T5- T4	53	250	6679	5658	4.96	1673.72	1678.37	3496.01	0.0009	0.048	2.761	27.24
40	T4-T3	9	250	2672	2329	2.33	1671.39	1673.72	3486.01	0.0009	0.008	2.844	27.16
41	T3-T12	41	100	10165	6986	6.99	0.00	6.99	0.00 14.55	0.0010	0.001	2.846	27.15
42	T3-T15	170	100	67072	60548	60.55	34.39	94.94	197.79	0.0040	0.674	3.518	26.48
43	T15-T16	55	100	9084	6986	6.99	27.41	34.39	71.65	0.0006	0.038	3.552	26.45
44	T16-T17	22	100	839	0	0.00	0.00	0.00	0.00	0.0000	0.000	3.552	26.45
45	T16-T18	12	100	458	0	0.00	27.41	27.41	57.10	0.0001	0.005	3.557	26.44
46	T18-T19	28	100	10002	9013	9.02	0.00	9.02	19.45	0.0001	0.003	3.558	26.44
47	T18-T11	86	100	35972	31193	31.19	0.00	15.09	37.69	0.0002	0.016	3.572	26.43
48	P3-P2	40	250	8855	6986	6.99	1562.47	1569.46	0.00 3269.71	0.0002	0.004	3.218	26.25
49	T2-T14	170	100	50731	44246	44.25	6.99	51.23	106.73	0.0013	0.215	3.464	26.54
50	T14-T15	57	100	9160	6986	6.99	0.00	6.99	14.55	0.0000	0.003	3.468	26.53
51	T2- T1	54	250	18812	16752	16.75	1494.49	1511.24	3148.42	0.0017	0.415	3.686	26.34
52	T1-P9	104	100	80650	79278	79.27	18.63	97.91	203.96	0.0042	0.814	4.478	25.52
53	T9-T8	66	100	21148	18630	18.63	0.00	18.63	38.81	0.0002	0.013	4.491	25.51

Sheet No: 2

Key roads Link Pvt Ltd

Design of Pipe Line

Sr.No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total Water Demand - Total Saturday Water Demand)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Terminal Head
						self	previous	total	20 HRS				
		M	mm		L	KLD	KLD	KLD	LPM	m	m	m	m
54	B1- B7	66	250	16490	13073	19.97	1382.62	1296.59	2909.56	0.0066	0.439	4.102	25.90
55	B7- B8	55	100	29979	27500	29.58	14.66	12.16	81.83	0.0009	0.057	4.160	25.84
56	B8-B33	47	100	20971	14658	14.06	0.00	11.66	30.54	0.0001	0.005	4.165	25.84
57	B7- B5	105	250	47726	23288	25.59	1417.17	1340.46	2292.62	0.0062	1.201	5.365	24.70
58	B5- B4	15	100	572	0	0.00	175.26	175.26	365.63	0.0123	0.185	5.488	24.51
59	B4- B21	211	100	25892	27845	27.95	0.00	27.95	58.32	0.0004	0.087	5.575	24.42
60	B4-B3	51	100	20600	18630	18.63	128.68	147.32	306.81	0.0039	0.485	5.971	24.03
61	B3- B23	222	100	93249	90745	90.74	19.32	110.06	229.29	0.0052	1.163	7.134	22.87
62	B23- B24	53	100	21415	19315	19.32	0.00	19.32	40.24	0.0002	0.011	7.146	22.85
63	B2-B2	57	100	20804	18630	18.63	0.00	18.63	38.81	0.0002	0.011	7.157	22.84
64	B5-B6	73	250	5748	0	0.00	1141.91	1121.91	2378.08	0.0048	0.350	5.633	24.37
65	B6- B7	91	100	75441	71973	71.97	0.00	71.97	149.94	0.0021	0.216	5.849	24.15
66	B6- B5	6	250	229	0	0.00	1069.94	1069.94	2229.03	0.0061	0.034	5.637	24.51
67	B5-B15	125	100	16412	11644	11.64	39.42	71.06	148.04	0.0029	0.290	5.947	24.05
68	B15-B20	151	100	32047	27288	27.29	13.50	40.79	84.97	0.0009	0.125	6.072	23.93
69	B20-B19	62	100	28356	13500	13.50	0.00	13.50	28.13	0.0001	0.007	6.079	23.92
70	B16-B14	54	100	20690	18630	18.63	0.00	18.63	38.81	0.0002	0.010	5.937	24.04
71	B5- B4	54	250	18361	16301	16.30	982.57	998.88	2080.99	0.0056	0.193	5.950	24.15
72	B14-B18	126	100	37409	32603	32.60	108.06	140.66	293.04	0.0082	1.035	6.855	23.12
73	B14-B19	175	100	76538	69863	69.86	18.57	89.43	186.31	0.0035	0.621	7.306	22.49
74	B20- B18	88	100	22922	19565	19.57	0.00	19.57	40.76	0.0002	0.019	7.325	22.46
75	B14- B12	57	100	20690	18630	18.63	0.00	18.63	38.81	0.0002	0.011	6.826	24.10
76	B4- B3	57	250	18475	16301	16.30	825.61	841.91	1753.99	0.0072	0.440	7.290	23.71
77	B3-B2	08	100	7251	4658	4.66	23.91	28.57	59.52	0.0004	0.022	6.316	23.88

Sheet No- 3

Sr corrections Pvt Ltd

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total Water Demand - 20% Agricultural Water Demand)	Design of Pipe Line							
						Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Terminal Head
						self	previous	w.s.	20 LPS				
		m	mm	L	L	KLD	KLD	KLD	LPM	m	m	m	m
79	BJ- BJ	67	100	26168	23912	23.91	0.00	23.91	49.82	0.0003	0.021	6.340	23.65
	-												
79	F1- F2	21	100	5439	4658	3.66	86.19	90.85	189.27	0.0037	0.077	6.366	23.63
80	BJ-BJ	80	100	3407	1500	1.50	84.69	86.19	179.56	0.0033	0.166	6.532	23.47
81	BJ6-B1	87	100	16750	43433	43.43	0.00	43.43	90.48	0.0009	0.081	6.613	23.39
82	BJ6- B1	55	100	2038	0	0.00	41.26	41.26	85.96	0.0008	0.047	6.579	23.42
84	B1-BJ5	184	100	14082	6986	6.99	34.27	41.26	85.96	0.0008	0.156	6.735	23.27
84	BJ5- BJ6	118	100	65788	22287	22.29	11.99	34.27	71.40	0.0006	0.071	6.806	23.19
85	BJ6- BJ7	16	100	10268	9658	9.66	0.00	9.66	20.12	0.0001	0.001	6.807	23.19
86	BJ6-B18	15	100	2825	2329	2.33	0.00	2.33	4.85	0.0000	0.000	6.806	23.19
	-												
87	B3- T12	327	200	28133	23288	23.29	682.91	706.20	1471.24	0.0056	0.709	6.997	23.00
88	B12- B18	325	100	42028	37360	37.36	0.00	37.36	77.83	0.0007	0.088	7.085	22.91
89	B12- E11	59	300	20060	18630	18.63	627.02	645.65	1345.10	0.0047	0.255	7.253	22.75
90	E11-E11	94	100	36823	33274	33.27	0.00	33.27	69.32	0.0006	0.053	7.305	22.69
91	E13-E17	151	300	59492	53733	53.73	537.68	591.42	1232.11	0.0040	0.606	7.856	22.14
92	BJ1- E27	6	100	2358	2329	2.33	0.00	2.33	4.85	0.0000	0.000	7.857	22.75
	-								0.00				
94	E17-E16	68	200	9254	6750	6.75	530.93	537.68	1120.17	0.0034	0.229	8.087	21.91
96	E16- E10	249	200	65484	54866	54.87	496.07	550.93	1106.11	0.0033	0.818	8.905	21.09
	-												
	SECTOR 82A-												
95	B2E10-82A1	73	200	2785	0	0.00	496.07	496.07	1033.47	0.0029	0.212	9.117	20.88
96	A1-A55	510	150	144245	77500	77.50	0.00	77.50	161.46	0.0004	0.042	9.158	20.84
	-												
97	A7-A7	56	300	4636	2500	2.50	34.27	36.77	76.61	0.0007	0.038	9.196	20.80
98	A7-A64	251	200	9680	0	0.00	34.27	34.27	71.40	0.0006	0.153	9.348	20.65
99	A61-A13	81	100	48509	0	0.00	34.27	34.27	71.40	0.0006	0.049	9.396	20.64
100	A43-A62	11	300	426	0	0.00	34.27	34.27	71.40	0.0006	0.007	9.403	20.64
101	A62-A44	65	300	12794	9315	9.32	0.00	9.32	19.41	0.0001	0.004	9.366	20.63
102	A62-A63	70	200	6670	4000	4.00	20.96	24.96	52.00	0.0003	0.023	9.388	20.61
103	A63-A15	20	300	5420	4658	4.66	0.00	4.66	9.70	0.0000	0.000	9.387	20.61
104	A63-A48	41	300	17865	16301	16.30	0.00	16.30	33.96	0.0002	0.009	9.396	20.61
	-												
105	A1-A2	56	250	6791	1658	4.66	377.14	381.79	795.40	0.0072	0.408	9.522	20.48
106	A2-A1	6	250	328	0	0.00	377.14	377.14	785.70	0.0071	0.042	9.563	20.44

Design of Pipe Line

Sr. No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total Water Demand - Total Industrial Water Demand)	Net Water Demand			Total Water Demand	Head Loss 'm'	Total Head Loss	Head Loss Progressive	Terminal Head
						self	previous	tot.					
		m	mm	l	KLD	KLD	KLD	KLD	LPM	ω	m	m	m
107	A1-A58	71	150	7823	5000	5.00	372.14	377.14	786.70	0.0071	0.524	10.000	10.91
108	A58-A5	95	150	29240	25616	25.62	346.52	372.14	775.38	0.0060	0.686	10.745	10.26
109	A9-A8	16	100	3015	2329	2.33	0.00	2.33	4.85	0.0001	0.000	10.745	9.26
110	A5-A10	67	150	6528	13973	13.97	330.22	344.19	717.06	0.0060	0.401	11.146	18.85
111	A10-A23	88	100	40172	39815	39.82	87.80	127.37	265.33	0.0008	0.601	11.746	18.25
112	A22-A29	88	100	7185	3820	3.83	83.67	87.50	182.28	0.0004	0.308	12.054	17.95
113	A22-A24	107	100	34081	10000	10.00	73.67	83.67	174.31	0.0031	0.536	12.589	17.62
114	A24-A25	94	100	29520	27079	27.08	46.59	73.67	153.37	0.0025	0.389	12.941	17.46
115	A25-A26	74	100	28439	25616	25.62	20.97	46.59	97.06	0.0011	0.079	13.019	17.36
116	A26-A27	73	100	2783	0	0.00	20.97	20.97	43.68	0.0009	0.018	13.037	17.34
117	A27-A28	80	100	24021	20973	20.97	0.00	20.97	43.65	0.0002	0.019	13.056	17.31
118	A28-A14	106	150	17903	13973	13.97	188.95	202.91	422.72	0.0022	0.231	13.287	18.62
119	A14-A59	71	100	5208	2500	2.50	14.32	16.82	35.03	0.0003	0.021	13.308	18.61
120	A59-A60	44	100	15997	14313	14.32	0.00	14.32	29.82	0.0001	0.005	13.313	18.61
121	A16-A15	25	150	3282	2329	2.33	169.79	172.12	358.58	0.0017	0.041	13.475	18.59
122	A15-A16	76	100	16200	16030	16.30	0.00	16.30	33.96	0.0002	0.012	13.488	18.57
123	A15-A20	29	150	5535	4658	4.66	148.89	153.49	319.77	0.0013	0.031	13.519	18.55
124	A20-A21	29	100	5582	4658	4.66	0.00	4.66	9.70	0.0000	0.000	13.519	18.55
125	A20-A16	70	150	17643	13973	13.97	130.20	144.17	300.36	0.0013	0.084	13.602	18.47
126	A16-A17	39	150	8471	6986	6.99	123.72	130.20	271.25	0.0021	0.273	13.875	18.19
127	A17-A18	17	100	10420	10000	10.00	0.00	10.00	20.83	0.0001	0.001	13.877	18.19
128	A17-A3	74	100	14466	11924	11.84	101.55	113.22	235.86	0.0055	0.407	14.284	17.78
129	A3-A60	97	100	17672	13973	13.97	0.00	13.97	29.11	0.0001	0.011	14.295	18.47
130	A3-A6	71	100	2708	0	0.00	87.60	87.60	182.50	0.0034	0.243	14.538	18.54
131	A6-A37	13	100	496	0	0.00	15.32	15.32	31.91	0.0001	0.002	14.541	17.54
132	A37-A57	42	100	6902	5000	5.00	0.00	5.00	10.42	0.0000	0.001	14.542	17.54
133	A37-A36	10	100	1144	0	0.00	10.32	10.32	21.49	0.0001	0.002	14.544	17.53
134	A36-A35	50	100	12222	10315	10.32	0.00	10.32	21.49	0.0001	0.003	14.546	17.53

Design of Pipe Line

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total Water Demand - Net Particular Water Consumption)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Effective Head Loss (Head Loss - Static Head)	Terminal Head
						self	previous	total	90 PHS				
		m	mm	L	L	KLD	KLD	KLD	LPM	m	m	m	m
129	A0-A32	49	100	10498	4658	4.66	67.03	72.28	150.59	0.0024	0.103	12.562	17.44
130	A32-A31	55	100	11413	9532	9.52	41.59	50.98	106.05	0.0019	0.069	12.531	17.37
137	A32-A36	54	100	14454	12394	12.39	4.33	16.72	34.84	0.0002	0.009	12.571	17.43
138	A35-A33	49	100	6698	4333	4.33	0.00	4.33	9.02	0.0000	0.001	12.571	17.43
139	A31-A49	28	100	7726	6658	6.66	0.00	6.66	13.87	0.0000	0.000	12.632	17.37
140	82A31-82A32	77	100	30882	27945	27.95	6.99	34.95	72.77	0.0006	0.048	12.679	17.32
141	82A31-82A31	25	100	7940	6986	6.99	0.00	6.99	14.55	0.0000	0.001	12.680	17.32
142	P25-P27	36	400	9488	4658	4.66	2444.25	2448.91	5101.89	0.0019	0.093	1.231	28.77
143	P27-P28	149	100	59016	51283	51.28	21.80	73.08	152.15	0.0024	0.364	1.595	28.41
144	P28-P31	15	100	7482	6986	6.99	0.00	6.99	14.55	0.0000	0.000	1.595	28.41
145	P28-P35	91	100	9327	1000	1.00	13.82	14.82	30.86	0.0001	0.008	1.602	28.40
146	P35-D34	41	100	15275	13815	13.82	0.00	13.82	28.78	0.0001	0.005	1.607	28.39
147	D27- D32	47	250	18293	16509	16.50	2358.71	2371.21	4940.02	0.0034	0.162	1.362	28.61
148	D32-D38	33	250	14008	11586	11.59	2342.74	2354.33	4905.06	0.0034	0.110	.572	28.49
149	D38-D39	62	100	2365	0	0.00	17.72	17.72	36.92	0.0002	0.011	1.583	28.42
150	D39-D40	47	100	19515	17733	17.72	0.00	17.72	36.92	0.0002	0.008	1.592	28.41
151	D38- D20	180	350	48784	41918	41.92	2288.09	2325.01	4843.76	0.0033	0.597	2.170	27.85
152	82D20-82P30	51	250	7945	6000	6.00	525.43	531.43	1107.14	0.0011	0.057	2.226	27.77
153	P30-P31	25	100	5532	4559	4.56	0.00	4.56	9.51	0.0000	0.000	2.227	27.77
154	P30-C8	61	200	6027	4000	4.00	516.85	520.85	1085.10	0.0002	0.013	2.429	27.58
155	C8-C29	62	100	18337	15973	15.97	0.00	15.97	33.28	0.0001	0.009	2.429	27.57
156	C8-C18	38	200	3473	2929	2.93	488.55	500.58	1043.49	0.0029	0.088	2.508	27.49
157	C18- C7	26	200	3321	2929	2.93	496.22	499.55	1038.64	0.0029	0.076	2.584	27.42
158	C7-C27	62	300	23889	21486	21.49	474.72	496.22	1033.59	0.0020	0.133	2.767	27.23
159	C27-C25	125	200	9268	4500	4.50	470.23	474.73	989.02	0.0027	0.334	3.101	26.90
160	C25-C26	69	200	14276	11644	11.64	458.59	470.23	979.65	0.0026	0.181	3.282	26.72
161	C26-C27	31	100	30291	9315	9.32	0.00	9.32	19.41	0.0001	0.003	3.285	26.72
162	C26-C45	39	200	9556	2250	2.25	441.03	448.28	934.08	0.0024	0.070	3.355	26.65
163	C45-C44	38	200	2159	750	0.75	446.28	447.03	931.50	0.0024	0.091	3.446	26.55
164	C44-C42	57	150	25712	21588	21.54	422.74	444.28	929.78	0.0057	0.551	3.998	26.01

Design of Pipe Line

Sr No	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Only Water Demand Not Domestic Water Demand)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Terminal Head
						self	previous	total	30 HRS				
		m	mm	L	L	KLD	KLD	KLD	LPM	m	m	m	m
165	C42-C43	57	100	2174	0	0.00	8.09	8.09	18.72	0.0001	0.005	3.007	36.60
166	C43-C13	36	100	10359	8986	8.09	0.00	8.09	18.72	0.0001	0.002	3.009	36.60
167	C42-C24	91	150	20036	16505	16.57	397.19	413.75	861.98	0.0009	0.765	4.759	35.24
168	C24- C22	36	150	3872	2500	2.50	394.69	397.19	827.47	0.0008	0.281	5.039	34.96
169	C22- C21	61	150	14518	6986	6.99	387.70	394.69	822.26	0.0007	0.459	5.498	34.50
170	C21-C21	10	100	2710	2339	2.35	0.00	2.35	4.85	0.0000	0.000	5.498	34.50
171	C21-C1	170	150	52166	45085	45.08	339.69	385.37	802.86	0.0074	1.255	6.753	33.22
172	C1-B35	61	100	4770	2509	2.35	24.49	26.82	55.86	0.0004	0.024	6.809	33.19
173	B35- C2	27	100	3550	1500	1.50	21.74	23.24	48.41	0.0003	0.008	6.817	33.18
174	C2- C4	82	100	24065	21736	21.74	0.00	21.74	45.28	0.0003	0.016	6.833	33.17
175	P35-P32	95	100	3885	1250	1.25	0.00	1.25	2.60	0.0000	0.000	6.809	33.12
176	C1- B11	66	150	9504	6986	6.99	305.89	312.88	651.82	0.0050	0.231	7.115	32.88
177	B11-B12	124	100	67452	62733	62.73	0.00	62.73	130.67	0.0013	0.229	7.344	32.66
178	B11-B10	34	100	23019	20959	20.96	322.21	343.17	906.80	0.0226	1.252	8.598	31.66
179	B10-P32	92	100	14574	11068	11.07	0.00	11.07	23.05	0.0003	0.007	8.944	31.66
180	B10- B9	56	100	16701	14565	14.57	196.58	211.14	439.88	0.0174	0.976	9.919	30.69
181	B9- B31	62	100	41601	6986	6.99	189.59	195.58	409.91	0.0152	0.946	10.865	29.74
182	B31- B33	11	100	6221	4658	4.66	0.00	4.66	9.70	0.0000	0.001	10.866	29.74
183	B31- B33	7	100	267	0	0.00	184.93	184.93	385.28	0.0138	0.095	10.961	29.64
184	B32- B35	118	100	40432	35931	35.93	0.00	35.93	74.86	0.0037	0.437	11.398	29.20
185	B32-B25	68	100	18132	16501	16.50	132.70	149.20	310.42	0.0091	0.619	12.017	28.58
186	B25- B23	73	100	28386	25618	25.62	0.00	25.62	53.37	0.0014	0.105	12.122	28.48
187	B25- B26	11	100	420	0	0.00	107.02	107.02	223.00	0.0058	0.064	12.186	28.42
188	B26- B34	126	100	37936	32130	33.13	0.00	33.13	69.02	0.0036	0.454	12.640	27.96
189	B26- B27	47	100	11608	9815	9.82	64.14	73.96	154.07	0.0025	0.117	12.757	27.85
190	B27- B28	89	100	29791	26966	26.97	0.00	26.97	56.20	0.0015	0.134	12.891	27.71
191	B27- B22	57	100	2174	0	0.00	37.77	37.77	78.70	0.0007	0.041	12.932	27.67
192	B28-B22-B2B21	87	100	41892	37774	37.77	0.00	37.77	78.70	0.0007	0.063	12.995	27.61

Sheet No: 7

Jay consultants Pvt Ltd

Design of Pipe Line

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Cost Water Demand - Total Hydrostatic Water Pressure)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progression	Terminal Head
						self	previous	total	20 HRS				
		m	mm	L		KLD	KLD	KLD	LPM	m	m	m	m
193	S2D170	69	200	5132	2500	2.50	1748.38	1751.08	3649.29	0.0012	0.387	2.457	27.54
194	D22- D24	75	100	19162	16301	16.30	0.00	16.30	33.96	0.0005	0.011	2.468	27.53
195	D23-D26	144	300	2212	1750	1.75	1731.11	1732.86	3610.12	0.0041	0.587	3.044	26.96
196	D26-S2D216	27	350	1039	0	0.00	1731.11	1731.11	3606.48	0.0009	0.067	3.111	26.89
197	S2C18-S2C52	237	150	76510	64259	64.27	460.76	524.99	1093.72	0.0131	3.835	6.946	23.05
198	C52-C53	81	100	3090	0	0.00	54.98	54.98	114.55	0.0014	0.119	6.262	23.74
199	C53-C54	118	100	80216	54983	54.98	0.00	54.98	114.55	0.0014	0.169	6.261	23.54
200	C38-C28	24	150	915	0	0.00	405.77	405.77	845.36	0.0081	0.195	6.341	23.66
201	C38-C40	38	100	9809	4579	4.58	0.00	4.58	9.54	0.0000	0.001	6.342	23.66
202	C28-C36	81	150	3204	0	0.00	401.20	401.20	835.82	0.0079	0.667	7.009	22.99
203	C36-C14	119	100	57805	49681	49.68	0.00	49.68	103.50	0.0012	0.178	7.188	22.81
204	C36-C35	60	150	2289	0	0.00	351.51	351.51	732.32	0.0062	0.373	7.560	22.63
205	C35-C12	155	100	78153	72136	72.13	0.00	72.13	150.26	0.0024	0.377	7.937	22.34
206	C35-C50	72	150	10486	0	0.00	279.39	279.39	582.06	0.0041	0.292	7.672	22.66
207	C50-C51	49	100	28835	25801	25.80	0.00	25.80	53.75	0.0004	0.028	7.700	22.30
208	C50-C33	66	100	2518	0	0.00	11.74	11.74	24.45	0.0001	0.005	7.675	22.32
209	C33-C48	137	100	25462	11736	11.74	0.00	11.74	24.45	0.0001	0.011	7.686	22.31
210	C50-C34	89	100	21208	6563	6.56	255.29	341.85	502.86	0.0024	1.594	9.687	20.33
211	C34-S37	87	100	53919	50000	50.00	150.00	200.00	416.67	0.0158	1.373	11.060	18.96
212	A17-B12	100	100	153814	150000	150.00	0.00	150.00	312.50	0.0093	0.925	11.985	18.08
213	C34-C31	56	100	90405	0	0.00	35.29	35.29	73.52	0.0006	0.036	9.702	20.30
214	C31-C32	58	100	12071	10746	10.74	0.00	10.74	22.37	0.0001	0.002	9.705	20.30
215	C31-C30	59	100	9257	6986	6.99	17.57	24.55	51.15	0.0006	0.019	9.721	20.28
216	C30-C30	10	100	2710	2329	2.33	0.00	2.33	4.85	0.0000	0.000	9.721	20.28
217	S2C30-S2C49	52	100	17220	15236	15.24	0.00	15.24	31.74	0.0001	0.007	9.728	20.27
218	S2C30-S2C18	43	250	7469	5829	5.83	1200.29	1206.12	2512.75	0.0051	0.218	9.509	20.47

Design of Pipe Line

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total Water Demand - Total Recirculation Water Demand)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Terminal Head
						self	previous	total	30 HRS				
		m	mm	L	–	KLD	KLD	KLD	LPM	m	m	m	m
219	C18-C20	81	250	9000	0	0.00	1200.29	1200.29	2500.61	0.0050	0.407	1.935	26.06
220	B2C20-B2C54	135	250	5150	0	0.00	1200.29	1200.29	2500.61	0.0050	0.678	2.613	25.38
221	B2C54-B3C41	55	100	49630	39233	19.22	0.00	19.22	40.05	0.0002	0.011	2.626	25.37
222	B3C41-B3B28	71	250	2708	0	0.00	1181.07	1181.07	2460.56	0.0049	0.346	2.959	25.03
223	B26-B25	30	250	1144	0	0.00	1181.07	1181.07	2460.56	0.0049	0.146	3.105	24.90
224	B25-B21	75	250	29261	12150	12.15	1168.92	1181.07	2460.56	0.0049	0.368	3.473	24.53
225	B21-B20	45	250	4571	0	0.00	1155.85	1155.85	2407.40	0.0047	0.211	3.684	24.32
226	B21-B29	51	100	19449	13305	13.37	0.00	13.37	27.84	0.0001	0.005	3.689	24.31
227	B20-B24	48	100	34701	21870	21.87	0.00	21.87	45.56	0.0003	0.015	3.704	24.29
228	B24-B30	94	100	42146	37065	37.07	0.00	37.07	28.47	0.0007	0.067	3.771	24.23
229	B29-B30	90	100	1526	0	0.00	0.00	0.00	0.00	0.0000	0.000	3.475	24.52
230	B2C-B30	47	300	4214	0	0.00	1096.02	1096.02	2285.27	0.0125	0.591	6.272	23.73
231	B30-B31	133	100	63008	57105	57.11	0.00	57.11	118.97	0.0015	0.206	6.477	23.52
232	B30-B31	40	100	1526	0	0.00	0.00	0.00	0.00	0.0000	0.000	6.477	23.52
233	B18-B18	41	200	2607	0	0.00	1008.91	1008.91	2364.48	0.0114	0.467	6.759	23.26
234	B18-B23	156	150	75041	68040	68.04	427.50	495.54	1032.37	0.0113	1.831	8.590	21.43
235	B18-B17	25	200	3728	2100	2.10	541.38	543.38	1132.03	0.0094	0.089	6.828	23.17
236	B17-B22	75	100	25946	23085	23.09	0.00	23.09	48.09	0.0003	0.022	6.850	23.15
237	B17-B34	167	100	89059	75330	75.33	0.00	75.33	156.94	0.0026	0.431	7.281	22.72
238	B33-B21	36	150	36873	29000	29.00	402.50	427.50	890.62	0.0089	0.321	8.821	21.41
239	B17-B16	52	150	9046	0	0.00	442.86	442.86	922.63	0.0095	0.496	7.324	22.66
240	B16-B35	190	100	89406	81405	81.41	0.00	81.41	169.59	0.0030	0.567	7.890	22.11
241	B34-B35	37	150	1411	0	0.00	402.50	402.50	838.54	0.0080	0.296	8.187	20.81
242	B16-B15	37	150	10691	8505	8.51	326.32	334.73	697.58	0.0057	0.210	7.534	22.67
243	B10-B22	59	100	29981	26750	26.73	0.00	26.73	55.69	0.0004	0.022	7.346	22.65
244	B15-B36	170	100	59523	52810	52.81	0.00	52.81	110.02	0.0013	0.226	7.769	22.23
245	B35-B36	39	150	1488	0	0.00	402.50	402.50	838.54	0.0080	0.311	8.498	20.50
246	B36-C1	62	150	2865	500	0.50	402.00	402.50	838.54	0.0080	0.495	8.993	20.01

Design of Pipe Line

Sr No	Name of Node	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Govt Water Demand + Total Stormwater Water Demand)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Terminal Head
						self	previous	total	At HRS				
		m	mm	L	l	KLD	KLD	KLD	LPM	m	m	m	m
247	B13-B14	82	150	2352	950	8.75	272.66	272.41	500.80	0.0039	0.194	9.698	22.30
248	B14-B5	52	150	25270	22288	22.20	249.37	272.86	508.04	0.0039	0.203	9.859	22.10
249	B7-B12	38	100	13093	1614	11.64	0.00	17.64	24.26	0.0001	0.005	7.903	22.49
250	B7-B8	67	150	3556	0	0.00	237.75	237.75	495.27	0.0030	0.202	8.101	21.90
251	B8-B11	58	100	20842	18630	18.63	0.00	18.63	38.81	0.0002	0.01	8.113	21.89
252	B6-B5	32	150	1231	0	0.00	219.10	219.10	456.46	0.0026	0.083	8.196	21.80
253	B6-B10	38	100	24737	23288	23.29	0.00	23.29	48.52	0.0003	0.011	8.207	21.71
254	B5-B4	48	150	1851	0	0.00	195.81	195.81	407.94	0.0021	0.101	8.308	21.71
255	B4-B9	38	100	13093	11614	11.64	0.00	11.64	24.26	0.0001	0.004	8.313	21.66
256	B4-B3	31	150	3511	2329	2.33	181.83	181.17	383.68	0.0019	0.058	8.371	21.56
257	B3-B8	27	100	8026	6986	6.99	0.00	6.99	14.56	0.0000	0.001	8.374	21.57
258	B3-B2	65	150	60546	54500	54.50	120.35	174.85	364.28	0.0017	0.488	8.862	21.28
259	B2-B1	15	100	572	0	0.00	120.35	120.35	250.73	0.0062	0.092	8.954	21.28
260	B2-B1	136	100	35992	22304	22.39	97.96	120.35	250.73	0.0062	0.850	9.804	20.32
261	B5B1-B5A1	36	100	877	0	0.00	97.96	97.96	204.08	0.0042	0.097	9.900	20.22
262	A1-A7	35	100	59135	52000	52.00	0.00	52.00	108.33	0.0013	0.099	9.878	20.12
263	A2-A1	75	100	27196	25000	25.00	20.96	45.96	95.75	0.0010	0.098	9.858	20.16
264	A2-A4	56	100	5200	0	0.00	20.96	20.96	43.66	0.0002	0.023	9.863	20.14
265	A4-A5	97	100	32838	20959	20.96	0.00	20.96	43.66	0.0002	0.012	9.874	20.13
266	C1-C2	30	150	2144	1000	1.00	401.00	402.00	837.49	0.0080	0.239	10.232	19.77
267	C2-C15	29	100	1106	0	0.00	103.22	103.22	215.02	0.0049	0.144	10.367	19.63
268	C15-C19	57	100	28540	26366	26.37	0.00	26.37	54.93	0.0004	0.021	10.388	19.61
269	C15-C16	42	100	15842	13975	13.97	62.88	76.85	160.10	0.0023	0.132	10.520	19.50
270	C16-C18	50	100	13589	11644	11.64	0.00	11.64	24.26	0.0001	0.004	10.524	19.50
271	C16-C17	75	100	27162	16501	16.50	34.93	51.43	106.75	0.0015	0.095	10.619	19.41
272	C17-C19	99	100	38479	34991	34.93	0.00	34.93	72.77	0.0008	0.058	10.677	19.35
273	C3-B40	38	100	1144	0	0.00	106.10	106.10	221.09	0.0049	0.145	10.379	19.62
274	B40-B41	130	100	53879	48920	48.92	0.00	48.92	101.92	0.0018	0.151	10.530	19.47
275	B40-B45	141	100	62593	57175	57.18	0.00	57.18	119.11	0.0016	0.219	10.697	19.40
276	C2-C4	52	150	1984	0	0.00	191.69	191.69	399.35	0.0020	0.103	10.338	19.66
277	C4-C20	109	100	55061	50904	50.90	0.00	50.90	106.05	0.0013	0.136	10.474	19.53
278	C4-C5	28	150	877	0	0.00	140.78	140.78	293.30	0.0011	0.026	10.500	19.64

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Design of Pipe Line

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total Water Demand - Total Cumulative Water Demand)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Vertical Sheet
						self	previous	total	20 HRS				
		m	mm	L	L	KLD	KLD	KLD	LPM	m	m	m	m
279	C5-B37	28	100	24107	18225	18.23	31.72	49.95	104.06	0.0032	0.135	10.315	19.48
280	B37 T012	28	100	1068	0	0.00	31.72	31.72	66.09	0.0005	0.015	10.523	19.47
281	B38-T039	91	100	34211	31725	31.73	0.00	31.73	66.09	0.0005	0.049	10.582	19.43
282	C5-C6	78	300	2975	0	0.00	90.83	90.83	189.24	0.0037	0.285	10.615	19.35
283	C6-C7	68	100	11302	7364	7.36	25.02	33.38	69.12	0.0006	0.055	10.705	19.30
284	C7-C9	111	100	29850	25616	25.62	7.99	25.02	52.57	0.0004	0.039	10.744	19.26
285	C6-C9	45	100	12967	0	0.00	57.65	57.65	120.11	0.0016	0.071	10.720	19.28
286	C9-C10	95	100	3621	0	0.00	57.65	57.65	120.11	0.0016	0.150	10.870	19.13
287	C10-C14	77	100	42526	39589	39.59	0.00	39.59	82.48	0.0008	0.060	10.960	19.07
288	C10-C11	58	100	7212	5000	5.00	13.07	18.07	37.64	0.0002	0.011	10.886	19.12
289	C11-A31	90	100	13854	11565	11.57	0.00	11.57	24.09	0.0001	0.008	10.885	19.11
290	B5C11-B5C12	88	100	3712	1500	1.50	0.00	1.50	3.13	0.0000	0.000	10.880	19.12
				5969325	4658329								
291	C- B2D2	35	400	13821	12486	12.49	2640.37	2652.86	5526.78	0.0022	0.077	6.510	23.40
292	B2D2-D13	142	400	5427	0	0.00	2640.37	2640.37	5500.77	0.0022	0.313	6.824	23.18
293	D13-D12	22	400	829	0	0.00	2640.37	2640.37	5500.77	0.0022	0.048	6.872	23.15
294	B2P12-A3	225	400	8583	0	0.00	2640.37	2640.37	5500.77	0.0022	0.495	7.367	23.04
	SECTOR B3-												
295	A3-B3-A35	83	400	3166	0	0.00	2640.37	2640.37	5500.77	0.0022	0.182	7.549	23.46
296	A35-A39	77	350	25997	20000	20.00	2620.37	2640.37	5500.77	0.0041	0.315	7.865	23.18
297	A49-A50	160	350	30603	24500	24.50	2595.87	2620.37	5459.10	0.0041	0.662	8.528	22.87
298	A50-A42	155	100	30621	24709	24.71	0.00	24.71	51.48	0.0005	0.081	8.608	22.79
299	A50-A51	60	200	4789	2500	2.50	2568.66	2571.16	5356.59	0.0085	0.508	9.037	22.36
300	A51-A40	20	100	992	0	0.00	171.03	171.03	356.32	0.0118	0.309	8.349	22.46
301	A40-A28	41	100	7471	5908	5.91	165.13	171.03	356.32	0.0118	0.484	8.828	22.17
302	A28-A56	17	100	1648	1000	1.00	40.54	41.54	86.59	0.0009	0.015	8.842	22.15
303	A56-A57	155	100	48950	40538	40.54	0.00	40.54	84.45	0.0008	0.127	8.969	22.03
304	A35-A32	89	300	3053	0	0.00	123.59	123.59	257.48	0.0065	0.577	8.545	22.46

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Design of Pipe Line

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total Water Demand - Total Recreation Water Demand)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Bend Loss @ 0.05 per bend	Terminal Load
						self	previous	C/S					
		m	mm	l	L	KLD	KLD	KLD	LPM	m	m	m	m
305	A32-A31	104	100	24711	20620	20.63	24.21	44.84	93.41	0.0010	0.109	4.450	25.55
306	A31-A29	53	100	26230	24309	24.31	0.00	24.31	50.49	0.0003	0.017	4.467	25.53
307	A32-A33	82	300	74878	71790	71.75	7.00	78.75	104.06	0.0028	0.230	4.575	25.43
308	A33-A34	60	100	6289	4000	4.00	3.00	7.00	14.58	0.0000	0.000	4.577	25.42
309	A34-A31	58	100	3212	3000	3.00	0.00	3.00	6.95	0.0001	0.000	4.577	25.42
310	A31-A41	140	300	43128	26578	26.54	2271.09	2297.63	4265.06	0.0074	1.041	4.679	25.92
311	A41-B7	30	350	8131	6986	6.99	1021.59	1028.58	2142.87	0.0068	0.113	4.182	25.81
312	B7-B5	212	100	114539	81445	81.55	71.11	152.56	317.83	0.0085	0.024	6.235	23.78
313	B5-B4	48	100	1869	0	0.00	0.00	0.00	0.00	0.0000	0.000	6.235	23.78
314	B5-B15	83	100	11738	9915	9.92	61.80	71.11	148.15	0.0003	0.146	6.360	23.64
315	B15-B16	119	100	36063	30775	30.77	0.00	30.77	64.11	0.0005	0.059	6.420	23.58
316	B15-B17	58	100	34580	31021	31.02	0.00	31.02	64.63	0.0005	0.029	6.448	23.55
317	B7-B/A37	23	250	4456	3579	3.58	865.45	869.03	1810.49	0.0028	0.065	6.255	25.74
318	A37-B20	229	250	8755	0	0.00	865.45	865.45	1803.01	0.0027	0.627	4.883	25.12
319	B20-B21	60	200	87289	155000	155.00	710.45	865.45	1803.05	0.0081	0.487	5.370	24.62
320	B21-B27	159	100	30415	24380	24.38	102.27	126.65	263.86	0.0008	1.075	6.445	23.55
321	B27-B26	56	80	6715	4575	4.58	38.43	53.01	110.44	0.0013	0.075	6.521	23.48
322	B26-B28	95	150	52055	48431	48.43	0.00	48.43	100.90	0.0011	0.105	6.630	23.37
323	B27-B29	107	100	2271	18630	18.63	8.16	26.79	55.82	0.0004	0.041	6.486	23.51
324	B29-B30	7	100	3750	3503	3.50	0.00	3.50	7.30	0.0000	0.000	6.486	23.51
325	B29-B34	54	100	5954	4658	4.66	0.00	4.66	9.71	0.0000	0.001	6.486	23.51
326	B27-B33	90	100	37155	22472	22.47	0.00	22.47	46.82	0.0003	0.025	6.470	23.53
327	B33-B34	49	100	1869	0	0.00	0.00	0.00	0.00	0.0000	0.000	6.470	23.53
328	B34-B35	16	100	1755	0	0.00	0.00	0.00	0.00	0.0000	0.000	6.470	23.53
329	B21-B22	42	200	6189	4949	4.95	578.85	583.80	1216.26	0.0030	0.125	6.595	24.50

Design of Pipe Line

Sr No	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total Water Demand - Total Recirculated Water Demand)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Terminal Head
						self	previous	total	20 HRS				
		L	mm	L	L	KLD	KLD	KLD	LPM	m	m	m	m
330	P22-A22	75	200	2861	0	0.00	578.85	578.85	1205.85	0.0039	0.289	5.784	21.22
331	A22-A21	82	100	19785	16658	16.66	0.00	16.66	34.70	0.0002	0.015	5.797	21.20
332	A22-B22	33	150	1250	0	0.00	562.20	562.20	1171.24	0.0148	0.489	6.271	23.73
333	B22-B23	30	150	6644	5600	5.58	556.70	562.20	1171.24	0.0148	0.445	6.716	23.28
334	B23-B25	87	150	30397	29079	7.08	549.62	556.70	1159.38	0.0146	1.267	7.983	22.01
335	A11-A59	139	100	44790	39603	39.60	13.24	52.84	110.08	0.0015	0.182	8.166	21.83
336	A59-A60	207	100	17318	13246	13.24	0.00	13.24	27.58	0.0001	0.013	8.179	21.82
337	A14-A11	36	150	21516	19480	39.18	477.40	196.78	1094.95	0.0118	0.669	8.646	21.35
338	A13-A14	181	150	40864	40760	40.76	436.64	477.40	994.58	0.0110	1.983	10.629	20.37
339	A11-A13	29	100	15842	13973	13.97	0.00	13.97	29.11	0.0001	0.006	10.635	19.37
340	A10-A7	53	150	15984	13973	13.97	275.52	289.29	602.70	0.0043	0.230	10.859	19.14
341	A7-A9	95	100	36976	33353	33.35	0.00	33.35	69.48	0.0006	0.054	10.913	19.09
342	A7-A20	70	100	18643	13973	13.97	0.00	13.97	29.11	0.0001	0.008	10.867	19.13
343	A7-A8	56	150	20309	13973	13.97	214.02	228.00	474.99	0.0028	0.156	11.015	18.98
344	A8-A6	62	100	11503	9158	9.16	0.00	9.16	19.08	0.0001	0.003	11.018	18.98
345	A8-A4	22	100	69680	65758	65.75	0.00	65.75	136.98	0.0020	0.044	11.059	18.94
346	A4-A5	130	100	65207	56616	56.62	82.50	139.13	289.89	0.0060	1.601	12.660	17.38
347	A5-A2	93	100	85162	83500	83.50	0.00	83.50	173.95	0.0031	0.151	12.747	17.25
348	A10-A9	101	100	81150	44246	46.25	89.13	135.37	277.86	0.0074	1.347	14.095	15.92
349	A9-A6	51	100	19252	6986	6.99	98.62	45.62	95.03	0.0010	0.054	12.050	17.87
350	A6-A20	43	100	19955	18355	18.32	0.00	18.32	38.16	0.0002	0.008	12.058	17.90
351	A6-A5	58	100	19349	6986	6.99	13.33	20.32	42.32	0.0002	0.013	12.045	17.90
352	A5-A3	37	100	14743	13329	13.33	0.00	13.33	27.77	0.0001	0.004	12.047	17.88
353	A9-A12	50	100	19046	6986	6.99	36.52	65.51	98.65	0.0009	0.033	12.028	17.97
354	A12-A19	54	100	20532	18473	18.47	0.00	18.47	38.48	0.0002	0.010	12.039	17.96
355	A12-A13	51	100	19232	6986	6.99	11.07	18.05	37.61	0.0002	0.010	12.039	17.96
356	A13-A16	38	100	7857	6408	6.41	0.00	6.41	13.35	0.0000	0.000	12.039	17.96
357	183A13-83A18	25	100	5916	4658	4.66	0.00	4.66	9.71	0.0000	0.000	12.039	17.96

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total water Demand - Total Cumulative Water Saved)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Nominal Head
						self	previous	total	20 HRS				
		m	mm		L	KLD	KLD	KLD	LPM	m	m	m	m
368	A41-F4	20	350	7749	6986	6.99	1335.63	1342.61	2796.90	0.0062	0.124	4.502	35.961
366	E6-E8	211	150	77425	69270	69.38	293.72	363.09	756.45	0.0056	1.299	5.595	34.41
360	E4-F14	113	100	66858	62518	62.55	231.17	293.72	611.91	0.0321	3.628	9.223	30.78
361	E14-E15	56	100	5826	3490	3.49	227.68	231.17	481.60	0.0206	1.154	10.377	30.62
362	E12-F13	115	100	48881	44438	44.42	0.00	44.42	92.54	0.3010	0.112	10.489	30.51
363	E13-E11	28	100	7726	6838	6.66	176.61	183.28	381.80	0.0134	0.375	10.552	30.23
364	E11-F12	47	100	23173	21380	22.38	0.00	21.38	44.54	0.0100	0.010	10.564	30.24
365	L11-E10	50	100	1144	0	0.00	155.23	155.23	323.39	0.0099	0.299	10.548	18.95
366	F10-F2	100	100	71651	65548	65.55	26.95	92.51	192.72	0.0038	0.605	11.153	18.25
367	F2-B2	113	100	21269	20979	26.96	0.00	26.96	56.16	0.0004	0.044	11.597	18.20
368	F2-B1	35	100	1869	0	0.00	0.00	0.00	0.00	0.0000	0.000	11.633	18.55
369	E10-E8	40	100	10927	2908	4.91	57.81	62.72	130.66	0.0018	0.050	11.138	18.86
370	E8-E	200	100	69014	57811	57.81	0.00	57.81	120.44	0.0026	0.233	11.392	18.61
371	E1-B12	36	100	2136	0	0.00	0.00	0.00	0.00	0.0000	0.000	11.392	18.61
372	E6-A42	57	350	9648	8236	8.24	964.20	972.43	2025.98	0.0034	0.126	4.928	25.67
373	A42-A56	19	250	5153	4658	4.66	959.54	964.20	2008.74	0.0033	0.043	4.972	25.63
374	A56-55	89	100	30125	26959	26.96	0.00	26.96	56.16	0.0004	0.033	5.004	25.68
375	A56-A43	40	250	12262	6980	6.99	925.59	932.58	1942.88	0.0021	0.126	5.497	25.50
376	A43-A38	55	100	14253	12158	12.16	0.00	12.16	25.33	0.0001	0.005	5.502	25.50
377	A43-A57	9	250	845	500	0.50	912.91	913.41	1902.99	0.0030	0.027	5.529	25.48
378	A57-A44	49	250	16597	14725	14.72	898.21	912.94	1901.95	0.0030	0.148	5.677	25.33
379	A44-A54	100	300	25273	21459	21.46	0.00	21.46	44.71	0.0003	0.025	5.702	25.30
380	A44-B3	209	100	72691	59729	59.72	0.00	59.72	124.41	0.0017	0.355	6.057	24.98
381	A11-A45	55	250	16070	13972	13.97	803.06	817.04	1702.16	0.0025	0.135	6.608	25.19
382	A45-A48	71	100	12366	9638	9.66	26.21	35.87	74.72	0.0007	0.049	6.655	25.15
383	A46-B1	37	100	12739	10565	10.57	0.00	10.57	22.01	0.0001	0.004	6.658	25.14

Design of Pipe Line

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Max. Water Demand (Total Water Demand + Total Horticulture Water Demand)	Max Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Compressure	Terminal Head
						KLD	per sec	total KLD	20 HRS LPM	m	m	m	m
384	A16-A47	55	150	17037	15644	15.64	0.00	15.64	32.59	0.0001	0.007	4.993	22.14
385	A45-B12	208	250	45409	20115	26.32	737.88	757.20	1578.33	0.0022	0.150	5.264	24.72
386	B12-B12	24	250	5373	4658	4.66	733.22	737.88	1537.26	0.0020	0.049	5.313	24.69
387	B12-C10	206	150	39145	31288	31.29	254.99	286.28	596.12	0.0045	0.875	6.188	23.81
388	C10-C11	64	100	14065	11641	11.64	0.00	11.64	24.26	0.0001	0.005	6.193	23.81
389	C10-C7	30	100	5454	6258	6.25	237.10	243.35	506.98	0.0027	1.904	8.097	21.91
390	C7-C8	29	100	31106	10000	0.00	194.25	206.25	425.51	0.0164	0.475	8.557	21.42
391	C8-C12	120	100	108824	194248	194.25	0.00	194.25	404.68	0.0149	1.792	10.349	19.61
392	C7-C6	55	100	2148	250	0.25	32.60	32.85	68.44	0.0006	0.031	8.123	21.88
393	C6-C12	182	100	58295	32602	32.60	0.00	32.60	67.92	0.0005	0.100	8.222	21.78
394	D12-B15	25	150	877	0	0.00	446.95	446.95	931.14	0.0097	0.239	5.536	24.46
395	B13-B14	43	150	15120	10486	10.49	436.46	446.95	931.14	0.0097	0.417	5.953	24.05
396	B14-B17	46	150	17162	15483	15.41	421.05	436.46	909.29	0.0094	0.427	6.380	23.62
397	B17-B27	8	150	805	0	0.00	421.05	421.05	877.19	0.0087	0.069	6.449	23.55
398	B27-B19	56	150	14544	12408	12.41	408.64	421.05	877.19	0.0087	0.486	6.935	23.06
399	B19-B21	40	150	7930	6408	6.41	402.24	408.64	851.34	0.0082	0.329	7.264	22.79
400	B21-B22	14	150	534	0	0.00	402.24	402.24	837.99	0.0080	0.112	7.376	22.62
401	B22-B5	87	150	9319	0	0.00	402.24	402.24	837.99	0.0080	0.694	8.070	21.93
402	B2W5-B5	223	100	57451	48945	48.95	21.62	80.56	167.84	0.0029	0.652	8.722	21.28
403	B5-B4	78	100	2975	0	0.00	21.62	21.62	45.87	0.0005	0.040	8.763	21.24
404	B4-B6	61	100	24100	21050	21.06	0.00	21.06	45.75	0.0003	0.017	8.779	21.22
405	B4-B3	56	100	4139	2000	2.00	2.56	9.66	20.12	0.0001	0.003	8.780	21.22
406	B3-B2	18	100	8344	7658	7.66	0.00	7.66	15.95	0.0001	0.001	8.781	21.22
407	SECTOR 81-B1W5-B1D17	72	150	2716	0	0.00	321.68	321.68	670.16	0.0052	0.380	8.149	21.55
408	B1D17-B4	140	100	37221	27538	27.54	0.00	27.54	57.37	0.0004	0.060	8.209	21.49
409	D17-D18	40	150	6412	4658	4.66	289.18	293.84	612.79	0.0045	0.206	8.415	21.33
410	D18-D6	30	100	2709	11565	11.57	0.00	11.57	24.09	0.0001	0.002	8.657	21.14

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Design Statement of Water Supply

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total Water Demand - Total Surrenderd Water Demand)	Design of Pipe Line							
						Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Terminal Head
						self	previous	total	20 HRS				
		m	mm	L	L	KLD	KLD	KLD	LPM	m	m	m	m
411	D18-D3	128	100	48800	43918	43.92	0.00	43.92	91.49	0.0010	0.123	8.777	21.22
412	D18-D19	129	100	28801	23880	23.88	0.00	23.88	49.75	0.0003	0.040	8.693	21.31
	-												
413	D18-D22	44	150	1678	0	0.00	210.12	210.12	437.74	0.0024	0.105	8.760	21.24
414	D22-D5	37	100	13416	12005	12.01	0.00	12.01	25.01	0.0001	0.005	8.764	21.24
415	D22-D21	166	150	36707	30375	30.38	167.74	198.11	412.73	0.0021	0.357	9.117	20.88
416	D21-D7	22	100	839	0	0.00	167.74	167.74	349.45	0.0114	0.250	9.368	20.63
	-												
417	D7-D23	74	100	4523	1500	1.50	57.34	58.84	122.58	0.0016	0.121	9.489	20.51
418	D23-A'7	92	100	35797	32288	32.29	25.05	57.34	119.45	0.0016	0.143	9.632	20.37
419	A'7-H1	59	100	2251	0	0.00	25.05	25.05	52.19	0.0003	0.020	9.652	20.35
420	H1-H2	22	100	7664	6825	6.83	18.23	25.05	52.19	0.0003	0.007	9.659	20.34
421	H2-H3	50	100	16057	12150	12.15	0.00	12.15	25.31	0.0001	0.004	9.664	20.34
422	H2-E4	30	100	7219	6075	6.08	0.00	6.08	12.66	0.0100	0.001	9.666	20.34
	-												
423	D7-D20	90	100	17406	13973	13.97	94.93	108.90	226.88	0.0051	0.460	9.828	20.17
424	D20-D19	143	100	12441	6986	6.99	87.94	94.93	197.77	0.0040	0.567	10.395	19.61
425	D19-D2	108	100	62578	20959	20.96	66.98	87.94	183.21	0.0034	0.372	10.766	19.23
426	D2-A2	61	100	6077	3750	3.75	63.23	66.98	139.55	0.0021	0.127	10.893	19.11
427	A2-D1	27	100	8687	7658	7.66	0.00	7.66	15.95	0.0000	0.001	10.894	19.11
428	A2-A'2	62	100	12272	9908	9.91	0.00	9.91	20.64	0.0001	0.004	10.897	19.10
429	A2-A1	53	100	12637	10815	10.82	34.85	45.67	95.14	0.0010	0.054	10.947	19.05
430	84A1-84A11	153	100	23637	17801	17.80	17.05	34.85	72.61	0.0006	0.095	11.042	18.96
431	A11-A12	51	100	16865	4668	4.66	12.39	17.05	35.52	0.0002	0.009	11.051	18.95
432	A12-A'12	33	100	9008	6986	6.99	0.00	6.99	14.55	0.0000	0.002	11.053	18.95
433	84A12-84A'13	18	100	6094	5408	5.41	0.00	5.41	11.27	0.0000	0.000	11.053	18.95
	Total Length	31372		3264170	2652856								
	Road Length	36006		9233495	7306186	7306							

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Sr.No	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Road Length			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12.5M Wide Road	10.5M Wide Road	18.5M Wide Road	14.5M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m	m
1	2	3	4	5	6	7	8	9	10	14	15	16	17	18	19	20
	SECTOR 93															
1	A47-A46	53	24	231.000	230.750	1	500	231.299	230.606	177.16	177.16	0.00				53
2	A46-A45	67	24	230.750	230.250	-1	330	230.906	230.705	438.98	438.98	0.00				67
3	A44-A45	97	24	230.250	230.750	1	330	230.509	230.972							62
4	A37-A14	42	24	230.750	230.750	1	225	230.972	231.181							42
5	A13-A33	8	24	230.750	230.500	1	200	231.181	231.221	110.60	110.60	0.00				8
6	A36-A45	42	24	230.500	231.000	1	225	231.221	231.408	568.88	568.88	0.00				42
7	A12-A36	13	24	231.000	231.250	1	225	231.408	231.466	97.21	97.21	0.00				13
8	E8-A42	27	24	231.250	241.250	1	225	231.465	231.630	264.35	264.35	0.00				26
9	A41-E6	18	24	231.250	231.250	1	350	231.650	231.750	190.05	190.05	0.00				18
10	E5-A41	33	24	231.250	231.500	1	200	231.750	231.910	349.38	349.38	0.00				32
11	A27-E7	25	24	231.500	231.250	1	225	231.910	232.012	225.49	225.49	0.00				25
12	E21-E20	45	24	232.500	232.750	1	350	233.099	233.279	609.59	609.59	0.00				46
13	E22-E21	48	24	232.750	233.000	1	200	233.279	233.519	604.13	604.13	0.00				48
14	A32-E22	74	24	233.000	233.250	1	200	233.519	233.889	1029.08	1029.08	0.00				74
15	A23-A22	13	24	233.000	233.500	1	200	233.689	233.954	170.64	170.64	0.00				13
16	E23-A12	6	24	233.500	233.750	1	135	233.954	234.012	50.89	50.89	0.00				6
17	E24-E25	48	24	233.500	233.750	-1	350	233.054	233.816	250.94	250.94	0.00				35
18	E25-E24	26	24	233.750	233.500	-1	350	233.846	233.772	114.64	114.64	0.00				26
19	A16-A11	55	24	234.250	234.250	1	185	234.541	234.638	336.28	336.28	0.00				55
20	A17-A11	17	24	234.250	234.500	1	500	234.638	234.726	324.75	324.75	0.00				17
21	A5-A2	99	24	235.000	235.500	1	175	235.241	235.790	611.47	611.47	0.00				99

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Sr.No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Embankment in Filling	Excavation in Cutting	Road Length			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12 M Wide Road	9 M Wide Road	7.5 M Wide Road	3.5 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m	m
32	A25-A26	186	24	235.500	235.000	1	225	235.700	236.030	4254.25	4254.25	0.00				186
33	A2-A25	61	24	235.000	236.350	1	125	235.700	236.900	262.16	262.16	0.00				61
34	A29-A24	75	24	236.250	236.250	1	200	236.202	236.677	430.52	430.52	0.00				75
35	A24-A23	179	24	236.250	237.250	1	200	236.677	237.572	1607.48	1607.48	0.00				179
36	A45-A42	53	21	230.250	230.250	-1	200	230.705	230.438	406.14	406.14	0.00				53
37	A59-B12	146	24	230.250	229.750	-1	700	230.458	229.738	294.26	294.26	0.00				140
38	B12-B12	24	24	229.750	229.500	-1	175	230.738	229.600	25.35	25.35	0.00				24
39	B12-C10	213	24	229.500	228.500	-1	220	229.600	228.641	612.18	612.18	0.00				213
40	C10-C7	75	24	228.500	228.000	-1	225	228.641	228.368	404.42	404.42	0.00				75
41	C7-C8	20	21	228.000	228.250	1	300	228.308	228.375	103.84	103.84	0.00				20
42	C8-C9	47	24	228.250	228.500	1	350	228.475	228.564	165.67	165.67	0.00				47
43	C7-C6	65	24	228.000	227.750	-1	350	228.308	228.128	316.66	316.66	0.00				65
44	C6-C5	45	24	227.750	227.750	-1	225	228.128	228.017	194.47	194.47	0.00				45
45	A46-B7	54	18	230.750	230.500	1	900	230.906	230.939	190.55	190.55	0.00	54			
46	A55-A48	19	12	231.000	231.250	-1	475	232.290	232.360	193.21	193.21	0.00	19			
47	A48-A40	77	12	231.250	231.500	-1	475	232.250	232.098	745.13	745.13	0.00	77			
48	A49-A50	165	12	231.500	231.750	-1	500	232.098	231.768	610.24	610.24	0.00	165			
49	A50-A42	152	12	231.750	231.250	-1	500	231.768	231.464	211.66	211.66	0.00	152			
50	A50-A51	51	12	231.750	231.800	-1	725	231.768	231.695	25.69	0.00	25.69	51			
51	A51-A41	29	15	231.800	232.000	-1	750	231.698	232.099	96.34	0.00	96.34		29		
52	A46-A38	19	18	232.000	232.000	1	100	231.699	231.819	84.07	0.00	84.07			19	
53	A38-A39	20	12	232.000	232.000	1	100	231.849	232.049	12.19	0.00	12.19	20			
54	A38-A36	40	18	232.000	232.250	1	1200	231.849	231.890	705.26	0.00	705.26			40	
55	A36-A37	137	12	232.250	231.250	1	1125	231.890	232.017	330.30	330.30	0.00	137			
56	A35-A32	98	18	232.000	232.500	-1	1000	231.849	231.754	700.61	0.00	700.61			98	
57	A32-A33	64	18	232.500	232.750	-1	5000	231.754	231.767	995.80	0.00	995.80			64	
58	A33-A39	150	12	232.750	233.250	1	5000	231.767	231.797	2192.01	0.00	2192.01	150			

Sr No	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Road Length			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				L2.5M Wide Road	L5 M Wide Road	L8 M Wide Road	L24 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m	m
48	A20-A30	19	12	233.250	233.250	1	5000	231.797	231.601	230.85	0.00	230.85	19			
49	A33-A34	71	10	232.750	232.750	1	5000	231.767	231.781	1347.21	0.00	2247.41			71	
50	A34-A41	66	15	232.750	232.500	-1	4200	231.781	231.767	804.32	0.00	804.32		66		
51	A32-A51	100	18	232.500	232.500	1	8500	231.754	231.766	1331.87	0.00	1331.87				100
52	A51-A28	55	18	232.500	232.750	1	5400	231.766	231.805	831.01	0.00	831.01				55
53	A28-A27	31	12	232.750	233.000	1	5000	231.805	231.809	269.05	0.00	269.05	31			
54	A28-A35	37	18	232.750	233.000	1	5000	231.805	231.810	422.73	0.00	422.73			37	
55	A35-A41	135	15	232.000	231.250	1	5400	231.698	231.760	2001.11	2001.11	0.00		135		
56	A26-B5	58	12	231.000	230.750	1	5000	231.408	231.427	637.58	637.58	0.00	58			
57	A41-A38	55	15	230.500	231.250	1	200	231.221	231.300	917.89	917.89	0.00		55		
58	A37-B1	57	12	230.750	230.750	1	5000	231.181	231.192	277.51	277.51	0.00	57			
59	A44-A38	101	12	230.750	231.000	1	800	230.972	231.006	194.24	194.24	0.00	101			
60	A46-B1	215	12	230.750	230.000	-1	200	230.972	229.969	165.22	165.22	0.00	215			
61	W12-B1	52	15	230.250	230.000	1	465	229.938	229.907	48.82	0.00	48.82		52		
62	B3-B9	162	12	230.000	228.750	-1	685	229.907	229.671	805.61	805.61	0.00	162			
63	B8-B10	50	12	228.750	229.000	1	265	229.671	229.859	588.99	588.99	0.00	50			
64	B1-B2	49	15	230.000	230.000	-1	1300	229.907	229.895	73.49	0.00	73.49		49		
65	B2-B2	111	12	230.000	230.500	1	5000	229.893	229.915	461.28	0.00	461.28	111			
66	B2-B10	162	12	230.000	229.000	-1	5000	229.893	229.860	791.50	791.50	0.00	162			
67	B2-B3	33	15	230.000	230.250	1	5000	229.893	229.899	112.41	0.00	112.41		33		
68	B10-B11	49	12	229.000	229.250	1	250	229.859	229.991	316.09	316.09	0.00	49			

Sr.No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Cutting	Earthwork in Filling	Excavation in Cutting	Road Length			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12.5 M Wide Road	15 M Wide Road	18 M Wide Road	24 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m	m
69	E11-E12	63	12	229.250	228.750	1	5000	229.991	230.004	150.11	150.11	0.00	61			
70	E13-E12	98	12	229.250	229.250	1	375	229.991	230.005	361.15	361.15	0.00	38			
71	E13-E12	114	12	230.250	229.250	1	775	230.093	230.540	569.37	569.37	0.00	111			
72	E13-E14	55	12	229.750	229.700	1	125	230.093	230.571	565.48	565.48	0.00	55			
73	E14-E4	118	12	229.250	230.000	-1	700	230.571	230.402	1220.07	1220.07	0.00	118			
74	E4-E5	40	15	230.000	229.500	-1	950	230.402	230.242	349.41	349.41	0.00		40		
75	E4-E6	215	12	230.000	231.250	1	175	230.402	231.031	1010.41	1010.41	0.00	215			
76	E5-E8	40	15	230.000	230.500	1	180	230.407	230.655	212.07	212.07	0.00		39		
77	E5-E7	216	12	230.500	231.500	1	175	230.675	231.509	736.12	736.12	0.00	216			
78	E8-E10	70	12	230.500	230.250	1	2200	230.675	230.709	288.96	288.96	0.00	56			
79	E10-E16	115	12	230.250	229.000	1	825	230.709	230.849	902.26	902.26	0.00	115			
80	E10-E19	114	12	230.250	230.750	1	950	230.709	230.829	368.15	368.15	0.00	114			
81	E21-E31	79	12	232.750	232.750	-1	8000	233.279	233.270	497.22	497.22	0.00	79			
82	E21-E27	82	12	232.750	232.750	-1	8000	233.279	233.259	506.29	506.29	0.00	82			
83	E27-E33	75	12	232.750	232.250	1	5000	233.279	233.285	699.35	699.35	0.00	75			
84	E33-E34	49	12	232.250	232.250	1	5000	233.285	233.294	681.20	681.20	0.00	49			
85	E34-E35	61	12	232.250	232.500	1	5000	233.294	233.307	677.44	677.44	0.00	61			
86	E27-E29	100	12	232.750	232.500	-1	900	233.259	233.148	694.51	694.51	0.00	100			
87	E35-E29	36	12	232.250	232.500	-1	250	233.294	233.150	366.06	366.06	0.00	36			
88	E29-E30	29	12	232.500	232.750	-1	900	233.148	233.116	176.47	176.47	0.00	29			
89	E26-E27	59	12	232.750	233.000	-1	1400	233.259	233.217	257.17	257.17	0.00	59			
90	E26-E28	91	12	233.000	232.000	-1	1400	233.217	233.152	701.66	701.66	0.00	91			
91	E26-E32	82	12	233.000	232.750	1	150	233.217	233.764	113.65	113.65	0.00	82			

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Sr No.	Stretch of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Road Length:			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12 M Wide Road	15 M Wide Road	18 M Wide Road	24 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m	m
91	T23-A21	82	12	235.500	235.750	1	3000	233.934	233.975	332.22	332.22	0.00	R2			
92	T23-A14	58	12	235.750	234.250	1	200	233.946	234.796	106.86	106.86	0.00	58			
94	A14-A59	115	12	234.250	234.500	1	500	234.366	234.466	104.69	104.69	0.00	115			
95	A59-A60	102	12	234.500	234.000	1	5000	234.366	234.586	395.00	395.00	0.00	102			
96	A10-A11	178	15	234.250	235.000	1	700	234.638	234.895	374.86	374.86	0.00		178		
97	A13-A10	58	18	235.000	234.750	1	5000	234.893	234.909	21.29	21.29	0.00			58	
98	A5-A10	177	15	235.000	235.250	2	500	234.893	235.245	147.24	0.00	147.24		177		
99	A12-A9	55	12	235.250	235.000	-1	200	235.247	234.972	10.53	0.00	10.53	55			
100	A12-A10	65	12	235.000	234.750	1	5000	234.972	234.985	80.37	80.37	0.00	65			
101	A10-A12	53	12	235.000	234.750	-1	100	234.972	234.669	34.91	0.00	34.91	53			
102	A35-A36	33	12	234.750	234.500	1	5000	234.669	234.679	41.15	41.15	0.00	33			
103	A18-A19	34	12	234.750	234.500	1	5000	234.969	234.975	19.21	19.21	0.00	34			
104	A9-A6	55	12	235.250	235.500	1	145	235.247	235.109	8.39	8.39	0.00	55			
105	A6-A20	55	12	235.500	235.500	1	5000	235.529	235.540	27.50	27.50	0.00	55			
106	A6-A5	55	12	235.500	236.000	1	190	235.529	235.816	90.60	0.00	90.60	55			
107	A5-A5	55	15	236.000	236.000	1	5000	235.816	235.879	143.26	0.00	143.26		55		
108	A5-A1	36	18	236.000	236.250	1	5000	235.816	235.825	131.04	0.00	131.04	36			
09	A10-A7	35	18	235.000	235.250	1	225	234.893	235.157	180.15	0.00	180.15			35	
110	A7-A20	65	12	235.250	235.500	1	5000	235.127	235.160	180.58	0.00	180.58	65			
111	A7-A1	110	12	235.250	234.250	1	5000	235.127	235.160	206.83	206.83	0.00	16			
112	A7-A4	36	18	235.250	235.500	1	140	235.127	235.501	41.27	0.00	41.27			36	
113	A4-A8	51	15	235.500	236.000	1	5000	235.530	235.544	226.91	0.00	226.91		2		
114	A4-A14	60	15	235.500	235.750	1	5000	235.530	235.546	33.19	0.00	33.18	29			

Earthwork Quantities Designed Using Selected Typical Roads

Sl. No.	Name of Road	Length of Road	Width of Road	Natural Section Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Embankment in Filling	Excavation in Cutting	Road Length				
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				10 M Wide Road	15 M Wide Road	24 M Wide Road	30 M Wide Road	45 M Wide Road
		m	m	m	m			m	m	cu.m	cu.m	cu.m	m	m	m	m	m
115	A4-A5	194	15	235.500	235.000	-1	675	235.530	235.242	396.17	396.17	0.00		194			
116	C10-C11	81	12	228.500	228.500	1	375	228.641	228.719	188.18	188.18	0.00	81				
117	C6-C13	212	12	228.750	228.750	1	1025	228.128	228.339	17.26	0.00	47.26	212				
118	C8-C12	151	12	228.250	228.250	1	975	228.175	228.430	86.77	0.00	86.77	151				
119	B12-B13	19	15	229.500	229.250	1	175	229.600	229.609	79.72	79.72	0.00			19		
120	B13-B13	37	15	229.250	229.500	1	5000	229.709	229.716	149.64	149.64	0.00	37				
121	B13-B14	43	15	229.250	229.250	-1	100	229.709	229.483	229.07	229.07	0.00			43		
122	B14-B15	55	12	229.250	229.000	1	5000	229.483	229.494	239.70	239.70	0.00	55				
123	B14-B17	54	15	229.250	229.000	-1	250	229.483	229.267	207.25	207.25	0.00			54		
124	B17-B20	33	12	229.000	229.250	1	5000	229.267	229.277	92.19	99.49	0.00	33				
125	B17-B22	11	15	229.000	229.000	1	200	229.267	229.302	48.54	48.54	0.00			11		
126	B27-B18	52	15	229.000	229.250	1	5000	229.322	229.332	157.47	157.47	0.00			52		
127	B27-B19	55	15	229.000	229.000	1	175	229.322	229.636	306.04	306.04	0.00			55		
128	B19-B30	20	12	229.000	229.000	1	5000	229.636	229.640	155.11	155.11	0.00	20				
129	B19-B24	48	12	229.000	229.000	1	5000	229.636	229.646	369.09	369.09	0.00	48				
130	B19-B22	34	15	229.000	229.250	1	200	229.636	229.806	303.55	303.55	0.00			34		
131	B22-B21	19	15	229.250	228.750	1	200	229.806	230.001	213.24	213.24	0.00			19		
132	B22-B5	47	15	228.750	228.750	1	400	229.001	230.018	692.28	692.28	0.00	47				
133	B5-B6	240	12	228.750	228.500	1	375	230.018	230.674	6081.79	6081.79	0.00	240				
134	B5-D1	88	12	228.500	229.000	1	1200	230.674	230.718	2070.99	2070.99	0.00	88				
135	B4-D8	62	12	229.000	229.250	1	5000	230.718	230.760	1233.98	1233.98	0.00	62				
136	B4-B3	59	12	229.000	228.000	1	5000	230.748	230.760	1895.63	1895.63	0.00	59				
137	B6-B2	28	15	228.000	228.500	1	2000	230.760	230.765	1055.21	1055.21	0.00			28		
Total		1806.5								39330.9	50208.2	1577.3	5936	1505	837		3287

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Sr No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Depth		Ave Depth	Quantity	Earthwork in Filling	Excavation in Cutting	Type of Roads		
				Upstream Level	Downstream Level			Upstream Level	Downstream Level	Upstream	Downstream					2 M Wide Road	3 M wide Road	3+3M Wide Road
		m	m					m	m				cu.m	cu.m	cu.m	m	m	m
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	A1-A3	55	24	229.250	229.250	-1	275	229.688	229.495	0.44	0.24	0.34	424.10	424.10	0.00			57
2	A3-A4	58	24	228.750	228.500	-1	175	229.230	228.898	0.48	0.40	0.44	611.36	611.36	0.00			38
3	A5-D23	95	24	228.000	227.500	1	500	228.319	228.065	0.32	0.56	0.47	1045.84	3048.84	0.00			95
4	A1-A11	147	12	229.250	230.000		5000	229.668	229.717	0.42	-0.28	0.08	139.42	139.42	0.00	147		
5	A11-A12	53	12	230.000	230.000		8000	229.717	229.724	-0.28	-0.28	-0.28	177.86	0.00	177.86	53		
6	A12-A13	33	12	230.000	229.750		8000	229.724	229.728	-0.28	-0.02	-0.15	59.11	0.00	59.11	33		
7	A13-A17	56	12	230.000	229.750	1	5000	229.724	229.735	-0.28	-0.02	-0.15	97.94	0.00	97.94	56		
8	A17-A2	62	12	229.250	229.500	1	5000	229.495	229.507	0.24	0.01	0.13	95.83	95.83	0.00	62		
9	A2-D1	52	12	229.250	228.750	1	5000	229.495	229.505	0.24	0.76	0.50	312.07	312.07	0.00	52		
10	A5-D2	62	12	229.250	228.750	1	725	229.495	229.580	0.24	0.83	0.54	400.66	400.66	0.00	62		
11	D2-D19	132	12	228.750	228.750	1	725	229.580	229.736	0.83	1.48	1.16	1855.91	1855.91	0.00	132		
12	D19-D16	121	12	228.250	227.750	1	8000	229.755	229.750	1.48	2.00	1.74	2530.07	2530.07	0.00	121		
13	D18-D3	136	12	227.750	228.500	1	5000	229.750	229.777	2.00	1.28	1.64	2674.25	2674.25	0.00	136		
14	D18-D17	49	12	227.750	228.250	-1	5000	229.750	229.740	2.00	1.49	1.75	1026.14	1026.14	0.00	49		
15	D17-D16	32	12	228.250	228.250	1	5000	229.740	229.747	1.49	1.50	1.49	573.48	573.48	0.00	32		
16	D17-D4	164	12	228.250	228.000	1	5000	229.740	229.773	1.49	1.77	1.63	3211.06	3211.06	0.00	164		
17	D19-D20	143	12	228.250	228.000	-1	175	229.755	228.918	1.48	0.92	1.20	2061.50	2061.50	0.00	143		
18	D20-A5	20	12	228.000	228.500	-1	1000	228.918	228.898	0.92	0.40	0.66	157.86	157.86	0.00	20		
19	D20-D3	86	12	228.000	228.750	1	5000	228.918	228.935	0.92	1.18	1.05	1072.29	1072.29	0.00	86		
20	D18-D6	49	12	227.750	227.750	1	5000	229.750	229.760	2.00	2.01	2.00	1178.00	1178.00	0.00	49		
21	D18-D19	45	18	227.750	227.750	-1	125	229.750	229.590	2.00	1.64	1.82	1474.22	1474.22	0.00		45	
22	D22-D3	46	18	228.750	227.500	-1	100	229.590	228.936	1.64	1.45	1.54	2185.95	2185.95	0.00		46	
23	D22-D21	132	18	227.750	228.500	-1	350	229.590	228.956	1.64	1.46	1.55	4235.04	4235.04	0.00		132	
24	D21-D7	28	12	227.500	227.750	-1	1000	228.956	228.934	1.46	1.18	1.32	443.51	443.51	0.00	28		
25	D7-D19	80	12	227.750	227.500	-1	95	228.934	229.032	1.18	0.39	0.89	852.63	852.63	0.00	80		
26	A7-D1	53	12	228.000	227.500	-1	200	228.375	228.110	0.47	0.61	0.49	313.17	313.17	0.00	53		
27	D1-D2	21	12	227.500	227.500	1	5000	228.110	228.114	0.61	0.61	0.61	154.23	154.23	0.00	21		
28	D2-A9	80	12	227.500	227.500	1	5000	228.114	228.124	0.61	0.62	0.62	351.47	351.47	0.00	80		
29	A9-D6	28	12	227.500	227.250	1	5000	228.114	228.120	0.61	0.87	0.74	249.78	249.78	0.00	28		
	Total	2086.5								0.910	0.871	0.928	29023	29458	-435	1630	243	294

Earthwork Calculation Sheet

Sr No	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Length of Roads		
				Upstream Level	Downstream Level			Up-stream Level	Downstream Level				12 M Wide Road	18 M Wide Road	24 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	B1-B2	22	24	230.750	230.000	-1	300	231.397	231.017	396.93	396.93	0.00			22
2	B2-B3	162	12	230.000	230.000	1	2800	231.017	231.098	2055.32	2055.32	0.00	162		
3	B3-B8	27	12	230.000	230.800	1	5000	231.098	231.109	358.55	358.55	0.00	27		
4	B3-B4	30	12	230.000	230.900	1	2000	231.098	231.113	397.90	397.90	0.00	30		
5	B4-B9	67	12	230.500	230.850	1	5000	231.113	231.126	598.55	598.55	0.00	67		
6	B4-B5	49	12	230.500	230.000	1	1000	231.113	231.162	652.14	652.14	0.00		49	
7	B5-B10	48	12	230.000	230.750	1	5000	231.162	231.171	455.94	455.94	0.00	48		
8	B5-B6	33	12	230.000	230.300	1	1000	231.162	231.195	439.49	439.49	0.00		33	
9	B6-B11	58	12	230.300	230.250	1	5000	231.195	231.206	574.59	574.59	0.00	58		
10	B6-B7	65	12	230.300	229.750	1	5000	231.195	231.208	1039.36	1039.36	0.00		65	
11	B7-B12	48	12	229.750	230.250	1	5000	231.208	231.217	698.44	698.44	0.00	48		
12	B7-B14	52	12	229.750	229.500	1	5000	231.208	231.218	990.89	990.89	0.00	52		
13	B14-B15	42	12	229.500	229.500	1	5000	231.218	231.227	868.07	868.07	0.00	42		
14	B15-B22	105	12	229.500	230.250	1	5000	231.227	231.247	1683.20	1683.20	0.00	102		
15	B15-B16	175	12	229.500	229.500	-1	500	231.227	230.875	3274.79	3274.79	0.00	176		
16	B15-B16	25	12	229.500	229.750	1	175	231.227	231.369	501.90	501.90	0.00	25		
17	B16-B25	178	12	229.750	225.500	-1	300	231.369	230.779	3892.40	3892.40	0.00	178		
18	B16-B17	50	12	229.750	229.750	-1	5000	231.369	231.359	908.65	908.65	0.00	50		
19	B17-B34	166	12	229.750	229.750	-1	200	231.359	230.806	2654.85	2654.85	0.00	166		
20	B17-B18	32	12	229.750	229.750	-1	5000	231.359	231.353	616.79	616.79	0.00	32		
21	B17-B35	84	12	229.750	230.250	1	5000	231.359	231.376	1378.76	1378.76	0.00	84		
22	B18-B33	132	12	229.750	230.000	-1	300	231.353	230.846	2294.83	2294.83	0.00	132		
23	B18-B19	40	12	229.750	230.000	-1	5000	231.353	231.345	707.53	707.53	0.00	40		
24	B19-B31	135	12	230.000	230.000	-1	500	231.345	231.152	2022.72	2022.72	0.00	135		
25	B19-B20	41	12	230.000	230.000	-1	5000	231.345	231.337	659.75	659.75	0.00	41		
26	B20-B30	98	12	230.000	230.000	-1	700	231.337	231.192	1489.78	1489.78	0.00	98		
27	B20-B24	53	12	230.000	230.500	1	5000	231.337	231.347	891.59	891.59	0.00	53		
28	B20-B21	43	12	230.000	230.250	-1	5000	231.337	231.328	693.08	693.08	0.00	43		
29	B21-B29	59	12	230.250	230.250	-1	700	231.328	231.348	697.68	697.68	0.00	56		

Sr No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Clinometer	Longitudinal Slope	Formation Levels		Quantity			Length of Roads		
				Upstream Level	Down-stream Level			Upstream Level	Downstream Level		Embankment in Filling	Excavation in Cutting	12 M Wide Road	15 M Wide Road	24 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m
30	B21-B35	76	12	230.250	230.500	1	5000	231.428	231.548	876.27	876.27	0.00	76		
31	B21-B28	66	12	230.250	230.250	-1	5000	231.328	231.317	720.80	720.80	0.00	66		
32	B26-B27	24	12	230.250	230.250	1	3000	231.317	231.325	308.45	308.45	0.00	23		
33	B27-B36	131	12	230.250	230.750	-1	6300	231.325	231.304	1288.59	3280.59	0.00	131		
34	B28-B29	49	12	230.250	230.250	-1	700	231.317	231.247	606.83	606.82	0.00	49		
35	B29-B30	46	12	230.250	230.000	-1	900	231.247	231.156	605.25	606.25	0.00	46		
36	B30-B31	40	12	230.000	230.000	-1	900	231.156	231.151	563.37	563.37	0.00	40		
37	B31-B32	22	12	230.000	230.000	1	110	231.151	231.351	330.39	330.39	0.00	22		
38	B32-B34	37	12	230.000	229.750	-1	925	230.846	230.896	422.40	422.40	0.00	37		
39	B34-B35	37	12	229.750	229.500	-1	1200	230.896	230.776	517.68	517.68	0.00	37		
40	B35-B36	39	12	229.500	229.500	1	400	230.776	230.875	619.70	619.70	0.00	39		
41	B36-C1	62	12	229.500	229.000	-1	70	230.875	229.975	886.80	886.80	0.00	62		
42	C1-C2	35	24	229.000	229.000	-1	450	229.975	229.895	784.67	784.67	0.00			35
43	C2-C3	39	24	229.000	229.000	-1	450	229.895	229.822	679.99	679.99	0.00			39
44	C3-C4	20	24	229.000	229.000	-1	450	229.822	229.777	383.85	383.85	0.00			20
45	C4-C5	18	24	229.000	229.000	-1	450	229.777	229.737	327.23	327.23	0.00			18
46	C5-C6	72	24	229.000	228.750	-1	650	229.737	229.577	1352.10	1352.10	0.00			72
47	C6-C7	102	24	228.750	228.750	-1	550	229.577	229.392	1798.64	1798.64	0.00			102
48	C7-C8	35	24	228.750	228.750	1	700	229.392	229.428	395.92	395.92	0.00			35
49	C8-C9	47	24	228.750	228.500	1	5000	229.577	229.587	1079.68	1079.68	0.00			47
50	C9-C10	55	24	228.500	228.250	1	5000	229.587	229.598	1606.92	1606.92	0.00			55

S.No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Correction	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Length of Roads		
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12 M Wide Road	15 M Wide Road	36 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m
51	C20-C15	42	21	228.250	228.000	1	5000	229.408	229.606	1488.88	1488.88	0.00			42
52	C11-C17	43	24	228.000	228.000	1	6000	229.606	229.633	1661.36	1661.36	0.00			43
53	C2-C19	27	12	229.000	228.750	-1	400	229.805	229.828	319.62	319.62	0.00	27		
54	C19-C19	56	12	228.750	228.750	1	5000	229.828	229.839	728.01	728.01	0.00	56		
55	C15-C16	49	12	228.750	228.500	-1	500	229.828	229.739	678.40	678.40	0.00	49		
56	C16-C18	44	12	228.500	228.750	1	5000	229.739	229.739	585.63	585.63	0.00	44		
57	C16-C17	75	12	228.500	228.000	-1	550	229.739	229.642	1292.06	1292.06	0.00	75		
58	C5-C40	18	12	229.000	229.000	1	120	229.822	229.972	193.73	193.73	0.00	18		
59	C40-C41	138	12	229.000	229.000	1	150	229.972	230.892	2371.24	2371.24	0.00	129		
60	C40-C42	149	13	229.000	229.250	1	5000	229.972	230.002	1926.15	1926.15	0.00		149	
61	C4-C20	105	12	229.000	228.500	1	5000	229.577	229.799	1907.84	1907.84	0.00	105		
62	C5-C37	115	13	229.000	229.000	1	5000	229.737	229.760	1063.57	1063.57	0.00	15		
63	C37-B38	55	12	229.000	229.000	1	5000	229.760	229.771	505.54	505.54	0.00	55		
64	B28-B39	89	12	229.000	229.500	1	5000	229.771	229.789	566.43	566.43	0.00	89		
65	C9-C7	116	12	229.500	228.750	-1	600	229.587	229.394	1204.36	1204.36	0.00	116		
66	C10-C14	97	13	228.250	228.500	1	5000	229.598	229.617	1434.71	1434.71	0.00	97		
67	C10-C17	85	12	228.250	228.000	1	1900	229.598	229.642	1488.73	1488.73	0.00	85		
68	C11-C21	42	12	228.000	228.000	1	5000	229.606	229.615	811.67	811.67	0.00	42		
69	B1-A1	156	12	230.750	230.500	-1	250	231.217	230.613	561.16	561.16	0.00	156		
70	A1-A2	43	12	230.500	230.500	-1	225	230.613	230.422	8.88	8.88	0.00	43		
71	A2-A3	68	12	230.500	230.750	1	275	230.422	230.669	65.04	0.00	65.04	68		
72	A2-A4	47	12	230.500	230.500	-1	225	230.422	230.213	103.09	0.00	103.09	47		
73	A1-A5	97	12	230.500	230.000	1	5000	230.213	230.232	32.05	0.00	32.05	97		
74	A5-A6	55	12	230.000	230.000	1	5000	230.232	230.213	156.86	156.86	0.00	55		
75	A2-A12	128	12	230.750	230.250	1	200	230.689	231.309	750.09	750.09	0.00	128		
		8069								97787.742	60982.935	-206.19005	4289	298	516

Sr. No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels			Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Length of road		
				Upstream Level	Downstream Level	Slope Character		Upstream Level	Downstream Level				12 M wide Road	15 M Wide Road	24 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	A1-A2	56	24	234.750	235.000	1	225	235.157	235.402	541	541	0	0	0	56
2	A2-A3	14	24	235.000	235.000	1	225	235.402	235.464	146	146	0	0	0	14
													0	0	0
3	A59-A60	45	24	235.000	235.750	1	225	235.999	236.199	782	782	0	0	0	45
													0	0	0
4	A61-A5	48	24	235.750	236.000	1	375	236.199	236.327	448	448	0	0	0	48
													0	0	0
5	A5-A6	65	24	236.000	236.250	1	375	236.327	236.501	451	451	0	0	0	65
									236.499				0	0	0
6	A13-A14	59	24	235.500	235.500	1	5000	235.999	236.011	716	716	0	0	0	59
7	A14-A10	97	24	235.500	235.750	1	3000	236.011	236.044	937	937	0	0	0	97
8	A10-A22	94	24	235.750	236.250	1	7500	236.044	236.070	129	129	0	0	0	94
													0	0	0
9	A6-A37	16	24	236.250	236.500	1	110	236.501	236.646	76	76	0	0	0	16
									236.648				0	0	0
10	A37-A39	109	24	236.500	236.500	1	275	236.646	237.043	901	901	0	0	0	109
													0	0	0
11	A6-A32	39	24	236.250	236.500	1	125	236.501	236.813	264	264	0	0	0	39
12	A32-A31	55	24	236.500	236.750	1	75	236.813	237.546	732	732	0	0	0	55
13	A31-A49	27	24	236.750	236.750	1	100	237.546	237.816	603	603	0	0	0	27
14	A50-A51	39	24	237.750	238.000	1	65	237.816	238.416	226	226	0	0	0	39
									238.400				0	0	0
15	A1-A55	165	12	234.750	234.250	1	225	235.153	235.878	1986	1986	0	165	0	0
16	A56-A57	262	12	234.750	236.250	1	250	236.701	237.749	5423	5423	0	262	0	0
													0	0	0
17	A1-A7	47	12	234.750	234.500	1	6000	235.153	235.161	300	300	0	47	0	0
18	A7-A64	253	12	234.500	235.250	1	6000	235.161	235.203	932	932	0	253	0	0
19	A64-A43	100	12	235.350	235.500	1	6000	235.400	235.220	196	0	196	100	0	0
									235.221				0	0	0
20	A43-A62	33	12	235.500	235.500	1	5000	235.220	235.222	44	0	44	33	0	0
21	A62-A44	81	12	235.500	236.000	1	5000	235.222	235.259	505	0	505	81	0	0

Sr No.	Name of Road.	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Length of road		
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12 M Wide Road	15 M Wide Road	24 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m
22	A62-A63	70	12	235.500	235.750	1	5000	235.222	235.236	332	0	332	70	0	0
23	A63-A'45	23	12	235.750	235.500	1	5000	235.236	235.241	107	0	107	23	0	0
24	A63-A46	57	12	235.750	236.000	1	5000	235.236	235.248	433	0	433	57	0	0
													0	0	0
25	A2-A'2	49	12	235.000	234.750	1	5000	235.402	235.412	313	313	0	49	0	0
													0	0	0
26	A'3-A'58	62	12	235.000	235.000	-1	650	235.464	235.369	310	310	0	62	0	0
27	A'58-A9	98	12	235.000	235.250	-1	650	235.369	235.218	198	198	0	98	0	0
28	A9-A'8	16	12	235.250	235.250	1	5000	235.218	235.221	6	0	6	16	0	0
29	A9-A'12	34	12	235.250	235.500	1	5000	235.218	235.225	63	0	63	34	0	0
30	A9-A10	62	12	235.250	235.750	1	75	235.218	236.045	98	98	0	62	0	0
31	A'22-A'23	94	12	236.250	236.750	1	3500	236.070	236.097	469	0	469	94	0	0
32	A'23-A'24	97	12	236.750	237.000	1	5000	236.097	236.117	894	0	894	97	0	0
33	A'24-A'25	62	12	237.000	237.000	1	5000	236.117	236.129	653	0	653	62	0	0
34	A'25-A'26	88	15	237.000	237.500	1	5000	236.129	236.147	1468	0	1468	0	88	0
35	A'26-A'27	73	12	237.500	236.750	1	5000	236.147	236.161	851	0	851	73	0	0
36	A'27-A'28	91	15	236.750	236.500	1	5000	236.161	236.180	620	0	620	0	91	0
37	A14-A15	34	12	235.500	235.500	1	300	236.011	236.125	232	232	0	34	0	0
38	A15-A16	80	12	235.500	236.000	1	325	236.125	236.371	478	478	0	80	0	0
39	A15-A20	24	12	235.500	235.750	1	1000	236.125	236.149	147	147	0	24	0	0
40	A20-A21	25	12	235.750	236.250	1	1000	236.149	236.174	48	48	0	25	0	0
41	A20-A16	73	12	235.750	236.000	1	325	236.149	236.373	338	338	0	73	0	0
42	A16-A17	32	12	236.000	236.000	-1	2300	236.371	236.357	140	140	0	32	0	0
43	A17-A18	18	12	236.000	236.250	1	5000	236.357	236.360	50	50	0	18	0	0
44	A17-A5	66	12	236.000	236.000	-1	2200	236.357	236.527	271	271	0	66	0	0
45	A31-A33	87	12	236.750	237.250	-1	1300	237.546	237.479	535	535	0	87	0	0
46	A33-A34	25	12	237.250	237.500	1	5000	237.479	237.484	32	32	0	25	0	0
47	A33-A35	50	12	237.250	236.500	-1	1300	237.479	237.441	351	351	0	50	0	0
48	A35-A32	63	12	236.500	236.500	-1	100	237.441	236.811	473	473	0	63	0	0
									236.813				0	0	0
49	A35-A36	50	12	236.500	236.500	-1	75	237.441	236.774	364	364	0	50	0	0
50	A36-A37	39	12	236.500	236.500	-1	300	236.774	236.644	98	98	0	39	0	0
									236.646						
	Total	3324								13428.65	20068.56	6639.8799	2382	179	763

(Director)

Sr No.	Name of Road	Length of Pipe	Length of Pipe Line: 100 mm dia	150 mm dia	200 mm dia	250 mm dia	300 mm dia	350 mm dia	400 mm dia	Sluice Valves: 100 mm dia	150 mm dia	200 mm dia	250 mm dia	300 mm dia	350 mm dia	400 mm dia
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
		2	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	WWS-L	20							20							
2	L-B2D2	27							27							1
	SECTOR B2-															
3	D2-D5	91	91							1						
4	D5-D6	30	30							1						
5	D6-D7	56	56							1						
6	D7-D8	125	125							1						
7	D7-D11	56	56							1						
8	D11-D10	78	78													
9	D10-D14	8	8													
10	D12-D15	65	65							1						
11	D15-D16	62	62							1						
12	D16-D18	29	29							1						
13	D16-D19	61	61							1						
14	D19-D17	28	28													
15	D17-D21	66	66													
16	D17-D21	21	21													
17	D21-D22	56	56													
18	D33-D34	35	35													
19	D33-D32	70	70													
20	D32-D31	27	27													
21	D32-D29	61	61							1						
22	D29-D24	67	67							1						
23	D29-D28	132	132							1						
24	D28-D27	220	220							1						
25	D27-D26	48	48													1
26	B2D2-D21	31							31							
27	B2D1-B2D8	67							67							
28	B2D8-D7	55					55							1		

Sr.No.	Name of Road	Length of Pipe	Length of Pipe Line							Sluice Valves						
			100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
29	F7-F26	87	87													
30	F7-F25	21	21													
31	F7- F6	126					126							1		
32	F6-F23	54	54													
33	F23-F24	117	117													
34	F6-F21	56	56													
35	F21-F22	11	11													
36	F6- F5	61					61							1		
37	F5-F20	38	38							1						
38	F20-F21	98	88							1						
39	F2- F4	53				53						1				
40	F4-F3	9				9						1				
41	F3-F12	44	44							1						
42	F3-F15	170	170													
43	F15-F16	55	55													
44	F16-F17	22	22													
45	F15-F18	12	12													
46	F18-F19	18	18													
47	F18-F11	86	86													
48	F3-F2	49				49						1				
49	F2-F14	170	170							1						
50	F14-F13	57	57							1						
51	F2- F1	54				54						1				
52	F1-F0	194	194							1						
53	F9-F8	66	66													

Sr No	Name of Zone	Length of Pipe Line								Sluice Valves						
		Length of Age	100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia
		M	m	m	m	m	m	m	m	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.
54	R1- R7	86				60							1			
55	R7- R8	65	65							1						
56	R8- R9	41	41							1						
57	R7- R5	195				195							1			
58	R5- R4	15	15							1						
59	R4- R24	211	211							1						
60	R4-R1	54	54													
61	R5- R23	223	223							1						
62	R25- R24	58	58													
63	R1-R2	57	57							1						
64	R6-R6	72				72										
65	R6- R27	91	91							1			1			
66	R6- R5	5				5										
67	R3-R15	125	125							1						
68	R15-R20	151	151							1						
69	R20-R19	62	62													
70	R15-R14	54	54							1						
71	R5- R4	34				34							1			
72	R4-R14	126	126							1						
73	R14-R19	175	175													
74	R19- R18	88	88													
75	R14- R13	57	57							1						
76	R4- R3	57		57								1				
77	R3-R2	66	66							1						

Sr No.	Name of Road	Length of Pipe	Length of Pipe Line							Sluice Valves						
			100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
78	B8- B8	67	67							1						
79	B9- B9	21	21							1						
80	B10-B36	50	50							1						
81	B36-B1	87	87							1						
82	B36- B1	55	55							1						
83	B1-B15	184	184							1						
84	B15- B16	118	118							1						
85	B16- B17	16	16							1						
86	B16-B18	13	13							1						
87	B8- B12	127			127					1						
88	B12- B18	125	125							1						
89	B12- B11	51			51					1						
90	B11-B11	99	99							1						
91	B31-B17	151			151					1						
92	B11- B27	6	6							1						
93	B13-B16	68			68					1						
94	B13- B10	249			249					1						
	SECTOR B2A-															
95	B2B10-B2A1	73			73					1						
96	A1-A55	110		110						1						
97	A1-A7	56	56							1						
98	A7-A64	254	254							1						
99	A64-A45	81	81							1						
100	A13-A62	11	11							1						
101	A62-A44	65	65							1						
102	A62-A63	70	70							1						
103	A62-A45	20	20							1						
104	A63-A46	41	41							1						
105	A1-A2	56		56						1						
106	A2-A3	6		6						1						

Length of Pipe Line

Sluice Valves

Sr No.	Name of Road	Length of Pipe	100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
107	A 9-A58	94		94												
108	A 58-A9	95		95												
109	A8-A8	18	18													
110	A9-A10	97		97												
111	A10-A22	88	88													
112	A22-A23	88	88													
113	A23-A 24	107	107													
114	A24-A25	64	64													
115	A25-A26	74	74													
116	A26-A27	73	73							1						
117	A27-A28	80	80													
118	A28-A14	103		109							1					
119	A14-A59	71	71							1						
120	A59-A60	44	44							1						
121	A14-A15	25		25												
122	A15-A16	76	76							1						
123	A15-A23	23		23												
124	A20-A21	19	19							1						
125	A21-A16	70		70												
126	A16-A17	39	39							1						
127	A17-A18	11	11													
128	A17-A5	74	74							1						
129	A5-A60	97	97							1						
130	A5-A6	71	71													
131	A6-A37	13	13							1						
132	A37-A37	42	42							1						
133	A37-A36	30	30													
134	A36-A35	50	50													

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Key consultants Pvt Ltd

Sl. No.	Name of Road	Length of Pipe	Length of Pipe Line							Sluice Valves						
			100 mm (4")	150 mm (6")	200 mm (8")	250 mm (10")	300 mm (12")	350 mm (14")	400 mm (16")	100 mm (4")	150 mm (6")	200 mm (8")	250 mm (10")	300 mm (12")	350 mm (14")	400 mm (16")
		m	ft	in	m	m	ft	in	m	No.	No.	No.	No.	No.	No.	No.
139	A6-A32	41	43							1						
140	A32-A31	55	53							1						
141	A32-A33	54	54							1						
142	A25-A39	45	45							1						
143	A31-A40	28	28							1						
144	82A31-82A32	77	77							1						
145	82A33-82A34	25	25							1						
	-															
146	82F8-F27	28							48							1
	-															
147	F27-F28	149	149							1						
148	F28-F31	15	15							1						
149	F30-F31	61	61							1						
150	F36-F34	41	41							1						
	-															
151	F27- D22	47						47							1	
152	D22-D38	85						53							1	
	-															
153	D38-D39	62	62							1						
154	D39-D49	47	47							1						
	-															
155	D38- D20	180						180							1	
	-															
156	82D20-82D30	51				51							1			
157	D20-F31	25	25							1						
158	F30-C8	61			61							1				
159	C8-F29	62	62							1						
160	C8-C48	30			30							1				
161	C48- C7	26			26							1				
162	C7-C17	61			61							1				
163	C17-C25	125			125							1				
164	C25-C26	69			69							1				
165	C26-C27	51	51							1						
166	C26-C45	29			29							1				
167	C45-C14	38			38							1				
168	C14-C42	57		57						1						

Key consultants Pvt Ltd

Sheet No: 22

Sr No	Name of Road	Length of Pipe	Length of Pipe Line							Sluice Valves						
			100 mm (4")	150 mm (6")	200 mm (8")	250 mm (10")	300 mm (12")	350 mm (14")	400 mm (16")	100 mm (4")	150 mm (6")	200 mm (8")	250 mm (10")	300 mm (12")	350 mm (14")	400 mm (16")
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
165	C42-C43	57	57							1						
166	C43-C44	39	39							1						
167	C42-C24	91		91							1					
168	C24- C22	36		36						1						
169	C22- C21	64		64						1						
170	C21-C31	10	10							1						
171	C21-C1	170		170							1					
172	C1-F35	64	64							1						
173	F35- C2	37	37							1						
174	C2- C4	61	61							1						
175	B35-F32	35	35							1						
176	C2- B11	66		66							1					
177	B11-B13	124	124							1						
178	B11-B10	54	54							1						
179	B10-F33	92	92							1						
180	B10- B9	56	56							1						
181	B9- B31	62	62							1						
182	B31- B30	41	41							1						
183	B31- B32	7	7							1						
184	B30- B35	118	118							1						
185	B24-B25	48	48							1						
186	B25- B23	90	90							1						
187	B25- B26	11	11							1						
188	B26- B34	126	126							1						
189	B26- B27	47	47							1						
190	B27- B28	89	89							1						
191	B27- B22	87	87							1						
192	B28B22-B2B33	87	87							1						

Sr No.	Name of Road	Length of Pipe Line								Sluice Valves							
		Length of Pipe	100 mm I/d	150 mm I/d	200 mm I/d	250 mm I/d	300 mm I/d	350 mm I/d	400 mm I/d	100 mm I/d	150 mm I/d	200 mm I/d	250 mm I/d	300 mm I/d	350 mm I/d	400 mm I/d	
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.	
193	82D/90-	69					69							1			
194	D29 - D24	75	75							1							
195	D23-D26	144					144							1			
196	D25-82C16	27				27							1				
197	82C16-82C52	217		217							1						
198	C22-C53	81	81							1							
199	C53-C54	138	138							1							
200	C54-C38	24		24							1						
201	C38-C60	38	38							1							
202	C38-C35	84		84							1						
203	C35-C13	149	149							1							
204	C35-C55	60		60							1						
205	C25-C12	158	158							1							
206	C35-C50	72		72							1						
207	C50-C51	79	79							1							
208	C50-C25	66	66							1							
209	C39-C48	137	137							1							
210	C51-C56	99	99							1							
211	C56-B7	87	87							1							
212	B7-B12	100	100							1							
213	C54-C31	56	56							1							
214	C51-C32	35	35							1							
215	C31-C30	59	59							1							
216	C30-C29	10	10							1							
217	82C30-82C49	52	52							1							
218	82C16-82C18	42			42												

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For Key consultants Pvt Ltd

Sr No	Name of Road	Length of Pipe	Length of Pipe Line						Sluice Valves						
			100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
219	C18-C20	81				81							1			
220	B20-B25	135				135							1			
221	B25-B24	65	65							1						
	SECTOR B5-															
222	B24-B5B25	71				71							1			
223	B26-B25	30				30							1			
224	B25-B27	75				75							1			
225	B27-B30	45				45							1			
226	B21-B29	51	51							1						
227	B30-B24	48	48							1						
228	B20-B30	94	94							1						
229	B29-B31	40	40							1						
230	B20-B19	47			47							1				
231	B19-B31	133	133							1						
232	B30-B31	40	40							1						
233	B10-B18	41			41							1				
234	B18-B54	156		156								1				
235	B18-B17	26			26							1				
236	B17-B22	75	75							1						
237	B22-B34	167	167							1						
238	B33-B34	39		39								1				
239	B17-B16	52		52								1				
240	B16-B35	190	190							1						
241	B34-B35	37		37								1				
242	B16-B15	37		37								1				
243	B16-B02	59	59							1						
244	B15-B26	176	176							1						
245	B35-B36	39		39								1				
246	B36-C1	62		62								1				

Sheet No:-75

Sr No.	Name of Road	Length of Pipe	Length of Pipe Line						Sluice Valves						
			100 mm dia	150 mm dia	200 mm dia	250 mm dia	300 mm dia	350 mm dia	400 mm dia	100 mm dia	150 mm dia	200 mm dia	250 mm dia	300 mm dia	350 mm dia	400 mm dia
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
247	B15-B14	42		42												
248	B14-B7	52		52												
249	B7-B12	38	38							1						
250	B7-B9	67		67												
251	B9-B11	58	58							1						
252	B9-B8	32		32												
253	B8-B10	38	38							1						
254	B8-B4	48		48												
255	B4-B9	38	38							1						
256	B4-B3	31		31												
257	B3-B5	27	27							1						
258	B3-B2	169		169							1					
259	B2-B1	15	15													
260	BSB1-BSA1	156	156													
261	A1-A3	23	23													
262	A2-A9	75	75							1						
263	A2-A4	56	56							1						
264	A4-A5	97	97													
265	A5-A6	46	46													
266	C1-C2	30		30							1					
267	C2-C15	29	29													
268	C15-C19	57	57													
269	C15-C16	49	49													
270	C16-C18	51	51													
271	C16-C17	75	75													
272	C17-C10	93	93													
273	C2-B40	30	30							1						
274	B40-B41	130	130							1						
275	B40-B42	141	141							1						
276	C2-C4	52		52												
277	C4-C20	109	109							1						
278	C4-C5	33		33							1					

Sheet No:- 26

Ky consultants Pvt Ltd

Sr No.	Name of Road	Length of Pipe	Length of Pipe Line							Sluice Valves						
			100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
279	C5-B37	128	128													
280	B37-B38	28	28													
281	B38-B39	94	94													
282	C5-C6	78	78													
283	C6-C7	98	98													
284	C7-C9	111	111													
285	C8-C9	45	45													
286	C9-C10	95	95							1						
287	C10-C14	77	77							1						
288	C10-C1	58	58							1						
289	C11-C21	60	60							1						
290	&C11-&5C12	58	58													
			1433	2535	1334	1116	465	280	205	205	38	18	18	5	3	3
291	C- 82D2	35							35							
292	82D3-D 15	142							110							1
293	D13-D 12	22							22							
294	83D12-A35	225							225							
	JUNCTION 55-															1
295	A35-A35	83							83							
296	A53-A40	77						77							1	
297	A39-A39	160						160								
298	A50-A42	155	155													
299	A70-A51	60					60									
300	A51-A40	26	26							1						
301	A40-A38	41	41													
302	A38-A36	17	17							1						
303	A36-A37	135	135													
304	A38-A32	80	80							1						

Sheet No: 27

Ky consultants Pvt Ltd

Sl No	Name of Road	Length of Pipe	Length of Pipe Line							Sluice Valves						
			100 mm (4")	150 mm (6")	200 mm (8")	250 mm (10")	300 mm (12")	350 mm (14")	400 mm (16")	100 mm (4")	150 mm (6")	200 mm (8")	250 mm (10")	300 mm (12")	350 mm (14")	400 mm (16")
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
305	A32-A31	107	107													
306	A31-A25	53	53													
307	A32-A33	82	82													
308	A33-A34	60	60													
309	A34-A31	58	58													
310	A31-A41	140						140								
311	A41-E7	30				30										
312	E7-E5	212	212													
313	E5-E4	49	49								1					
314	E5-E15	65	65								1					
315	E15-E16	119	119								1					
316	E15-D17	88	88													
317	E7-83A57	25				25							1			
318	A37-b29	229				229							1			
319	E20-E21	80			80											
320	E21-E27	159	159													
321	E27-E26	56	56													
322	E26-b38	93	93													
323	E27-b29	107	107								1					
324	E29-b30	7	7								1					
325	b29-E24	34	34								1					
326	E27-b33	99	99								1					
327	b33-b34	49	49								1					
328	b34-E35	46	46													
329	E21-b23	32			32								1			

Sheet No:- 26

Key Instruments Pvt Ltd

Sr No.	Name of Road	Length of Pipe	Length of Pipe Line							Sluice Valves						
			100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia
		m.	m.	m.	m.	m.	m.	m.	m.	No.	No.	No.	No.	No.	No.	No.
330	D22-A21	75			75							1				
331	A23-A21	82	82							1						
332	A22-B23	33		33												
333	B23-B25	30		30												
334	B25-A24	87		87												
335	A24-A59	136	136							1						
336	A58-A60	107	107							1						
337	A11-A11	56		56												
338	A11-A10	181		181												
339	A10-A15	49	49							1						
340	A10-A7	55		55							1					
341	A7-A7	95	95							1						
342	A7-A20	70	70							1						
343	A7-A1	56		56							1					
344	A1-A3	62	62							1						
345	A1-A4	22	22							1						
346	A1-A2	199	199							1						
347	A2-A2	42	42							1						
348	A10-A9	181	181							1						
349	A9-A6	52	52							1						
350	A6-A20	43	43							1						
351	A6-A3	56	56							1						
352	A3-A5	37	37							1						
353	A9-A12	58	58							1						
354	A12-A13	54	54							1						
355	A13-A15	53	53							1						
356	A15-A16	38	38							1						
357	89A15-83A15	39	39							1						

Sheet No:-29

S. No.	Name of Road	Length of Pipe	Length of Pipe Line. 100 mm DI	150 mm DI	200 mm DI	250 mm DI	300 mm DI	350 mm DI	400 mm DI	Sluice Valves 100 mm DI	150 mm DI	200 mm DI	250 mm DI	300 mm DI	350 mm DI	400 mm DI
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
358	A41-B6	20				20							1			
359	B5-B4	211		211												
360	B4-B14	113	113							1						
361	B14-B13	56	56							1						
362	B13-B15	115	115							1						
363	B13-B11	28	28							1						
364	B11-B12	47	47							1						
365	B11-B10	30	30							1						
366	B10-B2	160	160							1						
367	B2-C2	113	113							1						
368	B2-C1	49	49							1						
369	C10-C8	49	49							1						
370	C8-C1	169	168							1						
371	C1-B12	56	56							1						
372	B6-A42	37				37							1			
373	A42-A56	13				13							1			
374	A56-B3	83	83							1						
375	A56-A43	40				40							1			
376	A43-A55	55	55							1						
377	A43-A57	9				9							1			
378	A57-A44	49				49							1			
379	A44-A54	100	100							1						
380	A44-C1	209	209							1						
381	A44-A45	55				55							1			
382	A45-A48	71	71							1						
383	A46-B7	57	57							1						

Sheet No.-20

Ryconsultants Pvt. Ltd.

Sr No.	Name of Node	Length of Pipe	Length of Pipe Line								Sluice Valves						
			100 mm (4")	150 mm (6")	200 mm (8")	250 mm (10")	300 mm (12")	350 mm (14")	400 mm (16")	500 mm (20")	150 mm (6")	200 mm (8")	250 mm (10")	300 mm (12")	350 mm (14")	400 mm (16")	
		m	m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
385	A46-A47	52	52									1					
386	A45-B12	208				208											
387	B12-B10	24				24							1				
388	B10-C10	206		206							1						
389	C10-C11	64	64									1					
390	C11-C7	84	84									1					
391	C7-C8	29	29														
392	C8-C12	128	128									1					
393	C7-C6	55	55														
394	C6-C13	182	182									1					
395	B12-B13	35		35													
396	B13-B14	43		43													
397	B14-B17	46		46													
398	B17-B27	8		8								1					
399	B27-B19	56		56								1					
400	B19-B21	40		40								1					
401	B21-B22	14		14								1					
402	B22-B5	87		87													
403	B2B5-B6	273	273														
404	B6-B9	78	78														
405	B4-B6	64	64														
406	B4-B9	56	56									1					
407	B2-B2	18	18														
	SECTOR B4-																
407	B2B5-B1D17	72		72								1					
408	B1D17-D14	149	149									1					
409	D17-D18	49		49								1					
410	D18-D6	30	30									1					

Sheet No: 43

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Sr No.	Name of Road	Length of Pipe	Appurtenances of Water Supply														
			Length of Pipe Line							Sluice Valves							
			100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
411	D18-D3	128	128							1						
412	D18-D19	129	129							1						
	-															
413	D18-D'23	44		44							1					
414	D'23-D5	37	37							1						
415	D'32-D21	166		166							1					
416	D21-D7	22	22							1						
	-															
417	D7-D23	74	74							1						
418	D23-A'7	92	92							1						
419	A'7-B1	59	59							1						
420	B1-E2	22	22							1						
421	E2-E3	50	50							1						
422	E2-E4	30	30							1						
	-															
423	D7-D20	90	90							1						
424	D20-D19	143	143							1						
425	D19-D2	108	108							1						
426	D2-A2	61	61							1						
427	A2-D1	27	27							1						
428	A2-A'2	62	62							1						
429	A2-A1	53	53							1						
430	84A1-84A11	153	153							1						
431	A11-A12	53	53							1						
432	A12-A'12	53	53							1						
433	84A12-84A'11	18	18													
	Total Length	31372	7695	1558	167	737	209	237	507	98	21	3	12	1	2	5
	Road Length	36006	22033	4093	1501	1855	665	517	710	301	59	21	39	6	5	10

DESIGN STATEMENT OF SEWER

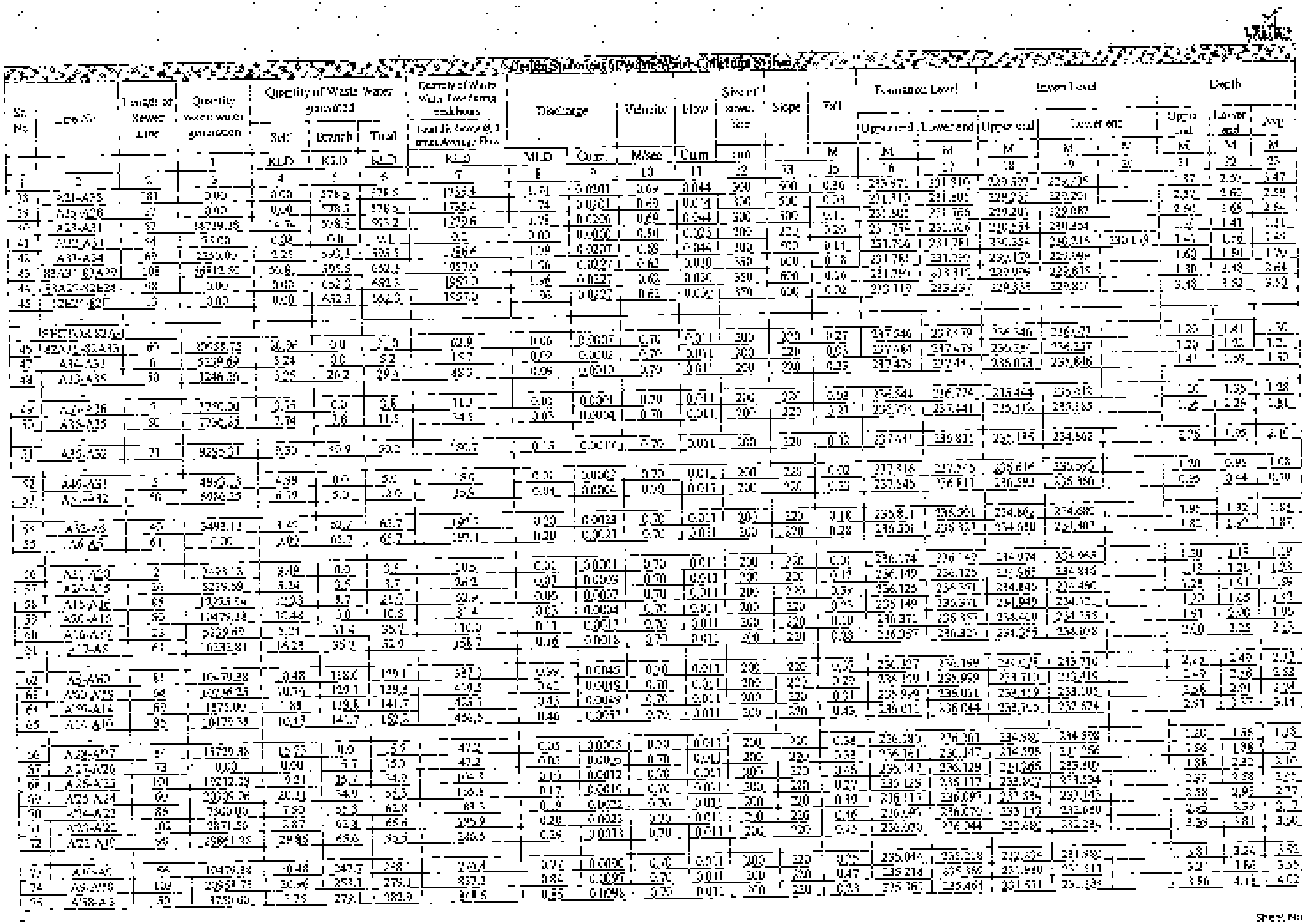
Detail of Area Residential Vatika India Next,Gurgaon

Sr. No.	Description Residential (Planned) Category of Plots	Size of Plot Width	Size of Plot Depth	Area of each Unit / Plot	Total Area		Daily Water Requirement Water Allowance	Water Requirement	Net Water Requirement	Anticipated Waste Water, Average Value at 75% of water contributing to waste water
		m	m	Sq.m.	Sq.m.	Acres	Ltrs./Capita/ Day	Ltrs./Day	Ltrs./Day	Ltrs./Day
1.11	A	4.50	12.50	56.25	27956	6.91	135	603855	603855	452891
1.12	A1	5.00	10.00	50.00	2600	0.64	135	62180	62180	46635
1.13	B	8.20	18.40	150.88	21570	5.33	172.5	333011	333011	249758
1.14	C	10.51	19.04	200.68	24183	6.05	172.5	284108	284108	213081
1.15	D	8.20	18.40	150.88	54468	13.46	172.5	840079	840079	630059
1.16	E	10.69	19.06	201.82	54291	13.42	172.5	626634	626634	469975
1.17	F	10.00	24.00	254.40	53326	8.23	172.5	305066	305066	228800
1.18	F1	11.30	22.00	250.80	43588	10.72	172.5	402871	402871	302155
1.19	G	12.30	24.00	295.20	60765	15.76	172.5	503810	503810	377858
1.20	H	14.13	23.36	330.07	52481	12.97	172.5	370271	370271	277703
	HI	12.98	25.77	334.49	31442	7.77	172.5	218903	218903	164177
1.22	H2	13.68	25.00	342.00	4788	1.18	172.5	32603	32603	24452
1.23	I	15.80	25.00	400.92	24464	7.28	172.5	167670	167670	125753
1.24	II	14.50	28.80	417.60	418	0.10	172.5	2329	2329	1747
1.25	J	15.90	25.90	411.81	9060	2.24	172.5	51213	51213	38424
1.26	K	14.40	27.60	339.84	9516	2.35	172.5	65205	65205	48904
1.27	L	11.62	25.91	301.07	1806	0.45	172.5	13073	13073	9804
1.28	M	9.94	20.56	205.39	13967	3.45	172.5	158355	158355	118766
	Sub Total				478793	118.31		5042756	5042756	3782067
2	Area under Group Housing				113311	28.00	172.5	1449900	1449900	1086750
3	Commercial Area			Sqm	Sqm	Acres				
3.1	Commercial Area				52060	12.87	25000	321750	321750	241313
3.2	Nursing Home	2.21		1127	8944	2.21	5000	40000	40000	30000
4	Community Area			Acres	Sqm	Acres				
4.1	High School		16.76	5.00	67825	16.76	150000	450000	450000	337500
4.2	Primary School		4.22	1.00	17078	4.22	50000	200000	200000	150000
4.3	Nursery School		1.54	0.20	6232	1.54	10000	60000	60000	45000
4.4	Creche		0.75	0.20	3035	0.75	10000	30000	30000	22500
4.5	Dispensary		2.20	1.25	9146	2.26	25000	56500	56500	42375
4.6	Club / Community		4.11	2.00	16632	4.11	25000	102750	102750	77063
4.7	Religious Building		0.59	0.20	2388	0.59	10000	20000	20000	15000
4.8	Taxi Stand		0.1605	0.50	12790	3.16	5000	30000	30000	22500
4.9	Police Post		1.02	1.02	4128	1.02	25000	25500	25500	19125
4.10	Health Centre		2.68	2.68	10843	2.67	25000	65750	65750	49313
	Sub Total				149826	37.04		1040500	1040500	780375
5	Undetermined use				730043	34.26	25000	856500	856500	642375
5	Green Area			13.16	532342	13.16	25000	329000		
5.1	Organised Green - Area under Green			8.6	34762.3	8.59	25000	214750		
5.2	Residential Green				88010	21.750		543750		
	Sub Total				754076	18.709	10000	187000		
6	Area under Master Roads				486483	120.214	10000	1302140		
7	Area under Roads				1591850	393.358		10683390	8741506	6906942
	Total Area / Total Demand					1,591.82		9234396	7301506	5924172
	Fire Demand Plotted									

M/s Ke Consultants Pvt Ltd

vatika

Abstract of Sewer Pipe Line											
	STT 1			STP 2			STT 3				
	Length	Average Depth	Manhole	Length	Average Depth	Manhole	Length	Average Depth	Manhole	Total Length	Total ManHoles
200	5018	1.69	254	10688	1.74	535	4962	1.91	253	20668	1042
250	570	2.27	27	920	3.61	47	745	3.41	38	2235	112
300	944	3.96	48	923	3.09	46	666	3.49	34	2533	128
350	0	0	0	879	4.80	43	457	3.28	23	1336	66
400	0	0	0	787	3.94	39	0	0	0	787	39
450	67	4.22	3	0	0	0	15	4.45	1	82	4
500	0	0	0	408	4.67	21	0	0	0	408	21
700	46	4.34	3	94	5.19	5			0	140	8
	6645		335	14699		736	6845		349	28189	1420



Design Statement for Proposed Main Outfall Sewer

Sr. No	Length of Sewer Line	Quantity wastewater generation	Quantity of Waste Water generated: Sub	Branch	Total	Density of Waste Water Flowing in sewer Average Flow	Discharge MLD	Discharge Cusec	Velocity Mtrs	Flow Cum	Sewer size mm	Slope 1:00	Full M	Freeboard Level: Upper end M	Freeboard Level: Lower end M	Invert Level: Upper end M	Invert Level: Lower end M	Depth: Upper end M	Depth: Lower end M	Depth: Avg M
			KLD	KLD	KLD	KLD														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
38	A21-A25	281	0.00	576.2	576.2	1728.4	1.71	0.0201	0.67	0.044	300	500	0.36	235.971	231.910	229.627	226.035		2.57	2.52	2.47
39	A25-A26	97	0.00	0.00	576.2	576.2	1728.4	1.71	0.0201	0.69	0.044	300	500	0.34	231.910	231.602	229.227	225.201		2.68	2.65	2.66
40	A26-A27	97	18719.18	0.00	576.2	576.2	1728.6	1.71	0.0200	0.68	0.044	300	500	0.31	231.602	231.165	229.201	229.082		2.40	2.08	2.24
41	A27-A31	97	18719.18	0.00	576.2	576.2	1728.6	1.71	0.0200	0.68	0.044	300	500	0.31	231.165	230.728	229.082	228.454		2.08	1.67	1.88
42	A31-A41	97	18719.18	0.00	576.2	576.2	1728.6	1.71	0.0200	0.68	0.044	300	500	0.31	230.728	230.291	228.454	227.826		2.27	1.87	2.07
43	A41-A54	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
44	A54-A55	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
45	A55-A56	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
46	A56-A57	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
47	A57-A58	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
48	A58-A59	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
49	A59-A60	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
50	A60-A61	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
51	A61-A62	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
52	A62-A63	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
53	A63-A64	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
54	A64-A65	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
55	A65-A66	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
56	A66-A67	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
57	A67-A68	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
58	A68-A69	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
59	A69-A70	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
60	A70-A71	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
61	A71-A72	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
62	A72-A73	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
63	A73-A74	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
64	A74-A75	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
65	A75-A76	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
66	A76-A77	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
67	A77-A78	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
68	A78-A79	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
69	A79-A80	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
70	A80-A81	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
71	A81-A82	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
72	A82-A83	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
73	A83-A84	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
74	A84-A85	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
75	A85-A86	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47

Table 1

Quantity of Waste Water

Source Notes

| | | |

Design Statement of Waste Water Collection System

Sr. No	Line No	Length of Sewer Line	Quantity waste water generation	Quantity of Waste Water generated			Quantity of Waste Water flow during peak hours	Discharge		Velocity	Flow	Size of sewer line	Slope	Fall	Formation Level		Invert Level			Depth		
				Self	Branch	Total	Total discharge @ 3 times Average Flow								Upper end	Lower end	Upper end	Lower end		Upper end	Lower end	Avg
			L	KLD	KLD	KLD	KLD	MLD	Cu.m.	M/sec	Cu.m.	mm		M	M	M	M	M	M	M	M
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
374	A13-A12	3	3206.25	3.20	0.00	3.20	9.60	0.01	0.0001	0.70	0.011	300	220	0.01	229.728	229.724	228.928	228.514		1.20	1.21	1.20
375	A12-A12	53	4180.63	4.10	0.00	4.10	12.30	0.01	0.0001	0.70	0.011	300	220	0.24	229.725	229.724	228.525	228.296		1.20	1.43	1.31
376	A12-A11	54	2735.63	2.73	7.40	10.13	30.38	0.03	0.0004	0.70	0.011	300	220	0.25	229.724	229.717	228.296	228.048		1.43	1.67	1.55
377	A11-A1	141	10693.13	10.69	10.13	20.82	62.47	0.06	0.0007	0.70	0.011	300	220	0.66	229.717	229.688	228.048	227.408		1.67	2.28	1.97
378	A1-A2	53	6592.50	6.59	20.82	27.42	82.25	0.08	0.0010	0.80	0.023	300	220	0.24	229.688	229.495	227.408	227.167		2.28	2.33	2.30
379	A2-A2	30	6671.25	6.67	0.00	6.67	20.01	0.02	0.0002	0.70	0.011	300	220	0.14	229.507	229.495	228.307	228.171		1.20	1.32	1.26
380	D1-A2	37	4983.75	4.98	0.00	4.98	14.93	0.01	0.0002	0.70	0.011	300	220	0.24	229.506	229.495	228.306	228.069		1.20	1.43	1.31
381	A2-D2	62	3817.50	3.81	39.07	42.88	128.65	0.12	0.0015	0.80	0.023	300	220	0.28	229.495	229.380	227.167	226.885		2.33	2.70	2.51
382	D2-D15	136	12301.88	12.30	42.88	54.19	162.55	0.16	0.0019	0.70	0.011	300	220	0.53	229.380	229.755	226.885	226.333	226.010	2.70	3.58	3.64
383	D19-D18	129	18972.13	18.97	54.18	73.16	219.48	0.22	0.0025	0.61	0.015	350	400	0.52	229.730	229.950	226.333	226.010	225.985	3.46	3.74	3.57
384	D3-D18	145	26105.75	26.10	0.00	26.10	78.31	0.06	0.0009	0.70	0.011	300	220	0.86	229.777	229.730	228.777	227.918	227.868	1.20	1.85	1.52
385	D6-D18	42	7155.00	7.16	0.00	7.16	21.47	0.02	0.0002	0.70	0.011	300	220	0.19	229.760	229.750	228.560	228.369	228.315	1.20	1.38	1.29
386	D18-D17	53	2733.75	2.73	199.90	202.63	607.89	0.61	0.0026	0.61	0.023	300	500	0.11	229.750	229.740	225.832	225.726		3.92	4.01	3.97
387	D4-D4D17	132	16656.25	16.66	0.00	16.66	49.97	0.05	0.0006	0.80	0.025	300	220	0.60	229.773	229.740	228.573	227.973		1.20	1.77	1.48
388	D4D17-B9B8	77	0.00	0.00	219.49	219.49	658.46	0.66	0.0076	0.69	0.024	300	500	0.17	229.740	230.018	225.726	225.590		4.01	4.44	4.23
389	B9B8-B5B9	10	4985.75	4.98	0.00	4.98	14.95	0.01	0.0002	0.70	0.011	300	220	0.14	230.765	230.760	229.565	229.429		1.20	1.33	1.27
390	B5-B4	54	1500.00	1.50	4.98	6.48	19.45	0.02	0.0002	0.70	0.011	300	220	0.25	230.760	230.748	229.429	229.183		1.33	1.56	1.45
391	D5-B4	62	13051.88	13.05	0.00	13.05	39.16	0.04	0.0005	0.70	0.011	300	220	0.28	230.760	230.748	229.560	229.278		1.20	1.47	1.33
392	B4-B3	86	0.00	0.00	19.54	19.54	58.61	0.06	0.0007	0.70	0.011	300	220	0.39	230.748	230.674	229.183	228.792		1.56	1.88	1.72
393	B5-B5B5	206	33552.50	33.55	19.54	53.09	159.26	0.16	0.0018	0.70	0.011	300	220	0.92	230.674	230.018	228.792	227.456		1.88	2.16	2.02
394	B5B5-B5B22	54	0.00	0.00	271.18	271.18	813.53	0.81	0.0094	0.61	0.022	300	500	0.17	230.018	229.901	225.590	225.412		4.44	4.49	4.46
395	B5B5-B21	35	0.00	0.00	271.18	271.18	813.53	0.81	0.0094	0.70	0.011	300	220	0.16	229.901	229.806	225.412	225.253	225.228	4.49	4.55	4.52
396	D21-B10	18	4015.25	4.02	271.18	275.22	825.67	0.83	0.0096	0.61	0.022	300	500	0.04	229.806	229.636	225.228	225.192		4.58	4.44	4.51
397	B19-D27	53	8535.25	8.55	275.22	283.77	851.30	0.85	0.0099	0.61	0.022	300	500	0.11	229.636	229.332	225.192	225.086		4.44	4.24	4.34
398	B27-D17	14	0.00	0.00	283.77	283.77	851.30	0.85	0.0099	0.61	0.022	300	500	0.03	229.332	229.267	225.086	225.058		4.24	4.21	4.23
399	B17-B14	56	10799.25	10.80	283.77	294.56	883.69	0.88	0.0102	0.61	0.022	300	500	0.11	229.267	229.433	225.058	224.948		4.21	4.50	4.37
400	B14-B13	35	6725.63	6.73	296.56	301.29	903.87	0.90	0.0105	0.61	0.022	300	500	0.08	229.483	229.709	224.948	224.870		4.54	4.84	4.69
401	B9B13-B3B13	16	0.00	0.00	301.29	301.29	903.87	0.90	0.0105	0.61	0.022	300	500	0.03	229.709	229.609	224.870	224.838		4.84	4.76	4.80
402	B7B13-B9C10	313	19668.75	19.67	874.02	894.69	2683.9	2.58	0.0311	0.69	0.044	300	500	0.43	229.600	228.651	224.838	224.412	224.222	4.76	4.23	4.50
403	C11-C10	76	6834.38	6.83	0.00	6.83	20.50	0.02	0.0002	0.70	0.011	300	220	0.35	228.744	228.651	227.546	227.220		1.10	1.33	1.22
404	B9C10-B9C7	87	4687.50	4.69	931.33	936.01	2716.0	2.72	0.0315	0.69	0.101	450	850	0.08	228.543	228.308	224.299	224.220	224.033	4.34	4.04	4.22
405	C13-C6	215	19138.25	19.14	0.00	19.14	57.41	0.06	0.0007	0.70	0.011	300	220	0.98	228.335	228.128	227.135	226.158		1.20	1.97	1.59
406	B9C6-B9C7	71	187.50	0.19	19.14	19.32	57.97	0.06	0.0007	0.70	0.011	300	220	0.32	228.128	228.308	226.158	225.834		1.97	2.47	2.22
407	B9C9-B9C8	31	7500.00	7.50	935.34	952.44	2798.5	2.80	0.0324	0.73	0.255	700	1400	0.03	228.308	228.275	224.033	224.011		4.28	4.26	4.52
408	B9C10-B9C8	147	13847.06	13847	0.00	138.47	413.41	0.42	0.0048	0.70	0.011	300	220	0.67	228.530	228.275	227.330	226.663		1.20	1.71	1.46
409	B9C8-STP1	15	0.00	0.00	1071.3	1071.3	3213.9	3.21	0.0372	0.73	0.255	700	1400	0.01	228.275	228.274	224.011	224.000	223.64(2)	4.26	4.27	4.27
		38236	8284185	5284																		

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Sr. No.	Line No	Length of Sewer Line	Sewer Pipe Line 200 mm dia		Sewer Pipe Line 250 mm dia		Sewer Pipe Line 300 mm dia		Sewer Pipe Line 350 mm dia		Sewer Pipe Line 400 mm dia		Sewer Pipe Line 450 mm dia		Sewer Pipe Line 500 mm dia		Sewer Pipe Line 900 mm dia	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	[illegible]	46	46	1.62														
2	A3-A4	153	153	1.42														
3	A8-A9	41	41	1.29														
4	A5-A6	41	41	1.35														
5	A6-A7	32	32	1.92														
6	A20-A7	18	18	.90														
7	A7-A8	105	105	3.42														
8	A3-A10	56	56	1.85														
9	A-CA1	40	40	1.99														
10	A4-A5	53	53	1.45														
11	A20-A6	48	48	1.00														
12	A4-A5	56	56	1.39														
13	A16-A15	6	6	1.24														
14	A15-A13	40	40	1.45														
15	A14-A12	57	57	1.64														
16	A19-A12	54	54	1.32														
17	A12-A9	54	54	2.16														
18	A5-A10	175	125	2.66														
19	A13-A10	50	50	1.26														
20	A10-A_1	125			125	3.99												
21	A21-A10	23	23	1.31														
22	A11-A14	51			51	3.01												
23	A40-A37	75	0	1.56														
24	A39-A38	101	101	3.01														
25	A18-A35	110			110	2.81												
26	A35-A33	45			45	2.8												
27	A32-A26	27	27	1.28														
28	A29-A30	35	35	1.30														
29	A31-A27	44	44	1.28														
30	A28-A26	27	0	0														
31	A26-A25	68	68	3.79														
32	A23-A24	49	49	2.15														
33	A21-A22	93	93	2.57														
34	A21-A20	44	44	3.00														
35	A20-A25	81	81	3.60														
36	A23-A21	19	19	1.05														
37	A-CA1	91					91	4.27										

Sheet No-12

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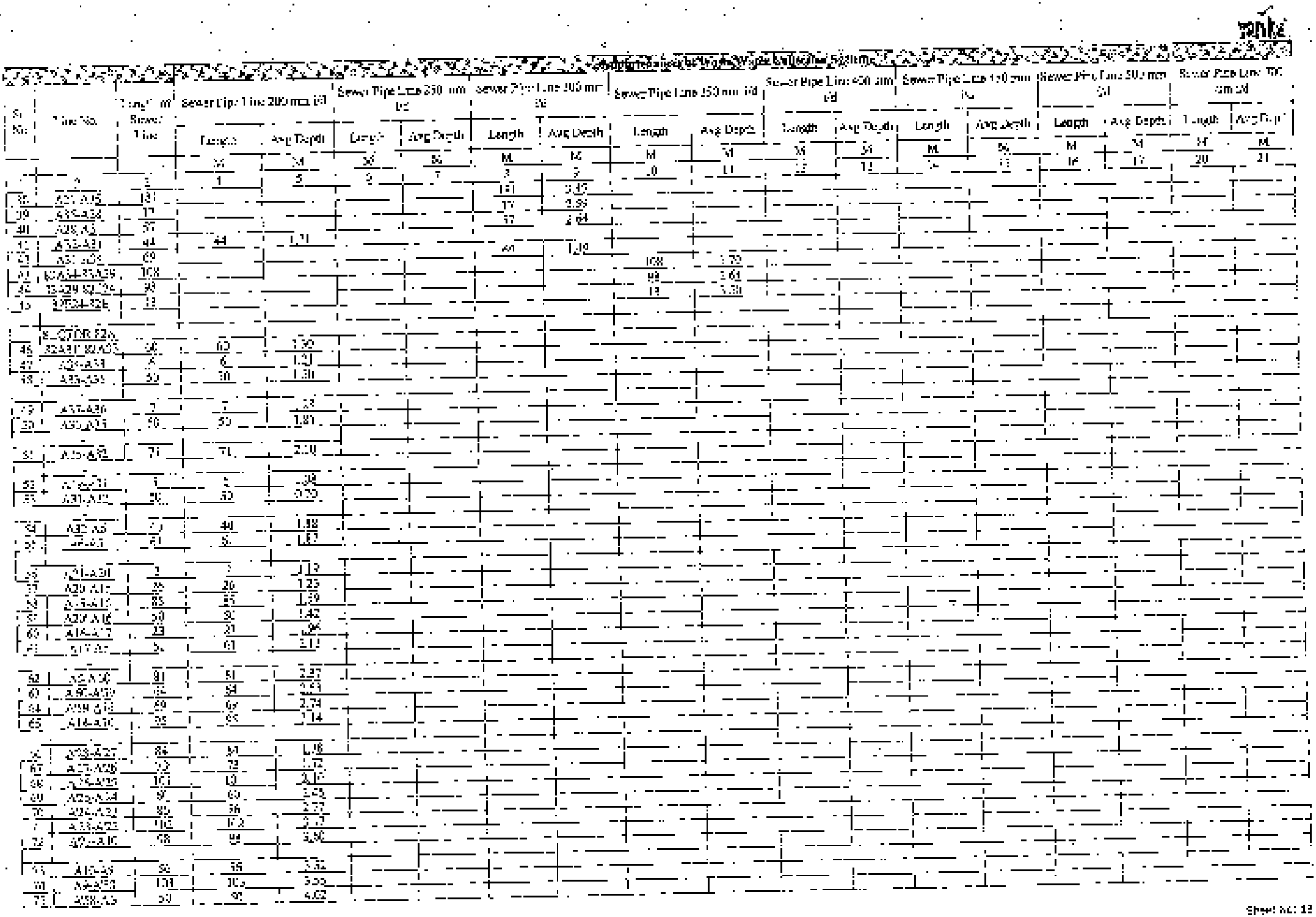

Sl No	Line No.	Length of Sewer Line	Sewer Pipe Line 200 mm Id		Sewer Pipe Line 250 mm Id		Sewer Pipe Line 300 mm Id		Sewer Pipe Line 350 mm Id		Sewer Pipe Line 450 mm Id		Sewer Pipe Line 500 mm Id		Sewer Pipe Line 600 mm Id		Sewer Pipe Line 700 mm Id	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
	A	1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
38	A37-A35	181					181	3.45										
39	A35-A34	177					177	3.39										
40	A34-A2	97					97	2.64										
41	A33-A31	44	44	1.71														
42	A31-A30	69					69	1.19										
43	A30-A28+A29	108							108	1.22								
44	A28+A29-A26	98							98	1.61								
45	A26-A24	13							13	1.31								
	B_OTHER 22A																	
46	B2A31-B2A30	60	60	1.30														
47	A29-A31	6	6	1.30														
48	A35-A33	30	30	1.30														
49	A32-A30	2	2	1.30														
50	A30-A28	50	50	1.81														
51	A25-A24	71	71	2.10														
52	A27-A31	2	2	1.30														
53	A31-A29	50	50	0.70														
54	A29-A27	40	40	1.88														
55	A27-A25	81	81	1.87														
56	A31-A30	2	2	1.12														
57	A29-A28	20	20	1.23														
58	A28-A26	85	85	1.29														
59	A26-A25	90	90	1.42														
60	A25-A23	23	23	1.66														
61	A24-A22	24	61	2.17														
62	A26-A24	81	81	2.27														
63	A25-A23	84	84	2.23														
64	A23-A22	69	69	2.29														
65	A22-A21	25	25	2.14														
66	A23-A21	84	84	1.16														
67	A21-A20	72	72	1.21														
68	A20-A19	103	103	1.17														
69	A20-A18	97	97	1.43														
70	A20-A21	85	85	2.27														
71	A19-A18	102	102	2.17														
72	A18-A16	98	98	2.36														
73	A16-A15	86	86	2.32														
74	A15-A13	101	101	2.02														
75	A13-A12	90	90	4.02														

By Consultants Pvt Ltd

Quantities of Work Water Collection System

Sr. No.	From-To	Length of Sewer Line	Sewer Pipe Line 200 mm Dia		Sewer Pipe Line 250 mm Dia		Sewer Pipe Line 300 mm Dia		Sewer Pipe Line 350 mm Dia		Sewer Pipe Line 400 mm Dia		Sewer Pipe Line 450 mm Dia		Sewer Pipe Line 500 mm Dia		Sewer Pipe Line 600 mm Dia	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
	1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	20	21
76	A-76-77	22	22	4.80														
77	A2-77	56	56	4.22														
78	B2A-B1A1	139	139	1.5														
79	A2A1-A2A1	73			73	3.07												
80	A2A-A2	200			200	3.06												
81	B14-B13	69			69	4.35												
82	B1A-B1	138					138	4.40										
83	C2-C1	16	16	1.15														
84	B1A-B1	15	15	1.12														
85	A1A-A2	35					35	4.06										
86	B15-B12	139	139	1.59														
87	B3-B2	75	75	1.28														
88	B12-B14	35					35	4.35										
89	D2-C2	75	75	1.28														
90	C2-C3	70	70	1.24														
91	B2A-B3	150	150	1.67														
92	D1-C1	54	54	2.02														
93	B-C1	185							139	4.29								
94	B2A-B2A	67							49	4.26								
95	B3-B1A1	17											5	4.45				
		2600	1734	1.97	345	3.01	696	3.49	487	4.28	9		19	4.45	9		0	
96	B2A-B2A1	47	47	1.30														
97	B2-B2A1	71	71	1.56														
98	B1A1-B2A1	70	70	1.33														
99	B2A1-B2A2	15	15	1.74														
100	B2A2-	35	35	1.66														
		238	238	1.59														
	SECTION B2-																	
101	B2A1-B2B2	91	91	1.35														
102	B22-B27	62	62	1.62														
103	B28- B29	93	93	1.40														
104	B27- B26	79	79	1.28														
105	B25- B26	102	102	1.35														
106	B26-B25	5	5	1.72														
107	B32- B34	42	42	1.28														
108	B35-B33	51	51	1.46														
109	B35- B32	95	95	1.41														
110	B38- B36	3	3	1.82														
111	B35- B33	43	43	1.40														
112	B31- B30	46	46	1.84														
113	B29- B28	93	93	1.50														
114	B30- B9	94	94	1.91														
115	B9- B10	56	56	2.18														

Sr. No.	Line No.	Design Inlet Sewer Time	Sewer Pipe Line 200 mm (a)		Sewer Pipe Line 250 mm (b)		Sewer Pipe Line 300 mm (c)		Sewer Pipe Line 350 mm (d)		Sewer Pipe Line 400 mm (e)		Sewer Pipe Line 450 mm (f)		Sewer Pipe Line 500 mm (g)		Sewer Pipe Line 600 mm (h)	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
			M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
110	C1-C2	34	34	1.41														
112	C3-F15	2	2	1.00														
113	F15-C2	39	37	2.58														
114	F32-B10	87	87	2.22														
120	B10-B11	65	65	2.12														
121	B12-B11	68	68	1.78														
122	B11-C21	31	31	1.21														
123	C1-C23	98	108	1.65														
124	C24-C21	8	8	1.22														
125	C21-C22	66	28	1.11														
126	C23-C22	39	39	4.05														
127	C26-F32	100	100	1.22														
128	C25-C23	39	39	1.28														
129	C21-C24	98	98	1.47														
130	C22-C27	78			78	4.31												
131	C26-C25	94			94	4.5												
132	C25-C26	92			92	1.39												
133	C27-C28	87	87	1.06														
134	C28-C29	62			62	4.56												
135	C29-C31	126			126	4.60												
136	C47-D7	93			93	4.75												
137	C27-C28	14			14	4.82												
138	F30-C48	27	27	1.20														
139	C49-C30	60	60	1.33														
140	C30-C31	55	55	1.62														
141	C32-C31	43	43	1.29														
142	C31-C51	98	98	1.50														
143	47-A50	55	55	1.38														
144	411-B7	42	42	1.46														
145	B7-B8234	87	87	1.04														
146	C34-C30	37	37	2.40														
147	C14-C36	154	154	1.06														
148	C36-C35	75	75	1.89														
149	C32-C35	15	15	1.33														
150	C35-C36	69	69	2.11														
151	C51-C50	58	58	38														
152	C50-C30	99	99	3.13														

SN	Line No	Length of Sewer Line	Sewer Pipe Line 200 mm Dia		Sewer Pipe Line 250 mm Dia		Sewer Pipe Line 315 mm Dia		Sewer Pipe Line 355 mm Dia		Sewer Pipe Line 400 mm Dia		Sewer Pipe Line 450 mm Dia		Sewer Pipe Line 500 mm Dia		Sewer Pipe Line 600 mm Dia		Sewer Pipe Line 700 mm Dia	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
146	[illegible]	147	147	3.42																
147	[illegible]	[illegible]																		
148	[illegible]	98					98	3.81												
149	[illegible]	41	41	1.29																
150	[illegible]	72					72	3.85												
151	[illegible]	6	6	1.25																
152	[illegible]	40									40	4.80								
153	[illegible]	[illegible]																		
154	[illegible]	94	94	1.27																
155	[illegible]	125	125	1.50																
156	[illegible]	138	138	1.87																
157	[illegible]	40	40	2.0																
158	[illegible]	62	62	1.37																
159	[illegible]	45	45	2.15																
160	[illegible]	29	29	2.19																
161	[illegible]	[illegible]																		
162	[illegible]	147	147	1.61																
163	[illegible]	94	94	1.53																
164	[illegible]	[illegible]																		
165	[illegible]	79	79	1.27																
166	[illegible]	208	208	1.40																
167	[illegible]	[illegible]																		
168	[illegible]	55	55	1.09																
169	[illegible]	75	75	1.76																
170	[illegible]	91	91	2.09																
171	[illegible]	[illegible]																		
172	[illegible]	55	55	2.07																
173	[illegible]	94	94	2.12																
174	[illegible]	78	78	2.16																
175	[illegible]	97	97	[illegible]																
176	[illegible]	98	98	2.31																
177	[illegible]	39	39	1.24																
178	[illegible]	197			197	2.84														
179	[illegible]	[illegible]																		
180	[illegible]	96	96	1.25																
181	[illegible]	59	59	1.61																
182	[illegible]	[illegible]																		
183	[illegible]	35			35	3.30														
184	[illegible]	159	159	1.25																
185	[illegible]	97					97	3.42												
186	[illegible]	[illegible]																		
187	[illegible]	19	19	1.22																
188	[illegible]	19	19	1.27																
189	[illegible]	98	98	1.49																
190	[illegible]	55	55	1.80																
191	[illegible]	69	69	2.09																

Sr. No.	Line No.	Length of Sewer Line	Sewer Pipe Line 200 mm (M)		Sewer Pipe Line 250 mm (M)		Sewer Pipe Line 300 mm (M)		Sewer Pipe Line 375 mm (M)		Sewer Pipe Line 400 mm (M)		Sewer Pipe Line 450 mm (M)		Sewer Pipe Line 500 mm (M)		Sewer Pipe Line 700 mm (M)	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
	1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	20	21
190	P24-P2	176	176	2.85														
191	P2-P3	54					54	1.07										
192	P19-P3	77	147	1.68														
193	P3-P4	6					6	3.20										
194	P4-P5	10	20	1.87														
195	P5-P6	10					10	3.20										
196	P27-P20	81	81	1.49														
197	P20-P5	12	9	1.45														
198	P5-P6	49					49	3.13										
199	P26-P6	43	43	1.26														
200	P6-P25	98	98	1.35														
201	P25-P5	92	92	1.56														
202	P5-P7	122					122	2.86										
203	P28-P7	75	75	1.13														
204	P27-P2	28	28	1.34														
205	P7-P8	46					46	2.69										
206	P21-P8	0					0	0.00										
207	P8-P27	43					43	2.77										
208	P34-P30	49	49	1.29														
209	P30-P28	79	79	1.46														
210	P28-P27	174	141	1.74														
211	P27-P22	36					36	3.21										
212	P22-P26	83					60	3.40										
213	P26-P24	40	40	1.28														
214	P24-P34	92	92	1.51														
215	P22-P21	153					153	2.53										
216	P31-P32-P33	69							69	5.00								
217	P34-P35	49							49	1.25								
218	P35-P36	97							97	5.00								
219	P37-P38-P39	140	140	1.45														
220	P39-P22	91	91	1.91														
221	P36-P38	8	8	1.31														
222	P35-P2	48	48	1.52														

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Sr. No.	Line No.	Length of Sewer Line	Sewer Pipe Line 200 mm Id		Sewer Pipe Line 250 mm Id		Sewer Pipe Line 300 mm Id		Sewer Pipe Line 350 mm Id		Sewer Pipe Line 400 mm Id		Sewer Pipe Line 450 mm Id		Sewer Pipe Line 500 mm Id		Sewer Pipe Line 600 mm Id	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
223	C3-C2	214		2.08														
224	C4-C3	89	89	1.91														
225	C5-C4	91	91	2.08														
226	C6-C5	82	82	2.00														
227	C7-C6	97	97	2.05														
228	S2-C1	28	28	2.41														
229	S2-D26	46							46	1.91								
230	D27-D26	219							219	2.11								
231	D28-D27	103							103	2.01								
232	D29-D28	92	92	1.15							92	1.92						
233	D30-D29	93																
234	D31-D30	70	70	1.27					70	2.01								
235	D32-D31	76																
236	D33-D32	55	55	1.10							93	1.82						
237	MH03-D33	65																
238	D35-MH03	92	92	1.15														
239	D36-D35	93	93	1.40														
240	D37-D36	103	103	1.22														
241	D38-D37	93	93	1.38														
242	D39-D38	174	174	1.96														
243	D40-D39	93	93	2.14														
244	D41-D40	91	91	1.22														
245	D42-D41	91	84	1.19														
246	D43-D42	93	93	2.26														
247	D44-D43	89	89	2.33														
248	D45-D44	91	91	2.33														
249	D46-D45	44	44	2.74														
250	D47-D46	97	97	3.05														
251	D48-D47	76	76	1.28														
252	MH01-D48	16	16	2.12														
253	D49-D26	93											93	1.91				
254	MH02-D49	17											17	4.25				
255	D50-D49	81											81	1.92				
256	S1-D1	93																
257	MH04-S1																	
258	S1-C1	26	26	0.96														
259	C1-C2	13	0	0.94														

Sr No	Line No.	Length of Sewer Line	Sewer Pipe Line 200 mm Dia		Sewer Pipe Line 250 mm Dia		Sewer Pipe Line 300 mm Dia		Sewer Pipe Line 350 mm Dia		Sewer Pipe Line 400 mm Dia		Sewer Pipe Line 450 mm Dia		Sewer Pipe Line 500 mm Dia		Sewer Pipe Line 600 mm Dia	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
258	C14-C10	55	55	1.13														
259	C12-C17	81	81	1.42														
260	C13-C12	103			103	1.12												
261	C15-C9	94			94	1.2												
262	C7-C6	110	110	1.56														
263	C9-C8	49			49	1.95												
264	C5-C4	65					51	2.28										
265	C16-B33	92	92	1.40														
266	B29-B37	97	97	1.65														
267	C1-C5	92	110	2.02														
268	C2-C4	17											17	2.40				
269	C20-C4	85	85	1.45														
270	C4-C3	20											20	3.47				
271	C11-B40	71	141	1.05														
272	B42 B41	139	145	1.61														
273	B40-C1	18	18	1.98														
274	C3-C2	30											30	2.37				
275	C13-C16	37	37	1.39														
276	C18-C15	36	36	1.27														
277	C16-C18	49	49	1.64														
278	C19-C17	42	42	1.23														
279	C17-C20	35	35	1.81														
280	C2-C1	45											45	3.79				
281	C1-C26	67											67	3.06				
282	B36-B35	127											27	4.06				
283	B35-B31	25	25	1.34														
284	B29 B28	45	45	1.54														
285	B21-B20	48	48	1.61														
286	B23-B22	50	50	1.82														
287	B26-B29	83	83	1.16														
288	B27-B19	47	47	1.85														
289	B31 B19	114	114	1.56														
290	B18-B16	39	39	2.04														
291	B32-B18	27	27	1.32														
292	B33-B34	32	132	1.80														
293	B38-B17	42	42	1.59														
294	B24-B15	146	146	1.91														
295	B17-B16	45	45	2.21														
296	B22-B15	64	64	1.42														
297	B35-B16	174	174	1.89														
298	B15-B13	30					16	2.42										

No Consumers Per Unit

Sheet No-19

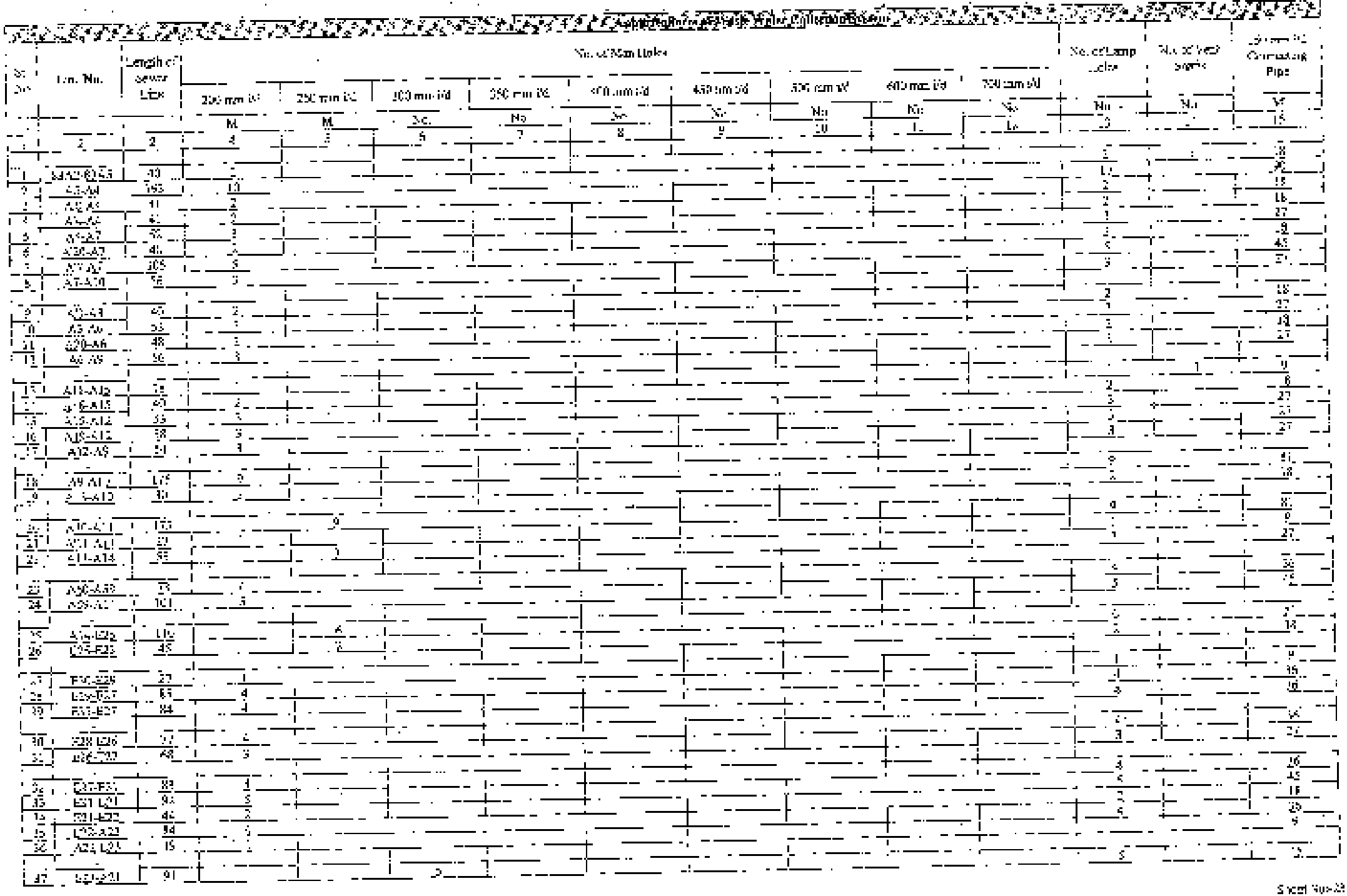
Sr. No	Dwg. No	Length of Sewer Line	Sewer Pipe Line 300 mm Ø		Sewer Pipe Line 250 mm Ø		Sewer Pipe Line 300 mm Ø		Sewer Pipe Line 350 mm Ø		Sewer Pipe Line 400 mm Ø		Sewer Pipe Line 450 mm Ø		Sewer Pipe Line 300 mm Ø		Sewer Pipe Line 250 mm Ø	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	20	21
299	B15-B16	46									46	4.35						
300	B14-B7	50									50	4.45						
301	B12-B3	46	46	1.46														
302	B7-B6	31									31	3.97						
303	B1-B6	31	49	1.38														
304	B6-B5	49									35	4.57						
305	B10-B9	47	47	1.30														
306	B4-B4	49									49	3.97						
307	B5-B4	47	47	1.30														
308	B7-B1	26									21	4.61						
309	B8-B3	10	0	1.32														
310	B9 B2	134													134	4.41		
311	B3-B1	28													28	4.95		
312	B1B1 B1A1	130													130	3.72		
313	A1-A2	30													30	4.43		
314	A2-A3	49	47	1.71														
315	A3-A4	99	97	1.62														
316	A4-A5	37	37	2.02														
317	A5-A6	20													20	7.40		
																	31	3.20
318	B1B2 B1A2	91															40	3.34
	B1B2 B1A2	91															91	3.29
		14726	15089	1.64	980	3.81	421	3.09	872	4.80	280	4.64			808	4.07		
319	A1A6-A1A7	75	75	1.83														
320	A1A7-A1A7	21	21	1.66														
321	A1-A1	32	32	1.66														
322	A10 A10	60	60	1.36														
323	A10-A11	21	21	1.27														
324	A11-A11	139	139	2.66														
325	A11-F7	17	17	2.85														
326	B5-B5	122	122	1.85														
327	B5-A43	35	35	3.91														
328	A48 A49	35	35	1.18														
329	A49-A50	182	182	1.40														
330	A50-A12	130	130	1.84														
331	A12-A38	13	13	2.61														
332	B2 A39	104	104	1.43														
333	A15-A41	47	45	2.5														
334	A08 A10	27	27	1.22														

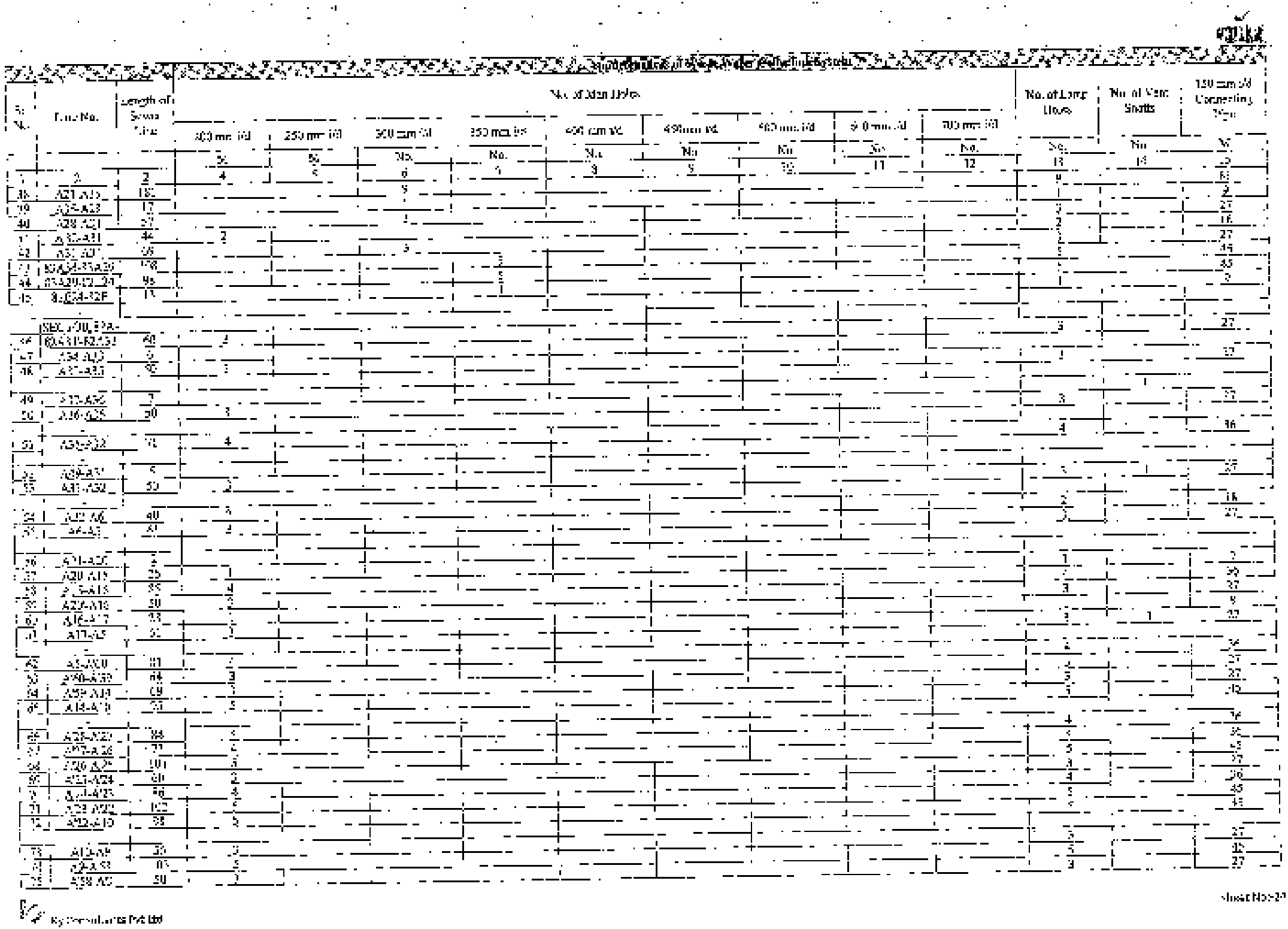
Sheet No-01

CP No	Line No	Sewer Line	Sewer Pipe Line 200 mm Ø		Sewer Pipe Line 250 mm Ø		Sewer Pipe Line 300 mm Ø		Sewer Pipe Line 350 mm Ø		Sewer Pipe Line 400 mm Ø		Sewer Pipe Line 450 mm Ø		Sewer Pipe Line 500 mm Ø		Sewer Pipe Line 600 mm Ø	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
			M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
335																		
336																		
337																		
338																		
339																		
340																		
341																		
342																		
343																		
344																		
345																		
346																		
347																		
348																		
349																		
350																		
351																		
352																		
353																		
354																		
355																		
356																		
357					40	2.34												
358					101	2.67												
359							65	3.06										
360																		
361																		
362							35	2.39										
363																		
364																		
365																		
366																		
367					48	1.40												
368					55	1.57												
369					46	2.08												
370																		
371							29	2.67										
372							159	3.09										
373																		
374							71	3.60										

Sl No	Line No.	Sewer Line	Sewer Pipe Line 200 mm (d)		Sewer Pipe Line 250 mm (d)		Sewer Pipe Line 300 mm (d)		Sewer Pipe Line 350 mm (d)		Sewer Pipe Line 400 mm (d)		Sewer Pipe Line 450 mm (d)		Sewer Pipe Line 500 mm (d)		Sewer Pipe Line 600 mm (d)	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
			M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
375	A11-A12	7	7	1.25														
376	A12-A13	52	52	1.31														
377	A13-A14	56	56	1.38														
378	A1-A1	142	142	1.97														
379	A1-A2	57	57	2.10														
380	A2-A3	20	20	1.26														
381	D1-D2	52	52	1.31														
382	D2-D19	62	62	2.31														
383	D19-D18	116	116	3.04														
384	D18-D13	129			129	3.57												
385	D2-D14	145	145	1.32														
386	D6-D15	92	92	2.5														
387	D15-D17	53					53	3.62										
388	D17-D16	132	132	1.66														
389	D16-D12	70					70	4.28										
390	B1-B2	37	37	1.97														
391	B2-B3	54	54	1.45														
392	B3-B4	62	62	1.35														
393	B4-B5	86	86	1.02														
394	B5-B6	205	205	2.02														
395	B6-B6P2	31					31	4.46										
396	D12-B21	45	35	4.52														
397	B21-B20	8					8	4.31										
398	D19-B17	53					53	4.34										
399	B17-B17	14					14	4.32										
400	B17-B16	55					55	4.37										
401	B16-B15	39					39	4.49										
402	B15-B6P1	16					16	4.40										
403	B6P1-B6P2	213					213	4.50										
404	C21-C10	79	79	1.25														
405	B6P2-B6P3	67													67	2.22		
406	D19-D20	315	315	1.29														
407	B6P3-B6P4	91	91	2.22														
408	B6P4-B6P5	31															31	3.32
409	B6P5-B6P6	207	147	3.16														
410	B6P6-B6P7	35															35	3.17
		28228	26668		2035		2633		1836		787		52		408		348	

Sheet No.-22



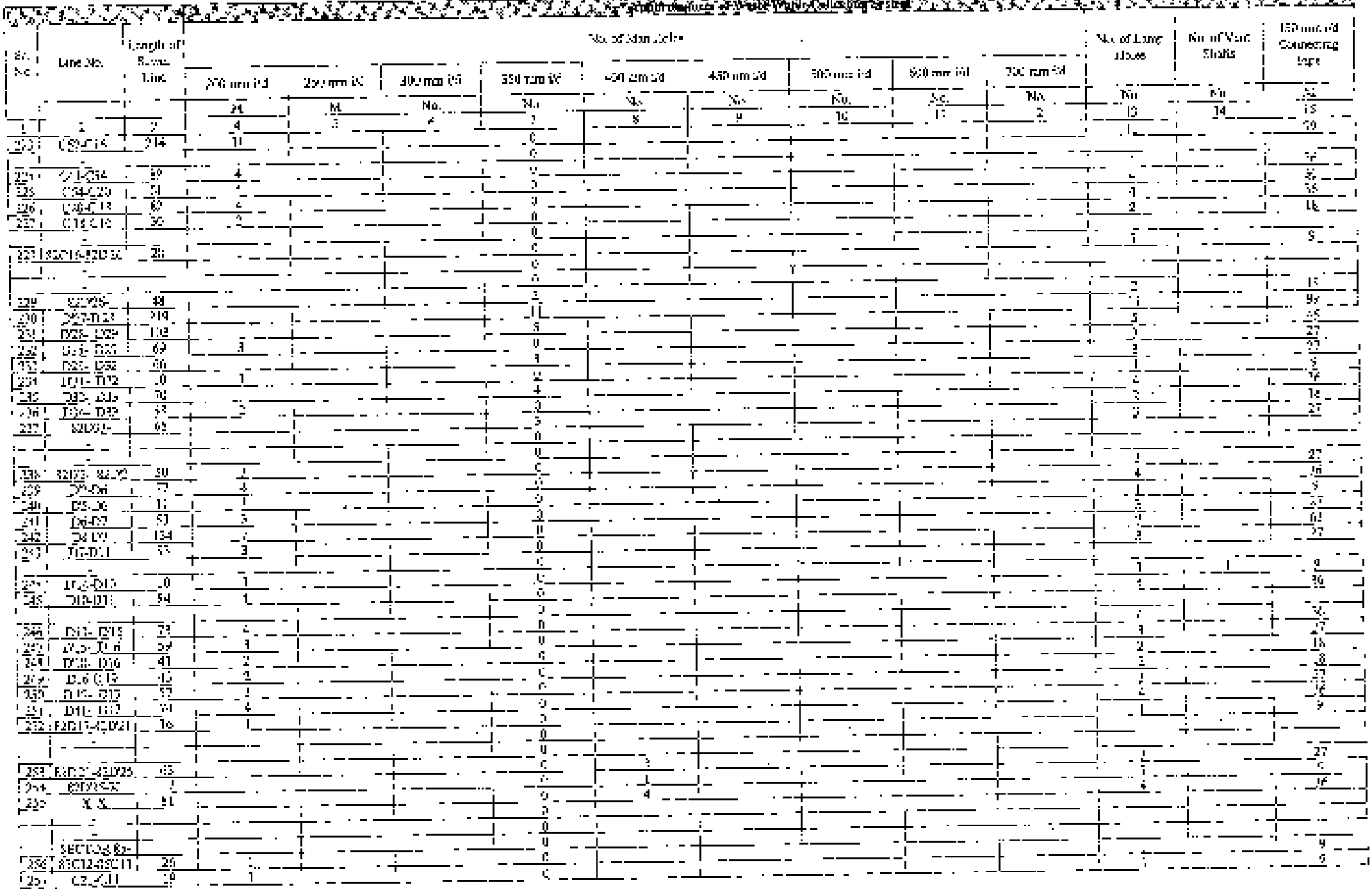


Sr. No.	Line No.	Length of Sewer Line	No. of Man Holes									No. of Drop Shafts	No. of Vent Shafts	150 mm dia Connecting Pipe
			200 mm dia	250 mm dia	300 mm dia	350 mm dia	400 mm dia	450mm dia	300 mm dia	600 mm dia	700 mm dia			
			M	M	No.	Nos.	No.	No.	No.	No.	Nos.	Nos.	Nos.	M
	1	2	4	5	6	7	8	9	10	11	12	13	14	15
76	A9-A2	24	1									1		3
77	A2-A1	35	1									2		23
78	A3a-A3-A2a	150	7									7	1	50
79	A2A1-A2B10	75		4										9
80	A2B10-	230		11								11		25
81	B1-B2-B3	60		3								3		21
82	B12-B13	226			7							7		61
83	B2-B11	10	1									1		9
84	B11-B1	70	4									4		35
85	B1- B12	58			3							3		27
86	B13- B14	125	6									6		31
87	B3 - B15	72	3									3		30
88	B16- B	53			3							3		27
89	B4-B14	70	4									4		30
90	B5-B15	70	4									4		30
91	B16-B5	150	5									5		32
92	B13 B14	94	3									1	1	27
93	B14 B19	182				9						9		51
94	B2B10-B2B	19				2						2		14
95	B15-B1P3	15						1				1		7
		3807	340	29	94	33	0	1	0	0	0	105	0	2015
96	B2A6-B2A5	47	2			0						2		13
97	B2A8-B2A6	71	2			0						2		42
98	B2A9-B2A8	80	4			0						4		56
99	B2A5-B2A4	15	1			0						1		9
100	B2A3	35	1			0						2		18
		248	10			0						240	1	27
	B2C10-B2B					0								
101	B2B1-B2B2	65	3			0						3		45
102	B2A- B2B	80	3			0						3		42
103	B2B- B2B	95	5			0						5		48
104	B2B- B2C	40	2			0						2	1	18
105	B2C- B2D	102	5			0						2		48
106	B2D B2C	5				0								3
107	B2B- B2A	85	4			0						4		42
108	B2B-B2A	61	3			0						3		21
109	B2D- B2A	65	4			0						2		45
110	B2A- B2A	5				0								
111	B2A- B2A	45	2			0						2	1	18
112	B2A- B2A	40	2			0						3		16
113	B2A- B2A	90	3			0						5		45
114	B2A- B2A	34	2			0						2		18
115	B2A- B2A	46	2			0						2		27

Sr. No.	Sec. No	Length of Sewer Line	No. of Man Holes									No. of Lamp Holes	No. of Vent Shafts	150 mm Dia Connecting Pipe
			200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	450 mm Dia	500 mm Dia	600 mm Dia	700 mm Dia			
			M	M	No	Sc.	No.	No	No	No.	No.	No	Sc.	Nos
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
116	C2-C3	34	2			0						1		15
117	C5-F15	42	2			0						2		18
118	F15-F21	32	2			0						2		15
119	F21-D19	87	4			0								
120	D19-D1	68	3			0						1		27
121	B12-B11	93	5			0						3	1	45
122	B11-B10	51	3			0						1		21
123	B10-C31	138	8			0						4		12
124	C31-C32	5				0						1		3
125	C32-C33	66	3			0						2		27
126	C33-C34	29	1			0						1		9
127	C34-C42	107	5			0						3		45
128	C42-C43	19	1			0						1		18
129	C43-C44	58	3			0						1		27
130	C44-C45	78		4		0						2		36
131	C45-C46	34		2		0						1		16
132	C46-C47	51		3		0						2		27
133	C47-C48	20	1			0						1		9
134	C48-C49	63		3		0						2		27
135	C49-C50	126		6		0						3		54
136	C50-C51	16		1		0						1		7
137	C51-C52	34		2		0						1		18
138	C52-C53	87	4			0						2		36
139	C53-C54	60	3			0						2		27
140	C54-C55	32	2			0						1		18
141	C55-C56	45	2			0						2		27
142	C56-C57	24	1			0						1		9
143	C57-C58	87	4			0						2		36
144	C58-C59	27	1			0						1		9
145	C59-C60	107	4			0						3		36
146	C60-C61	134	6			0						4		54
147	C61-C62	73	3			0						2		27
148	C62-C63	120	5			0						3		45
149	C63-C64	87	4			0						2		36
150	C64-C65	93	5			0						3		45

Sr No	Line No	Length of Sewer Line	No. of Man Holes									No. of Drop Shafts	No. of Vent Shafts	150 mm Dia Connecting Pipe
			200 mm Dia	225 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	450mm Dia	500 mm Dia	600 mm Dia	700 mm Dia			
			No	No	No	No	No	No	No.	No.	No.	No	No	No
	2	3	4	5	6	7	8	9	10	11	12	13	14	15
157	B3C39-B3C41	147	7			0						7		67
	-					0								
158	B3C48-B3C5	56			2	0						2		18
159	B3C5-B3C6	47	2			0						3		15
160	B3C6-B3C7	92			4	0								
161	B3C7-B3C8	6				0						6		11
162	B3F50-B3D30	50				0						2		16
	-					0								
163	B3B17-B3B16	97	3			0						4		18
164	B3B8-B3B7	323	5			0						6		34
165	B3B5-B3B7	198	9			0						6		31
166	B3B5-B3B6	46	2			0						3		8
167	B3B1-B3B6	69	3			0						3		27
168	B3B6-B3B3	45	2			0						3		8
169	B3B3-B3B4	19	1			0						1		9
	-					0								
170	B3B7-B3B4	207	5			0						5		12
171	B3B4-B3B1	54	3			0						4	1	37
						0								
172	B3B4-B3B5	29	1			0						1		6
173	B3B1-B3B5	208	10			0						10		96
	-					0								
174	B3D1-B3D2	51	2			0						3		27
175	B3B2-B3B2	46	2			0						3		18
176	B3B1-B3B2	94	3			0						3		27
	-					0								
177	B3B5-B3B7	51	2			0						3		27
178	B3B6-B3B7	51	2			0						3		27
179	B3B6-B3B5	19	1			0						1		9
180	B3B8-B3B6	67	3			0						3		27
181	B3B8-B3B9	64	2			0						2		27
182	B3B9-B3B10	99	3			0						3		35
183	B3B9-B3C1	207		10		0						10		90
	-					0								
184	B3B10-B3B11	80	2			0						4		18
185	B3B11-B3B7	59	3			0						5		27
						0								
186	B3B7-B3C1	55		1		0						3		33
187	B3C1-B3C2	159	8			0						8		74
188	B3C2-B3C3	57			3	0						3		33
	-					0								
189	B3B17-B3B18	16	1			0						1		2
190	B3B18-B3B19	19	1			0								
191	B3B19-B3B20	93	5			0						5		44
192	B3B20-B3B21	52	3			0						3		27
193	B3B21-B3B22	55	3			0						3		27

| Sr. No. | Line No. | Length of Sewer Line | Sch. of Man Holes | | |



Sheet No. 29

Sr No	Line No.	Length of sewer Line	No of Man Holes									No of Lamp Holes	No of Vent Shafts	150 mm Dia Connecting Pipe
			200 mm Dia	250 mm Dia	300 mm Dia	375 mm Dia	400 mm Dia	450 mm Dia	375 mm Dia	400 mm Dia	700 mm Dia			
			M	M	No.	No.	No.	No.	No.	No.	No.	No.	No.	M
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
258	C14-C15	65	1			0						3		27
259	C17-C16	91	1			0						3	1	27
260	C14-C16	108		5		0						3		45
261	C10-C9	98		1		0						3		27
262	C7-C9	110	1			0						3		54
263	C8-C9	72		2		0						2		9
264	C6-C5	65			1	0						1		27
265	B19-B18	91	1			0						3		45
266	B28-B27	20				0						1		9
267	B32-C5	149	2			0						4		63
268	C5-C3	17				0								
269	C20-C4	92	1			0						3		45
270	C4-C2	20				0						1		9
271	B41-B40	141	2			0						3		63
272	B45-B46	193	3			0						5		81
273	C1-C3	24	1			0						1		9
274	C3-C	71				0	2					3		45
275	C12-C11	37	1			0						2		18
276	C16-C16	41	1			0						2		18
277	C16-C15	49	1			0						2		18
278	C19-C5	42	1			0						2		18
279	C15-C3	25	1			0						1		9
280	C2-C1	46				0	2					3		45
281	C1-B26	92				0	2					3		27
282	B35-B15	177				0	2					6		81
283	D25-D21	71	1			0						2		54
284	B27-B21	45	1			0						3		18
285	B21-B23	48	1			0						3		18
286	B24-B23	69	1			0						3		27
287	B23-B22	91	1			0						3		36
288	B22-B19	40	1			0						3		18
289	D21-D19	118	0			0						6		54
290	B19-B18	29	1			0						3		18
291	B21-B16	37	1			0						3		27
292	B21-B18	107	1			0						6		72
293	B15-B17	42	1			0						3		18
294	B24-B17	146	1			0						3		54
295	B17-B15	40	1			0						3		18
296	B24-B15	68	1			0						3		27
297	B25-B15	174	0			0						6		81
298	B15-B13	96			1	0						3	1	18

Sl. No	Line &c.	Length of Sewer Line	No. of Man Holes										No. of Lamp Holes	No. of Vent. Shafts	150 mm Dia Connecting Pipe
			300 mm Dia	350 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	450 mm Dia	500 mm Dia	900 mm Dia	1200 mm Dia				
			M	M	No	No.	No	No.	No.	No	No.		No.	No.	M
	3		4	5	6	7	8	9	10	11	12		13	14	15
															18
29	B15-B14	46													27
30	J14-B7	50													28
31	B12-B7	47	2												27
32	B7-J5	8													18
33	B7-B6	37	2												14
34	B6-B5	35													14
35	B10-B5	37	2												15
36	B5-B4	45													18
37	B4-B4	47	2												9
38	B4-B3	28													9
39	B3-B2	20	1												12
40	B2-B1	154													6
41	B1-B1	33													12
42	B1B1-B2A	181													15
43	[illegible]	27													12
44	A2-A5	49	2												18
45	A5-A4	27	1												9
46	A4-A3	27	1												9
47	A3-A	30													12
48	A-S	34													12
	S1-S2-S3-D/A	15													6435
	-	4730	245	47	46	12	39	9	21	2	3		317	11	
119	A30-A29-A27	22	1										4		9
120	A27-A26-A25	23	1										4		9
121	A7-A6	32	2												18
122	A38-A40	22	2										2	1	18
123	A40-A39	24											6		24
124	A51-A7	139	6												
125	A11-A5	17	1										1		9
126	A5-A6	122	5										6		54
127	A5-A12	30	2										2		18
128	A43-A49	27	1										3		9
129	A49-A50	152	7										6		51
130	A50-A42	150	7												72
131	A42-A45	13	1										1		
132	A2-A55	104	5										5		42
133	A55-A53	43	2										2		18
134	A54-A51	27	1												9

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For Consultants Pvt Ltd

Sr. No.	Line No.	Length of Sewer Line	No. of Man Holes									No. of Lamp Holes	No. of Ventilators	150 mm dia Diameter Pipe
			200 mm dia	250 mm dia	300 mm dia	350 mm dia	400 mm dia	450 mm dia	500 mm dia	600 mm dia	700 mm dia			
			No	No	No	No	No.	No.	No.	No.	No.	No	No	M
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
334	A45-A57	7												
335	A9-A10	57	2									2		8
336	A44-A44	77	2									4		16
337	A37-A45	21	2									2		8
338	C1-B16	20	2									2		8
339	A46-A45	62	2									2		27
340	A43-A44	67	2									1		27
341	[illegible]	317	11									10		59
342	[illegible]													
343	B37-B47	121	6									6		34
344	B27-B15	80	5									5		25
345	B15-B1	67	4									2	1	27
346	B7-B5	140	8									4		25
347	B1-B4	80	3									4		27
348	B6-B8	97	3	1								1		27
349	B4-B14	122	6									6		32
350	B8-B9	96	3									3		27
351	B13-B13	317	6									5		27
352	B29-B31	70	1									1		9
353	B12-B11	47	2									2		8
354	B11-B10	76	2									2		18
355	B3-B2	109	3									5		45
356	B3-B10	169	3									6		72
357	B1-B3	49		2								3		18
358	B2L2-B3B1	163		4								4		42
359	B3F1-B1B12	66			3							1		27
360	[illegible]	33	2									2		18
35	A31-B13	104	6									5	1	54
362	B30-B2B12 B2B12-B1B1	23			1							1	1	9
363	B1-B4	44	2									2		18
364	B4-B5	14	1									1		9
365	B5-B6	20	1									1		9
366	B1-A1	18		2								2		18
367	A1-A2	52		5								5		45
368	D21-D7	84		1								1	1	35
369	D25-D7	71	4									4		36
370	D3-D21	29			1							1		9
371	D21-D22	154			8							8		72
372	D3-D22	71	2									2		18
373	D4-D3	67			2							2		18

Appurtenances of Waste Water Collection System

Sl. No.	Line No.	Length of Sewer Line	No. of Man Holes									No. of Lamp Holes	No. of Vent Shafts	150 mm Dia Connecting Pipe
			200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	450mm Dia	500 mm Dia	600 mm Dia	700 mm Dia			
			M.	M.	No.	No.	No.	No.	No.	No.	No.	No.	No.	M.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	-											0		0
374	A13-A12	3										1		27
375	A13-A12	33	1									1		27
376	A12-A11	34	1									2		63
377	A11-A1	34	2									1		27
378	A1-A2	55	3									2		18
379	A2-A2	30	2									1		27
380	D1-A2	32	2									1	1	27
381	A2-D2	62	3									6		54
382	D2-D19	138	6									6		54
383	D19-D18	129		6										
	-											7		63
384	D2-D18	165	2									2		18
385	D6-D18	42	3											
	-											3		27
386	D18-D17	58			3							7		63
387	D4-84D17	158	7									4		36
388	84D17-83B5	75			4									
	-											2		18
389	83B2-83B3	30	2									3		27
390	B3-B4	34	3									3		27
391	B6-B4	62	3									4	1	36
392	B4-B5	80	4									10		90
393	B5-83B5	206	10											
	-											4		36
394	83B5-83B22	84			4							2		18
395	B22-B21	35	2									1		9
396	B21-B19	18			1							3		27
397	B19-B27	33			2									
398	B27-B17	14												
399	B17-B14	53			1							2	1	18
400	B14-B13	39			2							1		9
401	83B13-83B12	16			1									
	-													
402	83D12-83C10	213			11							11		99
403	C11-C10	76	4									4		36
404	83C10-83C7	55						2				3		27
	-													
405	C13-C6	215	11									11		99
406	83C6-83C7	73	4									4		36
	-													
407	83C7-83C8	31								0	2	2		18
408	83C12-83C8	147	7									7		63
	-													
409	83C8-STP1	15								0	1	1		9
		25226	1042	118	128	66	39	4	28	11	8	1383	38	12461

For Ky Consultants Pvt Ltd

(Director)

DESIGN STATEMENT OF RECYCLING

Revised Layout of Treated Waste Water

Sr No.	Name of Water Pipe line	Length	Outer Diameter of Water Pipe Line	Net Water Demand in Area from Recycled Water Supply	Design of Pipe Line								Length of pipe					No of Sluice Valves				
					No Water Demand			Total Water Demand	Used Loss per M	Total Head Loss	Head Loss Progressive	Terminal Head	110 mm OD	160 mm OD	210 mm OD	280 mm OD	315 mm OD	110 mm OD	160 mm OD	210 mm OD	280 mm OD	315 mm OD
					Self	Previous	Total	20 LPHD														
		m	mm	CMD	MLD	MLD	MLD	LPM	MM	MLD	MLD	MLD	m	m	m	m	m	Nos.	Nos.	Nos.	Nos.	Nos.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	STP-BS18	20	250	0	0.00	666.88	666.88	1428.91	0.0018	0.036	0.036	24.96	0	0	0	20	0	0	0	1	0	0
	-																	0	0	0	0	0
2	BS18-C12	157	160	44854	46.64	0.00	46.64	97.56	0.0011	0.168	0.204	24.80	157	0	0	0	0	1	0	0	0	0
3	C8-C9	21	250	1996	2.00	627.04	629.04	1731.79	0.0016	0.048	0.051	24.92	0	0	0	21	0	0	0	0	1	0
	-																	0	0	0	0	0
4	C9-C6	71	160	1488	1.82	90.21	92.03	96.87	0.0005	0.036	0.122	24.88	71	0	0	0	0	1	0	0	0	0
5	C6-C3	225	160	10211	30.21	0.00	30.21	62.04	0.0005	0.107	0.229	24.77	225	0	0	0	0	1	0	0	0	0
	-																	0	0	0	0	0
6	C3-C10	67	200	2484	2.85	622.96	904.84	1560.70	0.0043	0.280	0.351	24.61	0	0	67	0	0	0	0	1	0	0
7	C10-C11	36	160	4728	4.73	0.00	4.73	9.85	0.0010	0.001	0.352	24.43	36	0	0	0	0	1	0	0	0	0
8	C10-BS2	214	200	12134	17.11	580.00	597.10	1245.11	0.0041	0.879	1.231	23.73	0	0	214	0	0	0	0	1	0	0
	-																	0	0	0	0	0
	-																	0	0	0	0	0
9	BS2-BS3	15	200	950	0.72	223.57	224.29	467.42	0.0007	0.010	1.240	23.73	0	0	15	0	0	0	0	1	0	0
10	BS3-BS4	39	160	2595	2.99	206.54	209.53	436.77	0.0027	0.105	1.334	23.63	0	39	0	0	0	0	1	0	0	0
11	BS4-BS5	55	160	3592	2.59	217.05	220.55	459.91	0.0026	0.144	1.478	23.50	0	55	0	0	0	0	1	0	0	0
12	BS5-BS6	14	160	915	0.27	220.02	220.29	459.33	0.0026	0.036	1.514	23.47	0	14	0	0	0	0	1	0	0	0
13	BS6-BS7	59	160	3856	3.84	212.67	216.51	451.94	0.0026	0.153	1.670	23.33	0	59	0	0	0	0	1	0	0	0
14	BS7-BS8	18	160	2368	2.09	210.29	212.37	443.07	0.0025	0.044	1.714	23.28	0	18	0	0	0	0	1	0	0	0
15	BS8-BS9	46	160	481	0.44	206.8	210.29	438.10	0.0021	0.096	1.806	23.26	0	46	0	0	0	0	1	0	0	0
16	BS9-BS5	84	160	2787	2.09	206.83	208.87	437.10	0.0024	0.201	2.001	23.00	0	84	0	0	0	0	1	0	0	0
	-																	0	0	0	0	0
17	BS5-BS5	306	160	13751	13.73	12.98	26.71	55.65	0.0001	0.078	2.079	22.92	306	0	0	0	0	1	0	0	0	0
18	BS-B4	46	160	2678	2.65	10.31	12.96	27.05	0.0001	0.009	2.088	22.91	46	0	0	0	0	1	0	0	0	0
19	B4-B4	71	160	6953	6.77	0.00	6.75	14.07	0.0000	0.002	2.090	22.91	71	0	0	0	0	1	0	0	0	0
20	B4-B4	53	160	1922	1.83	1.67	3.50	7.30	0.0000	0.000	2.090	22.91	53	0	0	0	0	1	0	0	0	0
21	B3-B3	38	160	1650	1.62	0.00	1.62	3.40	0.0000	0.000	2.090	22.91	38	0	0	0	0	1	0	0	0	0
	-																	0	0	0	0	0
	SECTOR 54																	0	0	0	0	0
22	BS#5-B4017	55	160	3852	2.47	177.63	180.11	375.23	0.0018	0.132	2.112	22.80	0	71	0	0	0	0	1	0	0	0
23	B4017-B4	337	160	13778	13.78	0.00	13.78	28.70	0.0001	0.033	2.145	22.83	337	0	0	0	0	0	0	0	0	0
24	B17-B15	53	160	2592	2.59	161.27	163.86	341.37	0.0015	0.080	2.225	22.79	0	53	0	0	0	0	1	0	0	0
	-																	0	0	0	0	0
25	B28-B9	48	160	3055	3.05	3.00	3.05	6.36	0.0000	0.000	2.231	22.79	48	0	0	0	0	0	0	0	0	0
26	B28-B5	140	160	13507	13.51	0.00	13.51	28.14	0.0001	0.015	2.228	22.77	140	0	0	0	0	1	0	0	0	0
																		0	0	0	0	0

Sr.No.	Name of Water Pipe line	Length	Dia of Water Pipe line	Net Water Demand to meet from Recycled Water Supply	Design of Pipe Line: Net Water Demand								Length of pipe					Nos. Sluice Valves				
					Self	Previous	Total	Total Water Demand	Head Loss per M	Total Head Loss	Grad Line Progressive	Terminal Head	110 mm old	160 mm old	210 mm old	360 mm old	510 mm old	110 mm old	160 mm old	210 mm old	260mm old	310 mm old
		M	Mm	Litres	KLD	KLD	KLD	KLD	Mtr	Mtr	Mtr	Mtr	M	M	M	M	M	Nos.	Nos.	Nos.	Nos.	Nos.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
27	D13-D19	113	200	8139	8.14	82.22	90.36	108.22	0.0039	0.447	2.660	22.35	113	0	0	0	0	1	0	0	0	0
28	D19-D20	36	110	6476	6.47	0.00	6.48	12.96	0.0040	0.002	2.651	22.35	36	0	0	0	0	1	0	0	0	0
29	D20-D8	172	200	42014	42.01	36.78	78.80	184.16	0.0026	0.229	2.879	22.03	172	0	0	0	0	1	0	0	0	0
30	D1-A2	67	200	2984	2.98	64.09	66.78	75.69	0.0017	0.042	3.021	21.98	67	0	0	0	0	1	0	0	0	0
31	A2-D1	39	110	1939	1.94	0.00	1.94	1.94	0.0000	0.000	3.021	21.98	39	0	0	0	0	1	0	0	0	0
32	A2-A3	37	200	3141	3.14	0.00	3.14	6.94	0.0000	0.000	3.021	21.98	37	0	0	0	0	1	0	0	0	0
33	A1-A4	93	200	3617	3.84	28.75	32.61	61.68	0.0005	0.024	3.045	21.95	93	0	0	0	0	1	0	0	0	0
34	A4-A13	141	110	8766	8.80	16.97	25.78	87.46	0.0001	0.020	3.065	21.93	141	0	0	0	0	1	0	0	0	0
35	A13-D12	59	200	11909	12.00	4.97	16.97	55.39	0.0002	0.009	3.104	21.93	59	0	0	0	0	1	0	0	0	0
36	A13-A15	53	110	3338	3.34	0.00	3.37	3.65	0.0010	0.001	3.104	21.93	53	0	0	0	0	1	0	0	0	0
37	A15-A16	4	110	1681	1.68	0.00	1.68	2.40	0.0002	0.000	3.104	21.93	4	0	0	0	0	1	0	0	0	0
																		0	0	0	0	0
38	D15-D22	46	110	1911	1.91	49.49	51.00	106.25	0.0011	0.048	2.272	22.73	46	0	0	0	0	1	0	0	0	0
39	D22-D5	20	200	3689	3.69	0.00	3.69	7.37	0.0000	0.000	2.271	22.73	20	0	0	0	0	1	0	0	0	0
40	D20-D21	160	200	11.38	26.01	31.78	43.89	95.54	0.0010	0.163	2.435	22.56	160	0	0	0	0	1	0	0	0	0
41	D21-D7	29	110	755	0.75	30.97	31.72	65.09	0.0005	0.015	2.450	22.55	29	0	0	0	0	1	0	0	0	0
42	D6-A11	87	200	6127	6.12	0.00	6.13	12.77	0.0005	0.002	2.452	22.55	87	0	0	0	0	1	0	0	0	0
43	D7-D23	93	110	2540	2.54	22.30	24.84	51.75	0.0003	0.029	2.479	22.52	93	0	0	0	0	1	0	0	0	0
44	D23-A7	95	200	8021	8.02	16.08	22.30	46.46	0.0003	0.026	2.505	22.50	95	0	0	0	0	1	0	0	0	0
45	A7-B1	47	110	2705	2.70	12.05	14.08	29.35	0.0001	0.005	2.510	22.49	47	0	0	0	0	1	0	0	0	0
46	B1-B2	20	110	2445	2.44	9.61	12.05	25.11	0.0001	0.002	2.512	22.49	20	0	0	0	0	1	0	0	0	0
47	B2-B3	46	110	6852	6.85	2.09	8.49	14.36	0.0010	0.001	2.513	22.49	46	0	0	0	0	1	0	0	0	0
48	B4B2-B4B3	33	110	2717	2.72	0.00	2.72	5.66	0.0002	0.000	2.512	22.49	33	0	0	0	0	1	0	0	0	0
																		0	0	0	0	0
																		0	0	0	0	0
49	B12-B13	34	200	1846	1.84	359.00	360.84	751.71	0.0019	0.039	1.278	21.72	0	0	34	0	0	0	0	1	0	0
																		0	0	0	0	0
50	B13-A21	169	110	17391	17.39	0.00	17.39	37.27	0.0002	0.039	1.317	21.69	169	0	0	0	0	1	0	0	0	0
																		0	0	0	0	0
51	D12-D1	67	200	3922	1.92	339.19	341.11	710.63	0.0009	0.064	1.421	21.85	0	67	0	0	0	0	1	0	0	0
																		0	0	0	0	0
52	D1-A21	177	200	21051	20.99	144.01	165.34	350.72	0.0016	0.304	2.175	21.82	0	117	0	0	0	0	1	0	0	0
																		0	0	0	0	0
53	D1-D9	102	200	17.07	17.14	153.71	170.84	355.03	0.0016	0.266	1.938	21.96	0	102	0	0	0	0	1	0	0	0
54	B5-B10	58	150	6000	6.07	147.64	153.71	320.92	0.0013	0.089	2.005	21.80	0	58	0	0	0	0	1	0	0	0
																		0	0	0	0	0
55	B20-B2	169	200	20037	20.04	8.44	28.77	59.84	0.0004	0.051	2.056	21.92	169	0	0	0	0	1	0	0	0	0
56	D2-D3	109	200	8106	8.11	0.00	8.13	17.27	0.0010	0.008	2.041	21.92	109	0	0	0	0	1	0	0	0	0
																		0	0	0	0	0

Sheet No. 2

by Consultants Ltd.

Sr.No.	Name of Water Pipe line	Length	Owner Division of Water Pipe line	% Water Demand to meet from Recycled Water Supply	Design of Pipe Line						Length of pipe						No. of Sluice Valves				
					Net Water Demand			Total Water Demand	Sheet Loss per KM	Total Head Loss	Head Loss Progressive	Normal Head	110 mm dia	160 mm dia	210 mm dia	260 mm dia	310 mm dia	110 mm dia	160 mm dia	210 mm dia	260 mm dia	310 mm dia
					Self	Previous	Total	20 HRS														
		m	Km	KLDs	KLD	KLD	KLD	LPM	M/Km	Mtr	Mtr	Mtr	m	m	m	m	m	No.	No.	No.	No.	No.
1	-	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	-																	0	0	0	0	0
89	A1-A51	109	109	78924	9.06	3.91	23.89	48.27	0.0068	0.040	2.935	22.05	109	0	0	0	0	1	0	0	0	0
90	A51-A40	33	101	801	0.89	3.00	3.90	8.12	0.0004	0.000	2.935	22.05	33	0	0	0	0	1	0	0	0	0
91	A3-A10	28	100	2001	2.00	0.00	2.00	6.25	0.0004	0.000	2.935	22.04	28	0	0	0	0	1	0	0	0	0
	-																	0	0	0	0	0
	-	6925		665176.47									5479	1119	320	50	0	69	16	5	2	0
92	A102-A	55	500	6000	8.41	1473.49	1481.89	3887.27	0.0031	0.165	0.468	24.83	0	0	0	0	55	0	0	0	0	1
	A40-A1-B2-																	0	0	0	0	0
93	A-B5-A2	35	250	14015	5.41	477.20	485.60	1041.64	0.0026	0.018	0.186	24.81	0	0	0	19	0	0	0	0	0	0
	-																	0	0	0	0	0
94	B5A2-B5A1	19	100	6675	6.97	10.92	17.89	37.27	0.0002	0.004	0.193	24.81	38	0	0	0	0	1	0	0	0	0
95	B4-A5	37	100	1080	4.08	0.25	10.92	22.75	0.0001	0.007	0.200	24.80	37	0	0	0	0	1	0	0	0	0
96	A5-A6	54	100	8538	6.74	0.00	6.74	14.00	0.0001	0.001	0.201	24.80	54	0	0	0	0	1	0	0	0	0
	-																	0	0	0	0	0
97	A5-A1	52	200	780	0.79	458.52	459.31	956.89	0.0025	0.126	0.554	24.69	0	0	52	0	0	0	0	1	0	0
98	A1-B1	155	200	14779	14.77	443.75	458.52	955.23	0.0025	0.388	0.942	24.30	0	0	155	0	0	0	0	1	0	0
99	B1-B2	35	200	3365	3.41	412.23	415.65	904.18	0.0024	0.085	1.028	24.23	0	0	35	0	0	0	0	1	0	0
100	B2-B3	155	200	12552	12.55	432.98	445.53	923.60	0.0024	0.365	1.393	23.87	0	0	155	0	0	0	0	1	0	0
101	B3-B4	10	100	2146	2.15	0.06	2.21	5.10	0.0003	0.003	1.173	23.87	10	0	0	0	0	1	0	0	0	0
102	B5-B7	28	200	1570	1.57	428.27	429.84	895.72	0.0023	0.062	1.191	23.81	0	0	28	0	0	0	0	1	0	0
103	B4-B9	61	100	3636	3.64	0.00	3.64	7.59	0.0003	0.001	1.199	23.80	61	0	0	0	0	1	0	0	0	0
104	B4-B8	49	200	1918	1.66	422.88	424.53	881.71	0.0022	0.106	1.301	23.70	0	0	49	0	0	0	0	1	0	0
105	A5-A10	21	100	6647	6.37	0.00	6.37	13.26	0.0010	0.001	1.201	23.70	21	0	0	0	0	1	0	0	0	0
106	B6-B6	35	200	1000	1.16	415.42	416.52	867.74	0.0021	0.073	1.275	23.63	0	0	35	0	0	0	0	1	0	0
107	B6-B11	44	100	6011	6.01	0.00	6.01	12.39	0.0009	0.001	1.276	23.63	44	0	0	0	0	1	0	0	0	0
108	B6-B7	67	200	3590	3.70	407.68	409.38	851.87	0.0020	0.130	1.504	23.50	0	0	67	0	0	0	0	1	0	0
109	B7-B12	30	100	3836	3.84	0.00	3.84	7.99	0.0003	0.001	1.505	23.50	30	0	0	0	0	1	0	0	0	0
110	B7-B13	50	100	6848	6.83	396.39	403.24	840.08	0.0020	0.101	1.605	23.39	0	50	0	0	0	0	1	0	0	0
111	B14-B15	45	100	1442	1.44	394.95	396.39	825.82	0.0018	0.079	2.254	22.75	0	45	0	0	0	0	1	0	0	0
	-																	0	0	0	0	0
	-																	0	0	0	0	0
112	B15-B16	378	150	25317	7.52	191.84	199.36	407.01	0.0031	0.373	2.627	22.37	0	378	0	0	0	0	1	0	0	0
113	B16-C1	67	150	3467	3.47	174.38	177.85	370.21	0.0028	0.139	2.766	22.25	0	67	0	0	0	0	1	0	0	0
114	C1-C2	40	150	1097	1.07	173.29	174.36	363.29	0.0027	0.068	2.815	22.19	0	40	0	0	0	0	1	0	0	0
	-																	0	0	0	0	0
115	C2-C15	25	100	595	0.61	22.85	90.84	64.25	0.0005	0.012	2.829	22.17	25	0	0	0	0	1	0	0	0	0
116	C15-C19	46	100	7825	7.52	0.00	7.52	15.65	0.0002	0.002	2.827	22.17	46	0	0	0	0	1	0	0	0	0
117	C15-C16	86	200	1723	1.72	17.60	23.32	46.97	0.0003	0.011	2.839	22.16	62	0	0	0	0	1	0	0	0	0
118	C15-C13	36	100	4282	4.28	0.00	4.28	8.92	0.0006	0.002	2.829	22.16	36	0	0	0	0	1	0	0	0	0

Sheet No 2

Length of Pile

Design of Pile Cap

Reinforcement Details

Checked by

Date

Sheet No. 2

Length of Pile

Design of Pile Cap

Design of Pile Cap

Length of span

Section of Right Line

Vertical Shear Stress

Node	Name of Node	Length of Pipe	Pipe Dia	New Water Demand to meet from Proposed Source Supply	Design of Pipe Line: Node Flow Details: Self	Previous	Total	Total Water Demand	Head Loss per Mt	Total Head Loss	Ground Level: Progressive	Ground Level: Actual	Length of pipe: 100	90	80	75	63	50	Sluice Valves: 100	90	80	75	63
		m	mm	Litres	KLD	KLD	KLD	LPM	Mtr	Mtr	Mtr	Mtr	m	m	m	m	m	m	No.	No.	No.	No.	No.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
236	J30- J29	65	100	0	0.00	0.00	0.00	0.00	0.0000	0.000	2.508	22.09	107	0	0	0	0	0	0	0	0	0	0
240	J30- J31	40	150	103.2	18.54	60.01	78.55	139.05	0.0009	0.015	2.523	22.08	0	40	0	0	0	0	0	0	0	0	0
24	R41- 455	26	100	2420	2.42	0.00	2.42	4.04	0.0001	0.003	2.523	22.08	26	0	0	0	0	0	0	0	0	0	0
242	31 - 232	3	80	340	0.34	77.33	77.67	129.45	0.0008	0.001	2.527	22.08	0	3	0	0	0	0	0	0	0	0	0
243	R33- R43	104	100	11635	11.64	0.00	11.64	24.26	0.0001	0.008	2.535	22.07	104	0	0	0	0	0	0	0	0	0	0
244	R32 R35	50	80	5152	5.15	46.39	51.55	85.92	0.0013	0.051	2.578	22.02	50	0	0	0	0	0	0	0	0	0	0
245	235- 027	27	100	7952	7.95	4.00	7.95	13.61	0.0010	0.021	2.599	22.01	27	0	0	0	0	0	0	0	0	0	0
246	R35- R36	5	100	378	0.38	32.10	32.54	67.09	0.0005	0.002	2.601	22.02	5	0	0	0	0	0	0	0	0	0	0
247	035- 031	17	100	4536	4.54	0.00	8.08	17.41	0.0001	0.003	2.603	22.01	17	0	0	0	0	0	0	0	0	0	0
248	035- R27	50	100	3629	3.61	39.15	27.79	49.56	0.0005	0.025	2.991	22.01	50	0	0	0	0	0	0	0	0	0	0
249	027- R28	107	100	3624	3.62	0.00	8.02	21.20	0.0000	0.000	2.603	22.00	107	0	0	0	0	0	0	0	0	0	0
250	027- 026	60	100	3957	3.92	9.57	11.22	24.20	0.0001	0.006	2.609	22.00	60	0	0	0	0	0	0	0	0	0	0
251	R2 R22	103	100	3168	3.17	0.00	9.57	28.91	0.0001	0.006	2.614	22.00	103	0	0	0	0	0	0	0	0	0	0
252	028	110	200	15203	15.20	281.28	296.48	493.93	0.0004	0.044	2.540	22.46	0	0	0	0	110	0	0	0	0	0	0
253	J33 R29	53	100	2128	2.13	4.82	6.38	14.12	0.0000	0.002	2.541	22.44	53	0	0	0	0	0	0	0	0	0	0
254	032-R43	90	100	4851	4.85	0.00	4.85	9.69	0.0000	0.001	2.542	22.10	90	0	0	0	0	0	0	0	0	0	0
255	038- 039	57	250	3914	3.91	277.44	280.80	585.00	0.0002	0.010	2.552	22.44	0	0	0	0	57	0	0	0	0	1	0
256	037-037	30	250	1614	1.61	275.85	277.46	578.05	0.0003	0.010	2.579	22.34	0	0	0	0	30	0	0	0	0	0	0
257	037-038	130	100	10251	10.25	7.49	25.74	49.47	0.0002	0.012	2.612	22.39	129	0	0	0	0	0	0	0	0	0	0
258	R38-R41	41	100	1965	1.97	0.00	1.97	4.09	0.0000	0.000	2.612	22.39	41	0	0	0	0	0	0	0	0	0	0
259	R36-R40	33	100	3294	3.29	5.13	8.51	17.91	0.0000	0.000	2.613	22.39	33	0	0	0	0	0	0	0	0	0	0
260	736-734	48	200	2420	2.42	0.00	3.63	7.15	0.0000	0.000	2.614	22.39	48	0	0	0	0	0	0	0	0	0	0
261	R37-R2FR	42	200	3960	3.96	349.44	352.11	524.22	0.0006	0.026	2.604	22.50	0	0	0	42	0	0	0	0	0	0	0
262	R2FR R2FL	39	100	4855	4.84	0.00	4.86	10.17	0.0000	0.001	2.605	22.49	39	0	0	0	0	0	0	0	0	0	0
263	R2FR- FF	96	200	1855	1.85	242.57	244.50	504.50	0.0008	0.072	2.659	22.34	0	0	96	0	0	0	0	0	0	0	0
264	FF-R20	70	100	8791	8.79	0.00	8.79	18.12	0.0000	0.003	2.659	22.34	70	0	0	0	0	0	0	0	0	0	0
265	FF-R21	38	100	2240	2.24	0.00	2.24	4.62	0.0000	0.000	2.659	22.31	38	0	0	0	0	0	0	0	0	0	0
266	FF- F8	150	200	32269	32.27	218.38	251.64	482.59	0.0007	0.092	2.746	22.25	0	0	0	150	0	0	0	0	0	0	0
267	26-R23	59	100	5371	5.37	10.60	15.97	29.11	0.0001	0.006	2.705	22.25	59	0	0	0	0	0	0	0	0	0	0
268	R23 R21	106	100	10709	10.71	0.00	10.90	22.06	0.0001	0.007	2.762	22.24	106	0	0	0	0	0	0	0	0	0	0
269	R5-R21	45	100	7441	7.44	0.84	8.21	9.01	0.0000	0.001	2.718	22.25	45	0	0	0	0	0	0	0	0	0	0

Recycling of Treated Wastewater

Node No.	Name of Water Pipe line	Length	Diameter of Water Pipe line	Net Water Demand to meet from Recycled Water Supply	Hydraulic Pipe Line								Length of pipe					No of Sluice Valve				
					Net Water Demand			Total Water Demand	Head Loss per 1M	Total Head Loss	Head Pipe Progressive	Terminal Head	110 mm dia	160 mm old	210 mm old	250 mm old	315 mm old	110 mm old	160 mm old	210 mm old	250 mm old	315 mm old
		m	mm	l/hrs	Net KLD	Previous KLD	Total KLD	LPM	Mtr	Mtr	Mtr	Mtr	Nos	Nos	Nos	Nos	Nos	Nos.	Nos.	Nos.	Nos.	Nos.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
271	P31-P32	12	110	504	0.04	0.00	0.04	1.84	0.0000	0.000	2.749	22.25	10	0	0	0	2	1	0	0	0	0
																		0	0	0	0	0
33	P	90	250	2721	3.14	37.24	40.38	1678.92	0.0435	3.920	2.757	22.20	0	0	90	0	2	0	0	0	1	0
																		0	0	0	0	0
272	P32-P33	19	200	2659	2.77	4.05	7.83	1151.08	0.0000	0.001	2.749	22.20	19	0	0	0	0	1	0	0	0	0
273	P33-P34	31	200	6652	6.05	0.00	6.05	1257.69	0.0000	0.002	2.800	22.20	31	0	0	0	0	1	0	0	0	0
																		0	0	0	0	0
274	P3 - P	24	150	2632	2.35	176.85	179.21	3741.40	0.0078	0.187	2.936	22.15	0	25	0	0	0	0	1	0	0	0
275	P - P5	9	150	877	0.82	172.07	172.88	3608.90	0.0077	0.070	3.006	22.15	0	8	0	0	0	0	0	0	0	0
																		0	0	0	0	0
276	P5-P6	91	100	17159	4.78	0.00	4.78	9.15	0.0000	0.000	2.855	22.15	91	0	0	0	0	1	0	0	0	0
277	P5-P15	115	100	18899	19.00	0.00	19.00	39.56	0.0000	0.000	2.855	22.15	115	0	0	0	0	1	0	0	0	0
278	P6-P7	34	150	3626	3.20	149.40	152.60	318.10	0.0018	0.062	2.926	22.07	0	34	0	0	0	0	0	0	0	0
																		0	0	0	0	0
279	P8-P30	255	350	37552	35.41	28.72	48.34	91.26	0.0001	0.024	2.959	22.05	0	255	0	0	0	0	1	0	0	0
280	P10-P13	84	150	1475	3.48	30.31	33.79	63.66	0.0001	0.003	2.954	22.05	0	84	0	0	0	0	1	0	0	0
281	P11-P11	52	150	5487	5.11	22.91	27.91	57.32	0.0001	0.004	2.971	22.05	52	0	0	0	0	0	1	0	0	0
282	P12-P18	18	100	1767	1.67	21.24	22.91	47.72	0.0003	0.004	2.976	22.05	18	0	0	0	0	0	1	0	0	0
283	P18-P19	24	100	2645	2.65	0.00	2.64	5.5	0.0000	0.000	2.977	22.05	24	0	0	0	0	0	1	0	0	0
284	P13-P11	102	100	10096	10.10	0.01	10.20	19.75	0.0002	0.002	2.987	22.00	102	0	0	0	0	0	1	0	0	0
																		0	0	0	0	0
285	P2- P1	57	300	6891	6.65	99.33	90.29	2.1.17	0.0047	0.269	2.194	21.81	57	0	0	0	0	0	0	0	0	0
286	P1-P7	68	200	22840	22.85	0.00	22.86	47.65	0.0003	0.028	3.347	21.96	168	0	0	0	0	0	0	0	0	0
287	P1- P27	55	200	3508	3.50	71.19	70.49	150.50	0.0021	0.146	3.341	21.68	55	0	0	0	0	0	0	0	0	0
																		0	0	0	0	0
288	P4- P28	90	100	9751	7.75	3.00	10.77	22.70	0.0001	0.008	3.349	21.68	58	0	0	0	0	1	0	0	0	0
289	P28-P29	22	100	7995	8.00	0.00	8.00	16.66	0.0000	0.001	3.350	21.68	22	0	0	0	0	0	0	0	0	0
																		0	0	0	0	0
290	P7- P8	196	100	20157	27.00	28.11	55.46	115.55	0.0005	0.097	3.626	21.37	196	0	0	0	0	1	0	0	0	0
291	P9-P9	38	100	6726	6.72	0.01	6.72	13.16	0.0000	0.002	3.629	21.37	38	0	0	0	0	0	0	0	0	0
292	P8-P6	64	100	5578	5.58	16.71	22.09	46.04	0.0003	0.017	3.643	21.36	64	0	0	0	0	0	0	0	0	0
293	P6- P5	70	100	1672	6.71	0.00	16.71	34.85	0.0002	0.011	3.654	21.34	70	0	0	0	0	0	0	0	0	0
		13253		4481891.2	1482.89								8756	1730	1541	1570	130	328	39	31	21	5
																		0	0	0	0	0
294	STP-P4824	35	250	11	0.00	966.79	966.79	2036.15	0.0036	0.850	4.050	24.95	0	0	0	35	0	0	0	0	1	0
																		0	0	0	0	0
295	P24-P219	49	200	11971	11.97	611.23	624.60	1303.26	0.0044	0.228	0.268	24.73	0	0	49	0	0	0	0	1	0	0
296	P19-P14	100	200	21195	21.20	599.04	611.25	1272.40	0.0043	0.436	1.076	22.92	0	0	100	0	0	0	0	1	0	0
																		0	0	0	0	0

Steel Line of Treated Waste Water

Node No.	Name of Water Pipe line	Length	Outer Diameter of Water Pipe line	Net Water Demand to meet from Recycled Water Supply	Net Water Demand		Analysis of Pipe Line					Length of pipe					Sluice Valve				
					Self	Pipelines	Total Water Demand	Total Head	Head Loss per 100 m	Total Head Loss	Head Loss Progressive	Total Head	110 mm dia	160 mm dia	210 mm dia	250 mm dia	315 mm dia	110 mm dia	160 mm dia	210 mm dia	250 mm dia	315 mm dia
		m	mm	Litres	KLD	KLD	KLD	m	Mtr	Mtr	m	Mtr	m	m	m	m	m	Nos.	Nos.	Nos.	Nos.	Nos.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18					
	SPC TO JR																	0	0	0	0	0
325	A10-J10	78	200	2506	2.51	302.36	304.87	945.82	0.0012	0.095	2.958	22.99	0	0	73	0	0	0	0	0	0	0
326	A1-A55	137	300	73571	73.57	0.00	73.57	137.46	0.0006	0.186	3.094	22.91	137	0	0	0	0	0	0	0	0	0
327	A1-J27	48	150	3922	1.92	66.36	68.28	141.53	0.0021	0.081	3.089	22.91	58	0	0	0	0	0	0	0	0	0
328	A2-A56	63	200	6720	6.72	57.54	64.26	139.64	0.0027	0.513	3.602	22.40	250	0	0	0	0	0	0	0	0	0
329	A21-A43	97	200	45603	45.60	12.69	58.29	116.65	0.0015	0.145	3.747	22.26	91	0	0	0	0	0	0	0	0	0
330	A43-A52	15	100	375	0.38	12.31	12.69	28.52	0.0001	0.002	3.749	22.25	15	0	0	0	0	0	0	0	0	0
331	A52-A61	76	150	4250	4.25	11.00	4.56	8.62	0.0001	0.004	3.749	22.25	76	0	0	0	0	0	0	0	0	0
332	A61-A62	71	150	2103	2.40	6.55	9.05	19.88	0.0001	0.004	3.749	22.25	71	0	0	0	0	0	0	0	0	0
333	A62-A63	49	200	6650	6.65	0.00	6.65	14.85	0.0000	0.000	3.749	22.25	49	0	0	0	0	0	0	0	0	0
334	A1-A2	57	150	1955	2.93	194.20	197.13	331.55	0.0014	0.042	3.086	22.31	0	57	0	0	0	0	0	0	0	0
335	A2-J2	22	150	2026	3.71	155.59	159.30	326.20	0.0014	0.030	3.120	22.34	0	22	0	0	0	0	0	0	0	0
336	A2-A53	49	150	5040	5.06	150.30	155.36	324.09	0.0014	0.064	3.188	22.61	0	49	0	0	0	0	0	0	0	0
337	A53-J3	103	200	8830	8.83	142.20	151.03	314.35	0.0013	0.134	3.321	23.66	0	103	0	0	0	0	0	0	0	0
338	A53-J3	56	150	6450	6.45	135.57	142.02	291.99	0.0012	0.065	3.386	23.61	0	56	0	0	0	0	0	0	0	0
339	A10-A52	98	150	11296	11.30	32.85	44.15	91.93	0.0020	0.094	2.480	22.52	98	0	0	0	0	0	0	0	0	0
340	A52-A53	102	150	7327	7.33	20.38	27.71	44.44	0.0009	0.052	2.532	22.46	102	0	0	0	0	0	0	0	0	0
341	A53-A54	85	200	5123	5.13	21.20	26.33	51.10	0.0005	0.026	2.559	22.43	85	0	0	0	0	0	0	0	0	0
342	A54-A55	61	100	2603	7.80	16.40	24.20	50.42	0.0007	0.019	2.578	22.41	61	0	0	0	0	0	0	0	0	0
343	A52-A56	101	150	8120	8.11	8.19	16.30	34.16	0.0002	0.006	2.636	22.39	101	0	0	0	0	0	0	0	0	0
344	A56-A57	75	150	2505	2.51	5.74	8.25	17.27	0.0002	0.005	2.641	22.39	75	0	0	0	0	0	0	0	0	0
345	A57-A58	91	150	5734	5.74	0.00	5.74	12.03	0.0002	0.002	2.643	22.38	91	0	0	0	0	0	0	0	0	0
346	A10-A11	98	150	6503	6.57	61.80	95.36	195.93	0.0005	0.049	2.435	22.56	0	98	0	0	0	0	0	0	0	0
347	A11-A59	13	150	2437	2.44	0.00	2.44	5.08	0.0000	0.000	2.435	22.56	13	0	0	0	0	0	0	0	0	0
348	A11-A12	49	150	1565	1.56	81.79	83.35	171.77	0.0003	0.018	2.453	22.55	0	49	0	0	0	0	0	0	0	0
349	A12-A60	36	100	1902	1.90	0.65	2.55	7.22	0.0000	0.000	2.454	22.55	36	0	0	0	0	0	0	0	0	0
350	A20-A21	11	100	1165	1.65	0.00	1.65	3.67	0.0000	0.000	2.454	22.55	11	0	0	0	0	0	0	0	0	0
351	A15-A16	32	150	6151	6.15	21.47	27.62	56.71	0.0007	0.029	2.483	22.52	34	0	0	0	0	0	0	0	0	0
352	A16-A20	29	100	5141	0.24	0.00	0.24	18.21	0.0000	0.000	2.484	22.50	29	0	0	0	0	0	0	0	0	0
353	A16-A17	34	100	2878	3.86	22.27	55.13	115.68	0.0020	0.047	2.530	22.27	26	0	0	0	0	0	0	0	0	0
354	A17-A5	62	100	6279	0.80	55.47	52.27	134.73	0.0015	0.09	2.829	22.16	62	0	0	0	0	0	0	0	0	0
355	A5-A59	123	150	12152	13.65	0.00	13.65	28.08	0.0001	0.015	2.892	22.13	25	0	0	0	0	0	0	0	0	0

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Revised Agenda Item 14

Recycling of Treated Waste Water

Sr. No.	Name of Water Pipe line	Length	Outer Diameter of Water Pipe line	Net Water Demand to meet from Recycled Water Supply	Design of Pipe Line								Length of pipe					No of Sluice Valves				
					Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Terminal Head	110 mm old	160 mm old	210 mm old	260 mm old	310 mm old	110 mm old	160 mm old	210 mm old	260mm old	310 mm old
					Self	Previous	Total	20 HRS														
		m	mm	Litres	KLD	KLD	KLD	LPH	Mtr	Mtr	Mtr	Mtr	m	m	m	m	m	No.	No.	No.	No.	No.
1	2	3	4	5	6	7	8	9	10	11	12	13	18	19	20	21	22	23	24	25	26	27
	-																	0	0	0	0	0
384	B23-B25	45	160	1630	1.63	206.82	207.85	433.02	0.0023	0.105	2.618	22.38	0	45	0	0	0	0	1	0	0	0
385	B25-A14	109	160	3953	3.49	203.33	206.82	430.88	0.0023	0.254	2.871	22.11	0	109	0	0	0	0	1	0	0	0
	-																	0	0	0	0	0
386	A14-A39	100	160	11250	11.26	5.19	16.95	35.31	0.0002	0.016	2.888	22.11	100	0	0	0	0	1	0	0	0	0
387	A39-A60	78	160	5152	5.15	0.00	5.15	10.82	0.0000	0.000	2.889	22.11	78	0	0	0	0	1	0	0	0	0
	-																	0	0	0	0	0
388	A14-A11	53	160	3972	5.97	180.41	186.38	388.29	0.0138	0.733	3.604	21.40	53	0	0	0	0	1	0	0	0	0
389	A11-A11	17	160	0	0.00	0.00	0.00	0.00	0.0000	0.000	3.604	21.40	17	0	0	0	0	1	0	0	0	0
390	A11-A10	176	160	14314	14.31	166.09	180.41	375.85	0.0130	2.292	5.896	19.10	176	0	0	0	0	1	0	0	0	0
	-																	0	0	0	0	0
391	A10-A13	35	160	4720	4.72	0.00	4.72	9.83	0.0000	0.001	5.897	19.10	35	0	0	0	0	1	0	0	0	0
	-																	0	0	0	0	0
392	A10-A7	56	160	4857	4.86	74.53	79.39	164.99	0.0028	0.159	6.055	18.95	56	0	0	0	0	1	0	0	0	0
393	A7-A7	112	160	10349	10.35	0.00	10.35	21.56	0.0001	0.007	6.062	18.94	112	0	0	0	0	1	0	0	0	0
394	A7-A20	53	160	5441	5.44	0.00	5.44	11.33	0.0000	0.001	6.056	18.94	53	0	0	0	0	1	0	0	0	0
395	A7-A4	55	160	4960	4.96	53.59	58.55	121.98	0.0010	0.056	6.141	18.86	55	0	0	0	0	1	0	0	0	0
396	A4-A8	45	160	3141	3.14	0.00	3.14	6.54	0.0000	0.000	6.141	18.86	45	0	0	0	0	1	0	0	0	0
397	A4-A4	41	160	13905	13.91	0.00	13.91	28.97	0.0001	0.005	6.165	18.85	41	0	0	0	0	1	0	0	0	0
398	A4-A5	193	160	18400	18.40	18.14	36.54	76.13	0.0007	0.131	6.271	18.72	193	0	0	0	0	1	0	0	0	0
399	A5-A2	40	160	18142	18.14	0.00	18.14	37.80	0.0002	0.007	6.279	18.72	40	0	0	0	0	1	0	0	0	0
	-																	0	0	0	0	0
400	A10-A5	174	160	15832	15.83	66.39	82.18	171.21	0.0030	0.528	6.424	18.58	174	0	0	0	0	1	0	0	0	0
	-																	0	0	0	0	0
401	A5-A6	56	160	13548	13.54	19.27	31.81	66.27	0.0005	0.029	6.454	18.55	56	0	0	0	0	1	0	0	0	0
402	A6-A20	53	160	3501	3.50	0.00	3.50	7.29	0.0000	0.000	6.454	18.55	53	0	0	0	0	1	0	0	0	0
403	A6-A3	55	160	12640	12.64	3.13	15.77	32.85	0.0001	0.008	6.461	18.54	55	0	0	0	0	1	0	0	0	0
404	A3-A3	46	160	3126	3.13	0.00	3.13	6.51	0.0000	0.000	6.462	18.54	46	0	0	0	0	1	0	0	0	0
	-																	0	0	0	0	0
405	A9-A12	55	160	12643	12.64	21.89	34.54	71.95	0.0006	0.032	6.497	18.54	53	0	0	0	0	1	0	0	0	0
406	A12-A18	64	160	4891	4.89	0.00	4.89	10.19	0.0000	0.000	6.498	18.54	64	0	0	0	0	1	0	0	0	0
407	A12-A15	53	160	12540	12.54	4.46	17.00	35.42	0.0002	0.009	6.465	18.53	53	0	0	0	0	1	0	0	0	0
408	A15-A16	48	160	2317	2.32	0.00	2.32	4.83	0.0000	0.000	6.466	18.53	48	0	0	0	0	1	0	0	0	0
409	A16A15-	23	160	2145	2.15	0.00	2.15	4.47	0.0000	0.000	6.466	18.53	23	0	0	0	0	1	0	0	0	0
		8047		568791.76									6923	1256	1074	15	0	65	17	11	1	0
		29378		3134559.6									20997	4115	2934	1636	136	295	63	36	28	2

For Ky Consultants Pvt. Ltd.

(Director)

DESIGN STATEMENT OF DRAINAGE

Abstract of Storm Water Drainage				
Size	Length	Avg Depth	Manhole	Vent Shaft
400	21966	10.81	1123	
500	2692	47.45	136	
600	1769	2.39	88	
700	1046	17.75	55	
800	240	78.97	13	30
900	254	231.98	15	
1000	207	2.96	10	
1100	439	3.14	22	
1200	125	3.52	7	

For Ky Consultants Pvt. Ltd.

(Director)

Design Statement of Storm Water Drainage

Sr. No	Line No.	Length	Quantity Storm water run-off material	Quantity of Waste Water generated			Discharge		Velocity	Time	Size of Storm line	Slope		Length of Storm line	Fall	Formation Level		Invert Level	
				SW	Bldg.	Total										Upper end	Lower end	Upper end	Lower end
		M	L	KLD	KLD	KLD	MLD	Cu.m	M/sec	Cu. m	mm			M	M	M	M	M	M
1	2	3	4	5	6	7	8	9	10	11	12	13		14	15	16	17	18	19
30	A3-A5	22	251151	391	0	391	0.39	0.0040	0.62	0.079	400	200	OK	22	0.05	258.821	0.000	254.821	254.675
31	A5-A6	30	337500	532	391	923	1.03	0.0151	0.62	0.079	400	200	OK	30	0.08	0.000	0.000	257.205	254.285
32	A20-A6	41	457950	458	0	458	0.46	0.0063	0.63	0.079	400	200	OK	41	0.06	258.531	0.000	254.121	254.015
34	A6-A5	51	574350	916	1765	2700	2.70	0.0273	0.63	0.079	400	200	OK	51	0.08	0.000	0.000	257.003	253.997
35	A18-A15	25	163725	184	0	184	0.18	0.0031	0.63	0.079	400	200	OK	25	0.04	254.679	254.036	250.679	250.314
36	A16-A15	32	354025	254	0	254	0.25	0.0020	0.63	0.079	400	200	OK	32	0.05	254.604	254.043	250.204	250.218
38	A15-A12	33	371700	916	435	1351	1.35	0.0157	0.63	0.079	400	200	OK	33	0.05	254.985	255.242	250.214	250.145
39	A19-A12	31	409905	410	0	410	0.41	0.0047	0.63	0.079	400	200	OK	31	0.05	254.967	255.242	250.367	250.187
40	A17-A5	30	337500	532	1753	2695	2.70	0.0312	0.63	0.079	400	200	OK	30	0.05	255.242	0.000	250.143	253.063
28	MAIN OUTFALL	30	0	0	27577	27577	27.58	0.3192	0.79	0.099	800	1300	OK	30	0.02	0.000	0.000	-2.562	-2.959
29	B2-A31	66	424905	429	0	429	0.43	0.0050	0.63	0.079	400	200	OK	66	0.09	257.546	257.477	250.146	250.052
30	A34-A33	12	129187	130	0	130	0.13	0.0015	0.63	0.079	400	200	OK	12	0.02	257.486	257.476	250.084	250.067
31	A33-A32	30	282870	282	668	950	0.95	0.0110	0.63	0.079	400	200	OK	30	0.05	257.429	257.241	250.052	250.060
42	A37-A36	14	69946	69	0	69	0.07	0.0008	0.63	0.079	400	200	OK	14	0.02	256.946	256.774	253.344	253.304
43	A35-A35	50	509654	503	69	572	0.57	0.0041	0.63	0.079	400	200	OK	50	0.07	256.734	253.44	253.304	253.139
44	A33-A32	35	514454	319	1522	1841	1.84	0.0190	0.63	0.079	400	200	OK	35	0.06	257.441	256.811	253.139	253.104
45	A49-A31	26	201451	201	0	201	0.20	0.0021	0.63	0.079	400	200	OK	26	0.01	257.816	257.545	256.016	256.358
46	A51-A52	55	505511	306	704	511	0.51	0.0059	0.63	0.079	400	200	OK	55	0.08	257.446	256.811	253.979	253.900
47	A53-A6	44	551455	496	2152	2442	2.44	0.0287	0.63	0.079	400	200	OK	44	0.06	256.811	256.501	253.074	253.011
48	A37-A37	51	259905	245	0	219	0.25	0.0029	0.63	0.079	400	200	OK	51	0.12	257.393	254.645	253.615	253.503
49	A37-A6	12	30101	30	240	270	0.28	0.0033	0.64	0.079	400	200	OK	12	0.02	256.644	256.500	253.525	253.503
50	A6-A5	71	167358	191	3961	2926	2.93	0.0339	0.63	0.079	400	200	OK	71	0.10	256.574	254.327	253.615	254.915
51	A51-A5	25	540000	540	0	540	0.54	0.0063	0.63	0.079	400	200	OK	25	0.04	256.199	256.027	254.799	254.704
52	A17-A5	71	681159	901	2466	4052	4.05	0.0471	0.63	0.079	400	200	OK	71	0.10	256.327	255.367	253.067	253.662

Prepared by Consultant's Ref. No.

Sheet No.

Pvt Ltd

Table

| | | |

Sheet No. 8

Fig. 4

Sheet No.10

Design Weight of Structural Steel

Job No.

Date

Checked by

Prepared by

Length of Member (m)

Unit Weight of Steel = 7850 kg/m³

Remarks

Member No.	Section	Length (m)	Unit Weight (kg/m)	Weight (kg)	Quantity	Total Weight (kg)

Sheet No. 1

Sheet No. 2

Plan of Sewerage & Water Supply

Upper Level

Lower Level

| | | |

Design Statement of Storm Water Drainage

Sr. No	Line No.	Length	Quantity Storm water accumulated	Quantity of Waste Water generated			Discharge		Velocity	Flow	Size of Storm line	Slope		Length of Storm line	Fall	Formation Level		Invert Level		
				Self	Branch	Total										Upper end	Lower end	Upper end	Lower end	
				LLD	KLD	KLD	MLD	Cu.m	M/Sec	Cu.m	mm			M	M	M	M	M	M	M
1	2	3	4	5	6	7	8	9	10	11	12	13		14	15	16	17	18	19	20
396	D21-D22	165	755891	754	2157	2911	2.91	0.0337	0.63	0.079	400	700	OK	165	0.24	228.956	229.196	226.378	226.034	
397	D5-D22	37	253019	253	0	253	0.25	0.0029	0.62	0.079	400	700	OK	37	0.05	228.950	229.000	227.530	227.477	
398	D22-D18	44	101886	102	3164	3266	3.27	0.0378	0.63	0.079	400	700	OK	44	0.06	229.590	229.730	226.034	225.971	225.871
399	A'A'13-A12	9	118423	118	0	118	0.12	0.0014	0.63	0.079	400	700	OK	9	0.01	229.728	229.724	228.228	228.313	
400	A'12-A12	50	295076	295	0	295	0.30	0.0034	0.63	0.079	400	700	OK	50	0.07	229.735	229.724	228.335	228.269	
401	A12-A11	53	913276	913	414	1327	1.33	0.0154	0.63	0.079	400	700	OK	53	0.08	229.724	229.717	228.261	228.188	
402	A11-A1	153	888244	888	1327	2215	2.22	0.0256	0.63	0.079	400	700	OK	153	0.22	229.717	229.688	228.188	227.969	
403	A1-A2	42	331497	331	2215	2547	2.55	0.0295	0.63	0.079	400	700	OK	42	0.06	229.688	229.498	227.969	227.909	
404	A'2-A2	54	472638	473	0	473	0.47	0.0055	0.62	0.079	400	700	OK	54	0.08	229.507	229.495	228.107	228.030	
405	D1-A2	23	223564	223	0	223	0.22	0.0026	0.63	0.079	400	700	OK	23	0.03	229.505	229.495	228.105	228.072	
406	A2-D2	74	232297	232	3243	3475	3.47	0.0402	0.63	0.079	400	700	OK	74	0.11	229.495	229.580	227.909	227.805	
407	D2-D19	110	1511822	1512	3475	4987	4.99	0.0577	0.63	0.079	400	700	OK	110	0.16	229.580	229.755	227.805	227.646	
408	D19-D18	131	1641826	1642	4987	6628	6.63	0.0767	0.63	0.079	400	700	OK	131	0.19	229.755	229.750	227.646	227.559	
409	D5-D18	130	761198	761	0	761	0.76	0.0088	0.63	0.079	400	700	OK	130	0.18	229.777	229.750	228.377	228.102	
410	D6-D18	40	221656	222	0	222	0.22	0.0026	0.63	0.079	400	700	OK	40	0.06	229.760	229.750	228.360	228.302	
411	D18-D17	47	256104	256	10877	11133	11.13	0.1289	0.68	0.134	500	600	OK	47	0.06	229.750	229.740	225.871	225.813	225.713
412	D4-84D17	140	1029871	1030	0	1030	1.03	0.0119	0.63	0.079	400	700	OK	140	0.20	229.773	229.740	228.373	228.173	
413	84D17-OUTFALL	30	166763	167	13163	13330	13.33	0.1437	0.72	0.205	600	900	OK	30	0.03	229.740	229.740	225.713	225.679	
		28738	221792861	221793																

Appurtenances of Storm Water

Sr. No.	Line No.	Length	Storm Pipe Line 400 mm dia Length M	Storm Pipe Line 450 mm dia Length M	Storm Pipe Line 600 mm dia Length M	Storm Pipe Line 700 mm dia Length M	Storm Pipe Line 800 mm dia Length M	Storm Pipe Line 900 mm dia Length M	Storm Pipe Line 1000 mm dia Length M	Storm Pipe Line 1100 mm dia Length M	Storm Pipe Line 1200 mm dia Length M	Nos of Manh. 400 mm dia No	450 mm dia No	600 mm dia No	700 mm dia No	800 mm dia No	900 mm dia No	1000 mm dia No	1100 mm dia No	1200 mm dia No
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	B2B30-B29	29	29									1								
2	B34-B29	30	30									1								
3	B29-B28	71	71									4								
4	B33-B27	97	97									5								
5	B28-B26	81	81									4								
6	B26-B27	98	48									3								
7	B25-B21	158	158									5								
8	B20-B21	96	96									3								
9	B22-B21	36		36								2								
10	A27-B24	78		78								4								
11	A21-A22	70	70									4								
12	A22-B23	26		26								1								
13	B23-B22	29		29								4								
14	A24-B25	86		60																
15	A60-A59	100	100									5								
16	A59-A15	131	131									7								
17	A11-A14	26			26									2						
18	A10-A11	181			181									9						
19	A15-A10	50	50									3								
20	B.A2-B.A5	44	44									2								
21	A5-A6	199	199									10								
22	A6-A7	51	51									3								
23	A7-A8	73	73									3								
24	A8-A9	96	96									3								
25	A20-A7	62	62									2								
26	A7-A3	92	92									4								
27	A3-A10	53		53								3								
28	A5-A10	181				181														

Sheet No:-17

by Consultants Pvt Ltd

Abstract of Joints at Storm Water

S. No.	Line No.	Length	Storm Pipe Line 400 mm Dia	Storm Pipe Line 500 mm Dia	Storm Pipe Line 600 mm Dia	Storm Pipe Line 900 mm Dia	Storm Pipe Line 1000 mm Dia	Storm Pipe Line 1200 mm Dia	Storm Pipe Line 1500 mm Dia	Storm Pipe Line 1800 mm Dia	Storm Pipe Line 2000 mm Dia	No of Joints 400 mm Dia	500 mm Dia	600 mm Dia	900 mm Dia	1000 mm Dia	1200 mm Dia	1500 mm Dia	1800 mm Dia	2000 mm Dia
			Length	Length	Length	Length	Length	Length	Length	Length	Length	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
			M	M	M	M	M	M	M	M	M	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	2	3	4	6	8	10	12	14	16	18	20	3	5	20	21	22	23	24	25	26
29	A1-A2	32	32									2								
30	A2-A3	55	55									3								
31	A20-A6	41	41									3								
32	A6-A5	52	52									3								
33	A18-A15	25	25									1								
34	A16-A15	22	22									2								
35	A18-A12	63	63									3								
36	A19-A12	51	51									3								
37	A12-A9	58	58									3								
38	SEA-OUTFALL	90				90									2					
39	A24-A23	90	90									3								
40	A24-A22	42	42									2								
41	A23-A25	50	50									2								
42	A37-A36	14	14									1								
43	A26-A27	90	90									3								
44	A35-A32	55	55									3								
45	A29-A31	26	26									1								
46	A31-A32	33	33									2								
47	A32-A6	44	44									2								
48	A35-A37	84	84									4								
49	A37-A6	12	12									1								
50	A6-A5	71	71									4								
51	A6-A5	25	25									1								
52	A17-A5	71	71									4								

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Appurtenants of Storm Water

Sr. No.	Line No	Length	Storm Pipe Line 450 mm DIA	Storm Pipe Line 500 mm DIA	Storm Pipe Line 600 mm DIA	Storm Pipe Line 700 mm DIA	Storm Pipe Line 800 mm DIA	Storm Pipe Line 900 mm DIA	Storm Pipe Line 1000 mm DIA	Storm Pipe Line 1100 mm DIA	Storm Pipe Line 1200 mm DIA	No. of Manhole: 450mm DIA	500 mm DIA	600 mm DIA	700 mm DIA	800 mm DIA	900 mm DIA	1000 mm DIA	1100 mm DIA	1200 mm DIA
			Length	Length	Length	Length	Length	Length	Length	Length	Length									
		M	M	M	M	M	M	M	M	M	M	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	2	3	4	5	6	7	8	9	10	11	12	18	19	20	21	22	23	24	25	26
53	A16-A17	56	56																	
54	A20-A19	13	13									1								
55	A21-A20	7	7																	
56	A20-A19	71	71									4								
57	A18-A19	78	78									4								
58	A19-A14	27	27																	
59	A14-A15	51	51																	
60	A14-A10	99		99								5								
61	A28-A27	79	79									4								
62	A27-A26	73	73									4								
63	A26-A25	28	28									3								
64	A25-A24	64	64									3								
65	A24-A23	102	102									4								
66	A23-A22	80	80									5								
67	A22-A10	97	97																	
68	A10-A9	67		67																
69	A9-A8	20	20																	
70	A9-A58	97			97															
71	A58-A3	71			71															
72	A3-A2	7			7															
73	A2-A1	56			56															
74	A2-A58-A3	115	115									6								
	A1-A45-	39	39																	
	A2-A45-	10	10									4								
	A7-A69-	79	79																	
	A3-A44-	63	63																	
	A2-A67-	11	11									4								
	A7-A64-	84	81									2								
	A2-A43-	30	30																	

Key Consultants Pvt. Ltd.

Statement of Storm Water

Sr. No.	Line No.	Length	Storm Pipe Line 400 mm Dia	Storm Pipe Line 500 mm Dia	Storm Pipe Line 600 mm Dia	Storm Pipe Line 700 mm Dia	Storm Pipe Line 800 mm Dia	Storm Pipe Line 900 mm Dia	Storm Pipe Line 1000 mm Dia	Storm Pipe Line 1100 mm Dia	Storm Pipe Line 1200 mm Dia	No. of CM Holes								
			Length	Length	Length	Length	Length	Length	Length	Length	Length	450 mm Dia	500 mm Dia	600 mm Dia	700 mm Dia	800 mm Dia	900 mm Dia	1000 mm Dia	1100 mm Dia	1200 mm Dia
		M	M	M	M	M	M	M	M	M	M	No.	No.	No	No.	No.	No.	No.	No.	No.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
75	B2A17-A1	55	55																	
76	B2A1-OUTFALL	30				30														
77	B2D24-D23	41	41																	
78	D23-D3	225	225																	
79	D24-B4	172	172																	
80	A4-B3	97	97																	
81	D3-D2	57	57																	
82	B6-B5	55	55																	
83	B5-B4	68	68																	
84	B4-D5	45	45																	
85	D5-D4	55	55																	
86	B2A13-B13	19	19																	
87	B13-B12	119	119																	
88	B12-A1	206	206																	
89	B1-B2	94	94																	
90	B1-D2	145	145																	
91	D2-D3	94	94																	
92	B5-B12	127		127																
93	B12-D24	44	44																	
94	B2P16	239	239																	
95	B16-D17	70	70																	
96	D17-B13	144	144																	
97	B17-B11	24	24																	
98	B11-D11	90	90																	

Appurtenances Schedule

Sr. No.	Line No.	Length	Storm Pipe Line 400 mm Dia	Storm Pipe Line 500 mm Dia	Storm Pipe Line 600 mm Dia	Storm Pipe Line 700 mm Dia	Storm Pipe Line 800 mm Dia	Storm Pipe Line 900 mm Dia	Storm Pipe Line 1000 mm Dia	Storm Pipe Line 1100 mm Dia	Storm Pipe Line 1200 mm Dia	No of Manhole								
			Length	Length	Length	Length	Length	Length	Length	Length	Length	400 mm Dia	500 mm Dia	600 mm Dia	700 mm Dia	800 mm Dia	900 mm Dia	1000 mm Dia	1100 mm Dia	1200 mm Dia
		M	M	M	M	M	M	M	M	M	M	No	No	No	No	No	No	No.	No.	No.
1	2	3	4	6	8	10	12	14	16	16	16	18	19	20	21	22	23	24	25	26
99	B10 - B12	55	55									3								
100	B13 - B12	140			130									2						
101	B15-B13	88			88									4						
102	B17 - B15	81	81									4								
103	B20-B15	132	132									7								
104	B15-B14	56	56									3								
105	B9-B21	84	84									4								
106	B14-B19	180	180									9								
107	B2B19-	70				70									4					
108	B3B2e-	64	64									3								
109	B2B24-OUTFALL	30				30										2				
110	B3A33-	62	62									3								
111	A32-A31	55	55									3								
112	A31-A34	61	61									2								
113	A33-A34	75	75									3								
114	B3A34-	125	125									5								
115	B3A29-OUTFALL	30	30									2								
116	B2B21-	109	109									5								
117	D22-B27	58	58									2								
118	B38- B25	81	81									4								
119	D27- D26	47	47									2								
120	B24- B26	113	113									5								
121	B26-B25	10	10																	
122	D27- D25	62	62									3								

Appurtenances of Storm Water

S No	Line No.	Length	Storm Pipe Line 400 mm Dia	Storm Pipe Line 500 mm Dia	Storm Pipe Line 600 mm Dia	Storm Pipe Line 700 mm Dia	Storm Pipe Line 800 mm Dia	Storm Pipe Line 900 mm Dia	Storm Pipe Line 1000 mm Dia	Storm Pipe Line 1100 mm Dia	Storm Pipe Line 1200 mm Dia	No. of Manholes								
			Length	Length	Length	Length	Length	Length	Length	Length	Length	400 mm Dia	500 mm Dia	600 mm Dia	700 mm Dia	800 mm Dia	900 mm Dia	1000 mm Dia	1100 mm Dia	1200 mm Dia
			M	M	M	M	M	M	M	M	M	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	2	3	4	5	6	10	12	14	15	16	18	18	19	20	21	22	23	24	25	26
125	R25-R23	68	68									2								
124	R24-R23	105	105									3								
125	R23-R31	6	6																	
126	R33-R31	34	34									2								
127	R31-R9	62	62									3								
128	R9-R10	59	59									3								
129	C14-C7	55	55									3								
130	C7-R34	21	21									1								
131	R35-R32	40	40									2								
132	R32-R10	93	89									3								
133	R10-R11	56		54									2							
134	R12-R11	134	134									3								
135	R11-C1	66		66									3							
136	R35-C1	22	22									1								
137	C1-C21	170		170									9							
138	C21-C21	13	13									1								
139	C21-C26	54			54									3						
140	C26-C26	31			34									3						
141	C24-C42	93			93									5						
142	C43-C43	31	31									2								
143	C43-C42	57	57									3								
144	C42-C44	62			62									3						
145	C44-C45	37			37									2						
146	C45-C26	46			46									3						
147	C26-C25	37	37									2								
148	C26-C25	68			68									3						
149	C25-C27	125			125									6						
150	C45-C7	66			66									3						
151	R2C7-	26			26									1						
152	[illegible]	13	13									1								

Appurtenances of Storm Sewer

Sr. No.	Line No	Length	Storm Pipe Line 400 mm Dia	Storm Pipe Line 500 mm Dia	Storm Pipe Line 600 mm Dia	Storm Pipe Line 700 mm Dia	Storm Pipe Line 800 mm Dia	Storm Pipe Line 900 mm Dia	Storm Pipe Line 1000 mm Dia	Storm Pipe Line 1100 mm Dia	Storm Pipe Line 1200 mm Dia	No of Manhole								
			Length	Length	Length	Length	Length	Length	Length	Length	Length	400 mm Dia	500 mm Dia	600 mm Dia	700 mm Dia	800 mm Dia	900 mm Dia	1000 mm Dia	1100 mm Dia	1200 mm Dia
		M	M	M	M	M	M	M	M	M	M	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
153	C49-C50	28	28									1								
154	C50-C51	59	59									2								
155	C52-C51	40	40									2								
156	C51-C24	51	51									1								
157	B12-B7	152	152									1								
158	B11-B7	15	15									1								
159	B7-B26-A	87	87									4								
160	C54-C50	109		109									3							
161	C12-C11	144	144									7								
162	C55-C52	93	93									5								
163	C51-C50	57	57									3								
164	C50-C49	72		72									4							
165	B26-C50	122		122									5							
166	B26-B5-B26-A	31			31										3					
167	B20-B18	55	55									2								
168	C8-B18	61			61										3					
169	B21-B20	15	15									1								
170	B2-B20	62			62										3					
171	B2-B1	100	100									5								
172	D6-B1	72	72									2								
173	B1-B3	63	63									3								
174	D5-B1	194	194									10								
175	C22-B8	39	39									2								
176	B8-B7	85	85									4								

by Consultants Pvt Ltd

Appurtenances of Storm Water

Sr. No.	Line No.	Length	Storm Pipe Line 400 mm dia Length	Storm Pipe Line 500 mm dia Length	Storm Pipe Line 600 mm dia Length	Storm Pipe Line 700 mm dia Length	Storm Pipe Line 800 mm dia Length	Storm Pipe Line 900 mm dia Length	Storm Pipe Line 1000 mm dia Length	Storm Pipe Line 1200 mm dia Length	Nos of Manhole 400 mm dia No.	500 mm dia No.	600 mm dia No.	700 mm dia No.	800 mm dia No.	900 mm dia No.	1000 mm dia No.	1100 mm dia No.	1200 mm dia No.
		M	M	M	M	M	M	M	M	M	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
177	D7- D1	66	66								3								
178	D9- D7	145	145								7								
179	D1- P2	54		54								3							
180	P14- P2	241	14								7								
181	P3-P4	37		37								2							
182	P10-P18	25	18								1								
183	P18-P16	25	25								1								
184	P15-P16	30	30								2								
185	P16-P13	40	40								2								
186	P14-P15	25	25								1								
187	P15-P9	173	173								9								
188	P3-P1	24		24								1							
189	P12- P4	55	55								3								
190	P4- P5	24			24							1							
191	P21-P20	76	76								4								
192	P20-P5	28	28																
193	P5- P6	67			67							2							
194	P21-P6	51	51																
195	P24-P23	110	110								6								
196	P23- P6	54	54								3								
197	P6- P7	135			135							7							
198	P26- P7	73	73								1								
199	P25- P7	73	28																
200	P7- P8	55			55							3							
201	P1- P8	28	28								1								
202	P8- P27	45			45							2							
203	P34-P36	38	38								2								
204	P36-P35	61	61								3								

Sr. No.	Line No.	Length	Storm Pipe Line 400 mm Dia	Storm Pipe Line 500 mm Dia	Storm Pipe Line 600 mm Dia	Storm Pipe Line 700 mm Dia	Storm Pipe Line 800 mm Dia	Storm Pipe Line 900 mm Dia	Storm Pipe Line 1000 mm Dia	Storm Pipe Line 1100 mm Dia	Storm Pipe Line 1200 mm Dia	No of Manhole: 400 mm Dia	500 mm Dia	600 mm Dia	700 mm Dia	800 mm Dia	900 mm Dia	1000 mm Dia	1100 mm Dia	1200 mm Dia
			Length	Length	Length	Length	Length	Length	Length	Length	Length									
		M	M	M	M	M	M	M	M	M	M	No	No	No	No	No	No	No	No	No
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
205	P26-P27	118	118									2								
206	P27-D22	47				47									1					
207	D22- D18	53				53									1					
208	D18- D35	56	56									2								
209	D35- D38	61	61									2								
210	R2D38-	174				174									9					
211	R2D20-	69							69									3		
212	D24-D23	69	69									3								
213	R2D26-	138							138									6		
214	R2C34-	137	137									7								
215	C36-C58	84	84									4								
216	C40-C58	27	27									1								
217	C38-C52	25	25									1								
218	R2C52-	134	134									7								
219	C53-C52	61	61									4								
220	C52-C16	217	217									11								
221	C21-C54	84	84									4								
222	C54-C20	105	105									5								
223	C20-C18	82	82									4								
224	C18-C16	40	40									2								
225	C16-	85		85									5							
226	R2D26-	48								48										

Pipe Quantities of Storm Water

Sr. No	Line No.	Length	Storm Pipe Line 400 mm dia	Storm Pipe Line 500 mm dia	Storm Pipe Line 600 mm dia	Storm Pipe Line 700 mm dia	Storm Pipe Line 800 mm dia	Storm Pipe Line 900 mm dia	Storm Pipe Line 1000 mm dia	Storm Pipe Line 1100 mm dia	Storm Pipe Line 1200 mm dia	No of Manhole						100 mm dia	1100 mm dia	1200 mm dia
			Length	Length	Length	Length	Length	Length	Length	Length	Length	400 mm dia	500 mm dia	600 mm dia	700 mm dia	800 mm dia	900 mm dia			
			M.	M	M	M	M.	M	M.	M	M	No	No	No	No	No.	No.	No.	No.	No.
1	2	3	4	6	8	10	12	14	16	16	18	19	20	21	22	23	24	25	26	
227	D27-D28	220								220									11	
228	D28- D29	130								110									6	
229	D25- D29	77	77									4								
230	D29-	61								61									3	
231	82D3-	50	50									2								
232	D2-D6	76	76									4								
233	D5-D6	22	22									1								
234	D6-D7	70	70									4								
235	D8-D7	112	112									6								
236	D7-D11	56	56									2								
237	D11-D11	83	83									4								
238	D13- D15	66	66									3								
239	D15- D16	83	83									3								
240	D18- D16	28	28									1								
241	D16-D10	56	56									2								
242	D19- D17	24	24									2								
243	D13- D17	65	65									3								
244	82D17-	20		20									1							
245	82D20-	57		57									3							
246	D24- D25	99	99									3								
247	D25- D52	70		70									4							
248	D3- D32	32									32									1
249	82D30-	65									65									2
250	82D36-	39	39									2								
251	82D35-OUTFALL	30									30									1
252	85C14-	43	43									2								
253	C21-C11	45	45									2								
254	C11-C10	55	55									3								

Appendix C of Storm Water

Sr No	Line No.	Length	Storm Pipe Line 400 mm Dia	Storm Pipe Line 500 mm Dia	Storm Pipe Line 600 mm Dia	Storm Pipe Line 700 mm Dia	Storm Pipe Line 800 mm Dia	Storm Pipe Line 900 mm Dia	Storm Pipe Line 1000 mm Dia	Storm Pipe Line 1100 mm Dia	Storm Pipe Line 1200 mm Dia	No of Manhole								
			Length	Length	Length	Length	Length	Length	Length	Length	Length	400 mm Dia	500 mm Dia	600 mm Dia	700 mm Dia	800 mm Dia	900 mm Dia	1000 mm Dia	1100 mm Dia	1200 mm Dia
		M	M	M	M	M	M	M	M	M	M	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	2	3	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38
255	C17-C10	87	87									2								
256	C14-C10	77	77									2								
257	C10-C9	58	58									3								
258	C7-C9	72	72									4								
259	C9-C6	47	47									2								
260	C7-C6	85	85									3								
261	C6-C5	74	74									4								
262	B59-B48	90	90									5								
263	B48-B37	49	49									2								
264	B37-C5	105	105									5								
265	C5-C4	27	27									1								
266	C26-C4	104	104									6								
267	C4-C2	57	57									3								
268	B41-B40	133	133									7								
269	B42-B40	246	246									13								
270	B40-C2	51	51									2								
271	C17-C16	45	45									2								
272	C16-C15	42	42									2								
273	C15-C15	48	48									2								
274	C19-C15	51	51									3								
275	C15-C2	21	21									2								
276	C2-C1	30		30									2							
277	C1-B36	60		60									1							
278	B33- B34	15	15									1								
279	B34- B35	37	37									2								
280	B35- B36	39	39									2								
281	B36-B35	196		196									9							

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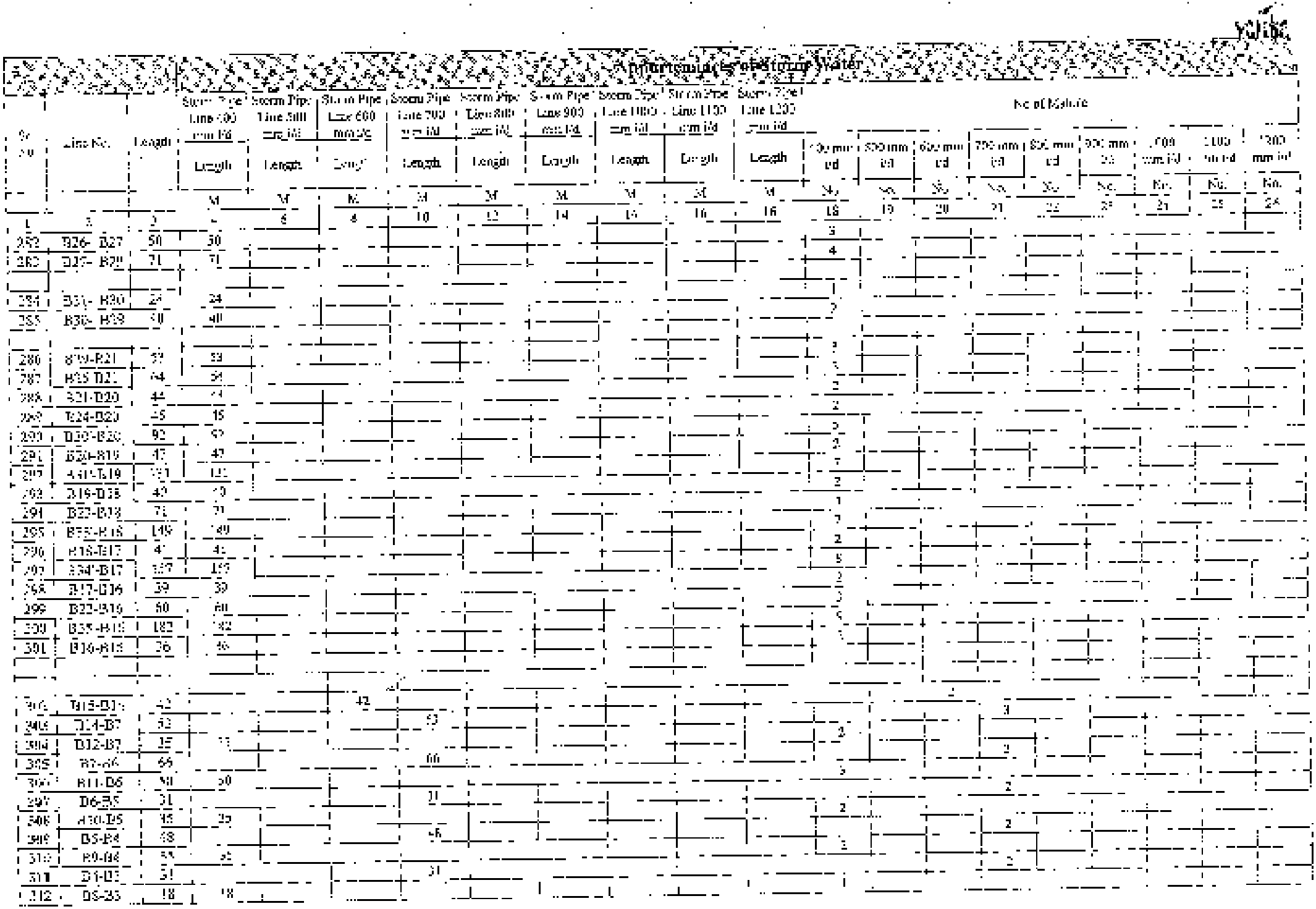

Sheet No.-28

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Quantities of Storm Water

Sr. No.	Line No.	Length	Storm Pipe Line 600 mm Dia	Storm Pipe Line 500 mm Dia	Storm Pipe Line 600 mm Dia	Storm Pipe Line 700 mm Dia	Storm Pipe Line 800 mm Dia	Storm Pipe Line 900 mm Dia	Storm Pipe Line 1000 mm Dia	Storm Pipe Line 1100 mm Dia	Storm Pipe Line 1200 mm Dia	Manhole/Masonry								
			Length	Length	Length	Length	Length	Length	Length	Length	Length	400 mm Dia (a)	500 mm Dia (b)	600 mm Dia (c)	900 mm Dia (d)	800 mm Dia (e)	900 mm Dia (f)	1000 mm Dia (g)	1100 mm Dia (h)	1200 mm Dia (i)
			M	M	M	M	M	M	M	M	M	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
313	D3-D2	167				167									8					
314	D2-D1	17				17									1					
315	A6-A5	40	40									2								
316	A5-A4	97	97									5								
317	A4-A3	52	52									3								
318	A3-A2	64	64									3								
319	A2-A1	39	39									2								
320	BSA1-BSA1	154	154									8								
321	MH1-OUTFALL	50				50									2					
322	A1-A2	6	6									1								
323	A38-A38	23	23									2								
324	A38-A40	37	37									2								
325	A39-A31	26	26									1								
326	A31-A41	140	140									7								
327	A7-A7	34	34									2								
328	A7-A21	30	30									2								
329	A41-E6	15	15									1								
330	E6-E6	111	111									6								
331	E6-A42	37	37									2								
332	A38-A39	26	26									1								
333	A39-A30	102	102									5								
334	A 31-A43	156	156									8								
335	A42-A36	16		16										1						
336	A6-A36	82	82									4								
337	A36-A43	40		40										2						
338	A38-A42	46	46									2								

Annexure-I Cost of Cutting Water

Sr. No.	Line No.	Length	Storm Pipe Line 400 mm Dia	Storm Pipe Line 500 mm Dia	Storm Pipe Line 600 mm Dia	Storm Pipe Line 700 mm Dia	Storm Pipe Line 800 mm Dia	Storm Pipe Line 900 mm Dia	Storm Pipe Line 1000 mm Dia	Storm Pipe Line 1200 mm Dia	No of Manhole 400 mm Dia	500 mm Dia	600 mm Dia	700 mm Dia	800 mm Dia	900 mm Dia	1000 mm Dia	1100 mm Dia	1200 mm Dia
			Length	Length	Length	Length	Length	Length	Length	Length	Nos	Nos	Nos	Nos	Nos	Nos	Nos	Nos	Nos
		M	M	M	M	M	M	M	M	M									
	3	5	6	8	10	12	14	16	18	20	14	19	20	21	22	23	24	25	26
336	A42-A37	10	10																
340	A37-A44	46	46																
341	A34-A45	91	91																
342	A48-A15	57	57																
343	A42-A16	44	44																
344	E..-A16	48	48																
345	A16-A45	71	71																
346	A45-E12	208		208															
347	B3B10-	110	110																
348	B17-B15	81	81																
349	B15-B1	65	65																
350	B5-B2	107	107																
351	B2-B4	49	49																
352	B16-B3	75	75																
353	B4-B14	315	315																
354	B14-B14	55	55																
355	B13-B13	102	102																
356	B13-B12	39	39																
357	B12-B11	43	43																
358	B11-B10	33	33																
359	B8-B10	37	37																
360	B2-B10	160		160															
361	B10-2	113	113																
362	B2-B1	40		40															
363	A41-B1	167	167																
364	B8-F1	125	125																
365	B2B3-	35		35															
366	B5-F12-	18			18														
367	B3C13-C6	180	180																
368	C6-L2	58	58																

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S. No.	Line Sec.	Length	Storm Pipe Line 400 mm (d)	Storm Pipe Line 500 mm (d)	Storm Pipe Line 600 mm (d)	Storm Pipe Line 700 mm (d)	Storm Pipe Line 800 mm (d)	Storm Pipe Line 900 mm (d)	Storm Pipe Line 1000 mm (d)	Storm Pipe Line 1100 mm (d)	Storm Pipe Line 1200 mm (d)	No of Manhole								
			Length	Length	Length	Length	Length	Length	Length	Length	Length	400 mm (d)	500 mm (d)	600 mm (d)	700 mm (d)	800 mm (d)	900 mm (d)	1000 mm (d)	1100 mm (d)	1200 mm (d)
		M	M	M	M	M	M	M	M	M	M	No	No	No	No	No	No	No	No	No
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
369	C12-C9	117	117									6								
370	C8-C7	23	23									1								
371	C7-C10	80		80									4							
372	C11-C10	61	61									3								
373	C10-S3B13	215		215								11								
374	B8B-A2	23					23								1					
375	B13-B14	43					43								2					
376	B14-B17	55						55								3				
377	B17-B20	11						11								1				
378	B20-B19	52						52								2				
379	B19-B21	41						41								2				
380	B21-B22	14						14								1				
381	B18-S3-	51						51								3				
382	B7BA-B8BS	22	22									1								
383	B3-B4	55	55									3								
384	B6-B4	57	57									3								
385	B4-B5	85	85									4								
386	B5-S3B5	244	244									12								
387	S3B5-C11B4A11	30						30								2				
388	B1B3-B1B2	40	40									2								
389	B4-B2	29	29									1								
390	B2-B1	21	21									1								
391	B1-A2	39	39									2								
392	A2-D23	93	93									4								
393	D23-D9	74	74									4								
394	D23-D7	75	75									4								
395	D7-D21	23	23									1								

Appurtenances of Storm Wa...

Sr. No	Line No.	Length	Storm Pipe Line 400 mm Dia	Storm Pipe Line 500 mm Dia	Storm Pipe Line 600 mm Dia	Storm Pipe Line 700 mm Dia	Storm Pipe Line 800 mm Dia	Storm Pipe Line 900 mm Dia	Storm Pipe Line 1000 mm Dia	Storm Pipe Line 1100 mm Dia	Storm Pipe Line 1200 mm Dia	No of Manhole								
			Length	Length	Length	Length	Length	Length	Length	Length	Length	400 mm Dia	500 mm Dia	600 mm Dia	700 mm Dia	800 mm Dia	900 mm Dia	1000 mm Dia	1100 mm Dia	1200 mm Dia
			M	M	M	M	M	M	M	M	M	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	2	3	4	6	8	10	12	14	14	16	16	18	19	20	21	22	23	24	25	26
396	D21-D22	165	165									8								
397	D5-D22	37	37									2								
398	D22-D18	44	44									2								
399	SMH3-A12	9	9																	
400	A12-A11	50	50									3								
401	A12-A11	53	53									4								
402	A11-A1	153	153									8								
403	A1-A2	42	42									2								
404	A2-A3	54	54									3								
405	D1-A2	23	23									1								
406	A2-D2	74	74									4								
407	D2-D19	110	110									6								
408	D19-D18	131	131									7								
409	D5-D18	130	130									7								
410	D6-D18	40	40									2								
411	D18-D17	47		47									2							
412	D4-SMH17	140	140									7								
413	SMH17-OUTFALL	30			30									2						
		28738	21966	2692	1769	1046	240	254	207	439	135	1123	136	88	55	13	15	10	22	7

For Ivy Consultants Pvt. Ltd.

(Director)

DESIGN STATEMENT OF ROADS

Abstract of Road Length

Sr. No.	Description	Width of Road				Total Length
		12 M	15 M	18 M	24 M	
		m	m	m	m	m
1	Sector 82	10116	2526	483	2310	15435
2	Sector 82A	2382	179	0	763	3324
3	Sector 83	5936	1505	637	1987	10065
4	Sector 84	1636	0	243	204	2083
5	Sector 85	4289.00	296.00	0.00	514.00	5099
6	Total	24359.00	4506	1363	5778	36006

24359 m 4.506 km 1.363 km 5.778 km 36.006 km

Sign by Contractor

Area master Road - Pavement

12m (24.359 x 6.0) = 1615.4 Sqm

15m (4.506 x 6.0) = 27036 Sqm

18m (1.363 x 6.00) = 8178 Sqm

24m - 5.778 x 7.0 = 40892 Sqm

262.260 Sqm

Rly = 36006 - 5778 = 41784 m (Engg. Breakup.)

Longitudinal Section (Road Design Statement) of Roads

S.No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Chainage	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Length of Roads			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12 M Wide Road	15 M Wide Road	18 M Wide Road	21 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m	m
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	D12-D11	133	24	234.100	234.130	-1	1000	234.908	235.430	1219.11	1219.11	0.00				133
2	D11-B10	60	24	234.130	234.130	-1	1000	234.430	234.415	421.81	421.81	0.00				60
3	B10- B9	57	24	234.130	236.900	-1	300	234.015	234.225	417.82	417.82	0.00				57
4	B9- B8	88	24	235.900	235.750	-1	450	234.225	234.030	639.19	639.19	0.00				88
5	B8- D7	62	24	235.750	234.000	-1	1250	234.050	233.930	195.54	195.54	0.00				62
6	D7- D5	195	24	234.000	233.430	-1	625	233.980	233.668	511.38	511.38	0.00				195
7	D7-D6	59	24	234.000	233.250	-1	600	233.668	233.553	448.40	448.40	0.00				59
8	D6- D5	18	24	233.250	233.250	1	200	233.553	233.618	89.66	89.66	0.00				18
9	D5- B4	55	24	233.250	233.600	1	175	233.618	233.933	396.55	396.55	0.00				55
10	B4- D3	56	24	233.600	234.050	1	200	233.958	234.213	432.71	358.71	0.00				56
11	D3- B2	24	24	234.050	234.260	1	125	234.213	234.485	198.54	198.54	0.00				24
12	B2- C1	77	24	234.150	234.300	1	350	234.485	234.705	673.70	673.70	0.00				77
13	C20-C18	84	24	231.250	231.250	1	425	232.018	232.291	1681.12	1681.12	0.00				82
14	C18- C16	43	24	231.250	231.750	1	475	232.191	232.283	359.35	750.35	0.00				43
15	C16- C7	20	24	231.750	232.380	1	150	232.007	233.040	316.02	316.02	0.00				20
16	C7- C5	74	24	232.380	233.000	1	225	233.040	233.209	860.61	860.61	0.00				74
17	C5- C3	58	24	233.250	233.450	1	225	233.553	233.811	462.01	462.01	0.00				58
18	C3- D31	80	24	233.750	234.130	1	180	234.004	234.437	476.37	476.37	0.00				80
19	D15-D30	31	24	232.000	232.000	-1	600	232.788	232.736	506.91	506.91	0.00				31
20	D30-D31	40	24	232.000	232.150	-1	600	232.736	233.669	554.69	554.69	0.00				40

Consultants Pvt Ltd

Sr No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Change	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Length of Roads			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12 M Wide Road	15 M Wide Road	18 M Wide Road	24 M Wide Road
		m	m					m	m	cum	cum	cum	m	m	m	m
21	P28-P27	168	24	233.250	232.000	-1	600	232.665	232.180	1690.84	1630.84	0.00				168
22	P27-P8	15	24	232.000	232.000	-1	600	232.589	232.211	380.13	380.13	0.00				15
23	P8- P7	62	24	232.000	232.000	-1	600	232.589	232.211	501.06	501.06	0.00				62
24	P7-P6	68	24	232.000	232.000	-1	600	232.611	232.056	252.10	252.10	0.00				68
25	P6-P12	45	24	231.250	231.250	-1	600	232.098	232.023	875.13	875.13	0.00				45
26	P6- P5	125	24	233.250	232.750	-1	600	233.553	233.246	1379.38	1379.38	0.00				125
27	P5- P1	60	18	234.000	233.810	-1	625	233.980	233.884	29.45	29.45	0.00		60		
28	P1- P2	56	28	234.810	233.500	-1	675	233.884	233.601	189.29	189.29	0.00		56		
29	P1-P5	195	19	233.810	232.250	-1	825	233.884	233.646	1602.21	1602.21	0.00	195			
30	P9-P8	97	15	232.250	232.430	1	475	232.648	232.071	691.17	691.17	0.00		97		
31	P2-P24	172	19	233.500	232.150	-1	500	233.801	233.515	859.07	859.07	0.00		172		
32	P14-P15	50	12	233.150	233.900	-1	225	233.515	233.266	90.55	0.00	90.55	50			
33	P24-P10	35	19	233.150	233.000	-1	550	233.515	233.451	214.11	214.11	0.00		35		
34	P13-P18	120	19	232.750	232.850	1	600	233.523	233.529	896.68	896.68	0.00	120			
35	P18-P19	30	15	232.850	232.700	1	1100	233.525	233.550	342.60	342.60	0.00		30		
36	P2-P1	56	18	233.500	233.150	-1	725	233.801	233.552	354.68	354.68	0.00			56	
37	P4-P13	172	12	233.150	233.900	-1	600	233.552	233.266	259.25	0.00	259.25	172			
38	P15-P16	56	19	233.900	232.800	1	250	233.266	233.490	18.65	18.65	0.00	56			
39	P16-P17	15	15	232.800	233.850	1	300	233.490	233.520	152.94	152.94	0.00		15		
40	P16-P18	9	12	232.800	232.850	1	300	233.490	233.520	75.41	75.41	0.00	9			

Sr No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Length of roads			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				10 M Wide Road	15 M Wide Road	15 M Wide Road	20 M Wide Road
		m	m					m	m	sq.m	cu.m	cu.m	m	m	m	m
41	P5-P4	16	18	233.150	233.100	-1	400	233.552	233.472	111.58	111.58	0.00			16	
42	P4-P12	67	12	233.150	240.160	1	860	233.477	239.551	331.11	251.11	0.00	67			
43	P1-P5	27	18	233.100	233.000	-1	250	233.472	233.361	179.03	179.03	0.00			27	
44	P5-P6	35	18	233.000	232.750	-1	225	233.064	233.031	435.71	435.71	0.00			35	
45	P8-P20	25	12	243.000	233.000	-1	925	233.361	233.221	94.53	94.53	0.00	25			
46	P20-P21	106	18	233.000	232.750	-1	300	233.371	233.309	431.98	431.98	0.00	106			
47	P21-P22	39	18	232.750	232.750	1	2000	233.109	233.111	46.33	13.33	0.00	39			
48	P21-P7	61	12	232.750	232.750	-1	775	233.109	233.030	253.69	233.69	0.00	61			
49	P6-P23	37	12	232.750	232.750	1	625	233.030	233.121	222.64	222.64	0.00	37			
50	P23-P24	110	12	232.750	232.250	1	575	233.121	233.373	878.27	878.27	0.00	110			
51	P6-P7	132	18	232.750	232.250	-1	525	233.020	232.443	362.08	362.08	0.00			132	
52	P7-P8	61	18	232.250	232.000	-1	475	232.443	232.315	278.92	278.92	0.00			61	
53	P7-P26	37	12	232.250	232.250	1	775	232.443	232.349	242.20	242.20	0.00	83			
54	P9-P25	40	12	232.250	232.100	1	675	232.443	232.302	242.97	140.97	0.00	40			
55	B8-B33	40	18	233.750	233.650	1	1000	234.070	234.070	167.94	167.94	0.00	40			
56	A10-B32	90	12	234.750	233.500	-1	500	234.415	234.237	546.20	546.20	0.00	89			
57	B32-B35	34	12	233.500	233.500	-1	800	234.237	234.105	282.20	282.20	0.00	34			
58	B35-C1	72	12	233.500	233.750	-1	800	234.105	234.105	453.54	453.54	0.00	72			
59	B35-C2	54	12	233.500	233.450	-1	950	234.185	234.819	215.66	215.66	0.00	54			
60	C21-C21	11	12	233.750	233.750	1	5000	234.922	234.819	75.31	75.31	0.00	11			
61	C21-C1	164	12	233.750	233.750	-1	750	234.819	234.105	905.46	905.46	0.00	164			

Sr.No	Name of Road	Length of Road	Width of Road	Natural Surface Level		Slope Character	Longitudinal slope	Formation Levels		Quantity	Earthwork in Embkmt	Excavation in Cutting	Length of Roads			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				10 M Wide Road	15 M Wide Road	14 M Wide Road	24 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m	m
85	C31-C32	70	12	233.400	232.250	1	5000	232.726	232.740	284.58	284.58	0.00	70			
86	C31-C34	57	12	232.300	232.000	-1	275	232.726	232.518	322.82	322.82	0.00	57			
87	C34-C36	83	15	232.000	231.000	1	825	232.518	232.419	707.94	707.94	0.00		83		
88	C36-C51	94	14	232.000	232.000	0	1000	232.419	232.219	938.97	938.97	0.00		94		
89	C34-C35	62	12	232.000	231.750	-1	205	232.518	232.216	366.13	366.13	0.00	62			
90	C35-C34	70	12	232.000	231.750	1	175	232.618	232.219	330.90	330.90	0.00	70			
91	C35-C52	188	15	231.750	231.750	1	500	232.216	232.597	1475.17	1475.17	0.00	188			
92	C35-C36	68	12	231.750	231.750	1	3000	232.216	232.239	389.41	389.41	0.00	68			191
93	C36-C16	171	24	231.750	231.800	1	1000	232.739	232.410	2719.92	2253.37	0.00				
94	C36-C35	86	15	231.750	231.550	-1	300	232.239	231.952	459.47	459.47	0.00	86			
95	C36-C52	18	24	231.550	231.250	1	1050	231.952	231.969	242.12	242.12	0.00				18
96	C16-C16	226	24	231.250	231.750	1	725	231.969	232.281	3389.62	3389.47	0.00				226
97	C38-C40	63	12	231.550	231.120	-3	350	231.952	231.777	398.33	398.33	0.00	63			
98	C52-C53	71	12	231.250	231.000	3	3000	231.969	231.995	729.20	729.20	0.00	71			
99	C53-C54	148	12	231.000	231.250	1	3000	231.995	232.042	1584.84	1584.84	0.00	148			
100	C20-C54	95	12	231.250	231.000	-1	200	232.018	231.852	940.56	940.56	0.00	95			
101	C54-C41	143	15	231.000	230.550	-3	650	231.882	231.442	1539.59	1539.59	0.00	143			
102	T20-D20	46	12	232.000	232.000	-3	1500	232.736	232.705	607.89	607.89	0.00	46			
103	D20-D38	166	12	232.000	232.000	1	2500	232.705	232.232	1471.44	1471.44	0.00	166			
104	D38-D22	97	12	232.000	232.000	1	2001	232.773	232.646	650.51	650.51	0.00	97			
105	D22-D37	42	12	232.000	232.000	-1	90	232.646	232.580	308.94	308.94	0.00	42			

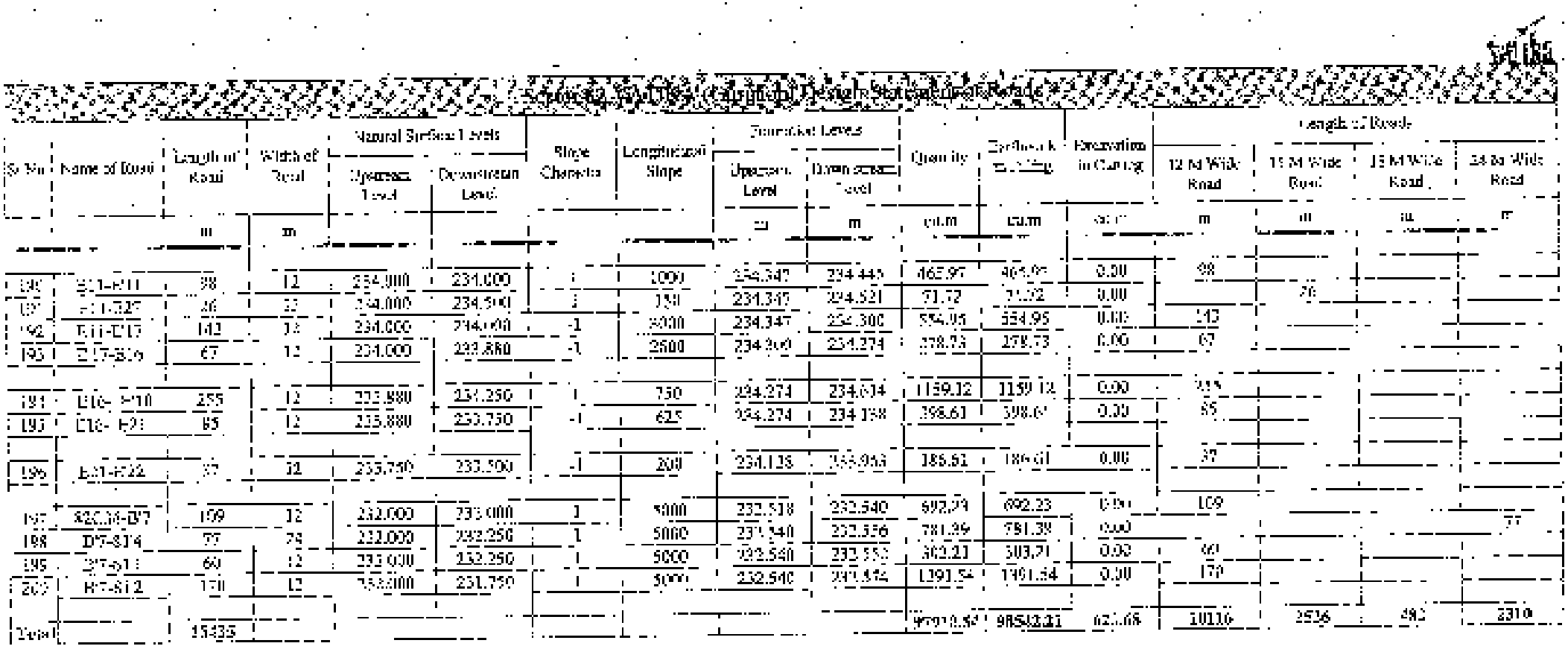
Sr.No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Embankment in Filling	Excavation in Cutting	Length of Roads			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12 M Wide Road	10 M Wide Road	18 M Wide Road	24 M Wide Road
		m	m					m	m	cum	cum	cum	m	m	m	m
106	D28-D36	67	12	232.250	232.250	1	450	232.669	232.861	414.21	414.21	0.00	67			
107	D36-D34	51	12	232.250	232.000	1	5000	232.861	232.871	453.49	453.49	0.00	51			
108	D38-D40	62	12	232.000	231.750	1	6000	232.773	232.782	671.12	671.12	0.00	62			
109	D40-D40	72	12	231.750	232.000	1	6000	232.782	232.791	789.01	789.01	0.00	72			
110	D26-D23	69	12	232.000	232.000	1	1000	232.705	232.771	612.70	612.70	0.00	69			
111	D23-D21	75	12	232.000	232.000	1	4000	232.774	232.793	686.43	686.43	0.00	75			
112	D23-D26	142	12	232.000	231.750	-1	225	232.774	233.158	1160.44	1160.44	0.00	142			
113	C16-D36	20	12	231.750	231.750	-1	350	232.338	232.380	134.15	134.15	0.00	20			
114	D26- D25	48	12	231.750	231.750	-1	2500	232.338	232.518	332.90	332.90	0.00	48			
115	D25- D28	220	12	231.500	231.500	-1	5000	232.518	232.245	1733.64	1733.64	0.00	220			
116	D28- D30	169	12	231.500	231.250	-1	500	232.245	231.907	1421.66	1421.66	0.00	169			
117	D30- D37	85	12	231.250	231.000	-1	1000	231.907	231.822	754.21	754.21	0.00	85			
118	D28- D29	106	12	231.500	231.250	1	700	232.245	232.775	1113.74	1445.74	0.00	106			
119	D29-D27	96	15	231.250	231.250	1	2000	232.775	232.870	2159.83	2159.83	0.00		96		
120	D29- D32	64	15	231.250	231.000	-1	1225	232.775	232.736	1558.94	1558.94	0.00		64		
12	D32-D34	38	12	231.000	231.500	-1	375	232.736	232.621	648.48	648.48	0.00	38			
122	D34-D35	59	12	231.500	231.250	-1	375	232.621	232.464	876.78	876.78	0.00	59			
123	D35-D36	81	12	231.250	230.750	-1	875	232.464	232.248	1618.14	1618.14	0.00	81			
124	D32- D33	67	12	231.000	231.000	-1	50	232.723	232.584	846.43	846.43	0.00	67			
125	D33-D31	60	15	231.000	231.500	1	50000	232.583	232.395	124.89	124.89	0.00		60		
126	D33-D31	61	12	231.000	231.250	-1	1400	232.583	232.399	172.74	172.74	0.00	61			
127	D31-D25	64	12	231.250	231.000	-1	1400	231.250	231.293	116.55	116.55	0.00	64			
128	D25-D24	64	12	231.000	231.000	-1	1500	231.295	231.253	209.00	209.00	0.00	64			
129	D21-D17	18	12	231.250	231.250	1	5000	231.559	231.546	19.66	19.66	0.00	18			
130	D17-D12	90	12	231.250	231.500	1	500	231.643	231.225	62.12	97.49	0.00	90			

Sr No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Length of Roads			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12 M Wide Road	15 M Wide Road	18 M Wide Road	24 M Wide Road
		m	m	m	m			m	m	cu.m	cu.m	cu.m	m	m	m	m
131	D17- D19	47	12	231.250	231.191	1	5000	231.343	231.301	50.10	50.10	0.00	47			
132	D19- 316	57	12	231.250	231.250	1	5000	231.351	231.362	69.91	56.32	0.60	57			
133	D16-D18	46	12	231.250	231.500	1	300	231.362	231.512	55.47	55.47	0.00	46			
134	D15- D16	63	12	231.450	231.250	1	3000	231.508	231.380	88.60	88.60	0.00	63			
135	D11- D15	69	15	231.250	231.550	1	2300	231.480	231.401	145.67	145.67	0.00		69		
136	D01-p10	80	12	231.350	231.120	-1	725	231.401	231.291	106.58	106.58	0.00	80			
137	D10-D9	37	12	231.120	231.000	1	5000	231.291	231.298	104.14	104.14	0.00	37			
138	D10-D11	22	12	231.120	231.120	1	5000	231.291	231.295	45.69	45.69	0.00	22			
139	D11-D7	55	15	231.550	231.370	1	390	231.401	231.342	92.16	92.16	0.00		55		
140	D7-D8	160	15	231.370	231.050	-1	875	231.342	231.360	542.95	542.95	0.00			160	
14	D8-D17	40	12	231.050	231.250	1	60	231.360	232.007	260.99	260.99	0.00	40			
142	D7-D6	55	15	231.370	231.500	1	725	231.543	231.618	119.75	119.75	0.00		55		
143	D5-D5	39	12	231.500	231.500	1	5000	231.618	231.626	57.09	57.09	0.00	39			
144	D6- D2	84	12	231.500	232.000	1	150	231.618	232.176	149.27	149.27	0.00	84			
145	25-D1	23	15	233.420	233.500	1	700	233.668	233.783	89.97	89.97	0.00		23		
146	24- B24	210	12	235.500	234.250	1	200	235.783	234.849	1091.84	1091.84	0.00	210			
147	B4-B5	59	15	233.500	233.500	1	225	233.783	234.019	318.83	318.83	0.00		59		
148	B5- B29	210	12	234.300	234.300	1	285	234.019	234.849	1327.09	1327.09	0.00	210			
149	B24-B23	54	12	234.250	234.300	1	6001	234.853	234.842	364.67	364.67	0.00	54			
150	B3-B4	65	12	233.500	233.600	-1	800	234.019	233.938	334.00	334.00	0.00	65			

Sr.No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quarry	Earthwork in Filling	Excavation in Cutting	Length of Roads			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				2.8 M Wide Road	3.5 M Wide Road	4.8 M Wide Road	7.0 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m	m
151	B3-B4	56	15	233.200	234.100	1	200	234.019	234.299	301.41	301.41	0.00		56		
152	B5- B6	69	15	234.100	234.500	1	435	234.299	234.502	150.73	150.73	0.00		69		
153	B4-B5	64	15	234.100	234.050	-1	775	234.299	234.216	175.73	155.23	0.00		64		
154	B2-D35	46	15	234.100	234.250	1	900	234.486	234.336	210.53	210.53	0.00		46		
155	D36-D37	34	15	234.250	234.230		5000	234.536	234.342	147.42	147.42	0.00		34		
156	D36-D1	90	12	234.250	234.500	1	925	234.536	234.633	226.06	226.06	0.00	90			
157	B29- B25	142	12	234.300	234.250	-1	675	234.842	234.632	787.39	787.39	0.00	142			
158	D25-D26	49	12	234.250	234.200	-1	775	234.636	234.436	186.87	186.87	0.00	19			
159	B32- B33	111	15	234.200	234.500	1	775	234.451	234.641	242.30	247.30	0.00	174			
160	B30- B31	6	12	234.200	234.000	-1	325	234.454	234.436	24.80	24.80	0.00	6			
161	D21- D35	53	12	234.000	233.900	1	6000	234.495	234.445	335.16	335.16	0.00	53			
162	B61- B60	50	12	234.000	234.000	-1	925	234.436	234.281	215.00	215.00	0.00	50			
163	B60- B59	114	12	234.000	234.250	1	600	234.281	234.509	369.92	369.92	0.00	114			
164	D30- D9	18	12	234.000	233.900	-1	325	234.281	234.226	65.60	65.60	0.00	18			
165	B58- D26	9	12	234.250	234.500	1	925	234.662	234.660	33.72	33.72	0.00	9			
166	D25- D34	124	15	234.500	234.500	1	775	234.660	234.820	557.24	557.24	0.00		124		
167	B59- B57	48	12	234.250	234.500	1	525	234.660	234.654	176.75	176.75	0.00	48			
168	B27- D28	106	15	234.500	234.750	1	1500	234.834	234.857	350.85	350.85	0.00		106		
169	B27-D22	59	12	234.500	234.750	1	1000	234.854	234.892	168.96	168.96	0.00	59			
170	D22-D21	129	12	234.750	234.800	1	1000	234.893	235.012	253.67	253.67	0.00	129			

Summary of Alignment Design Statement Sheets

Sr.No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Length of Roads			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12 M. Wide Road	15 M. Wide Road	18 M. Wide Road	24 M. Wide Road
		m	=					m	m	cu.m.	cu.m.	cu.m.	m	m	m	m
171	B1-B15	205	12	234.600	235.170	1	302	234.705	235.277	813.00	813.99	0.00	205			
172	B15- B16	121	12	235.120	234.750	1	3000	235.277	235.401	658.90	658.90	0.00	121			
173	B16- B17	26	15	234.750	234.750	1	5000	235.401	235.406	254.86	254.86	0.00		26		
174	B15-B18	13	15	234.750	234.750	1	5000	235.401	235.403	127.18	127.18	0.00		13		
175	B15-B19	10	12	235.120	235.200	1	825	235.377	235.500	133.55	133.55	0.00	60			
176	B5-B6	750	12	239.350	235.100	-1	825	239.618	233.402	487.76	487.76	0.00	125			
177	B15-B20	159	12	233.100	233.500	-1	600	233.762	233.397	56.11	56.11	0.00	59			
178	B4-B7A	130	12	236.600	233.400	-1	775	234.933	233.761	342.95	342.95	0.00	130			
179	B14-B19	189	12	233.100	233.500	-1	525	233.765	233.405	305.76	205.76	0.00	189			
180	B19-B24	62	12	235.500	233.500	-1	775	233.405	233.319	102.63	0.00	102.63	62			
181	B14-B15	94	15	233.400	234.100	-1	180	233.765	233.405	295.50	295.50	0.00		94		
182	B19-B20	68	17	233.500	233.500	-1	300	233.405	233.162	151.94	0.00	151.94	68			
183	B24-B26	84	12	233.500	233.000	-1	475	233.319	233.142	19.28	0.00	19.28	84			
184	B24-B25	22	12	233.500	234.500	1	100	233.319	233.539	18.67	0.00	18.67	22			
185	B2- B13	133	15	234.050	233.750	-1	800	234.210	234.052	460.54	460.54	0.00		133		
186	B 2- B18	152	15	233.750	234.050	-1	700	234.052	233.895	442.15	442.15	0.00		152		
187	B12- B14	56	15	234.050	233.400	-1	1100	234.052	233.777	285.50	285.50	0.00		56		
188	B18- B19	87	12	233.750	233.500	-1	275	233.835	233.411	1.02	0.00	1.02	87			
189	B12- B13	56	15	234.350	234.050	1	550	234.052	234.347	272.89	272.89	0.00		56		



Sr No	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Change in	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Cutting	Excavation in Cutting	Length of Roads			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12 M Wide Road	15 M Wide Road	18 M Wide Road	24 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m	m
190	B1-B11	38	12	234.000	234.000		1000	234.347	234.445	462.97	462.97	0.00	38			
191	B11-B27	26	12	234.000	234.500	1	1250	234.347	234.521	71.72	71.72	0.00		26		
192	B11-D17	142	12	234.000	234.000	-1	0000	234.347	234.300	554.95	554.95	0.00	142			
193	D17-B19	67	12	234.000	233.880	-1	2600	234.300	234.274	278.73	278.73	0.00	67			
194	D16-B10	255	12	233.880	234.250	1	750	234.274	234.614	1159.12	1159.12	0.00	255			
195	D16-B21	85	12	233.880	233.750	-1	625	234.274	234.198	398.61	398.61	0.00	85			
196	B21-B22	37	12	233.750	233.500	-1	200	234.138	234.066	185.61	186.61	0.00	37			
197	B22,26-D7	109	12	232.000	232.000	1	0000	232.518	232.540	692.23	692.23	0.00	109			
198	D7-B24	77	24	232.000	232.250	1	5000	232.340	232.356	781.39	781.39	0.00				77
199	D7-B1	60	12	232.000	232.250	1	5000	232.540	232.553	303.21	303.71	0.00	60			
200	B7-B12	170	12	232.000	231.750	1	5000	232.540	232.514	1391.54	1391.54	0.00	170			
Total		15435								9750.62	9852.21	62.68	10110	2536	482	2310

DESIGN STATEMENT OF WATER SUPPLY

vatika

Abstract of Water Supply Line(s)								
Sr.No.	Description	100 mm I/D	150 mm I/D	200 mm I/D	250 mm I/D	300 mm O/D	450 mm O/D	Total Length
		m	m	m	m	m	m	m
	(Distribution Main)	DI K9						
1	Zone 1	14338	2535	1334	1116	465	280	20068
2	Zone 2	7695	1538	167	737	200	237	10594
3	Sub Total	22033	4093	1501	1853	665	517	30662
4	(Rising Main)	DI K9	DI K9	DI K9	DI K9	DI K9	DI K9	
5	HUDA Source -Boosting Station						380	380
6	Tube wells -Boosting Station		1967	352	146	169		2634
7	Sub Total	0	1967	352	146	169	380	3014
8	Total Length	22033	6060	1853	1999	834	897	33676
	Sluice Valves							
9	No.	No.	No.	No.	No.	No.	No.	No.
10	Zone 1	203	38	18	18	5	3	285
11	Zone 2	98	21	3	12	1	2	137
12	Sub Total	301	59	21	30	6	5	423
13	(Rising Main)							
14	HUDA Source -Boosting Station						2	2
15	Tube wells -Boosting Station	21	7	1	1	1		31
16	Sub Total	21	7	1	1	1	2	33
17	Total	322	66	22	31	7	7	455

For Ky Consultants Pvt. Ltd.

(Director)

vatika

Detail of Area Residential Vatica India Next,Gurgaon								Daily Water Requirement		
Sr.	Description	Size of Plot		Area of each Unit / Plot	Total Area		Total Persons	Water Allowance	Water Require-ment	Net Water Require-ment
1	Residential (Plotted)									
	Category of Plots	Width	Depth							
		m	m	Sq.m.	Sq.m.	Acres	No.	Ltrs./Capit al/ Day	Ltrs./Day	Ltrs./Day
1.11	A	4.50	12.50	56.25	27956	6.91	4473	135	603855	603855
1.12	A1	5.00	10.00	50.00	2600	0.64	468	135	63180	63180
1.13	B	8.20	18.40	150.88	21576	5.33	1931	172.5	333011	333011
1.14	C	10.54	19.04	200.68	24483	6.05	1647	172.5	284108	284108
1.15	D	8.20	18.40	150.88	54468	13.46	4874	172.5	840679	840679
1.16	E	10.60	19.04	201.82	54291	13.42	3632	172.5	626434	626434
1.17	F	10.60	24.00	254.40	33326	8.24	1769	172.5	305066	305066
1.18	F1	11.40	22.00	250.80	43388	10.72	2336	172.5	402874	402874
1.19	G	12.30	24.00	295.20	63763	15.76	2916	172.5	503010	503010
1.20	H	14.13	23.36	330.07	52481	12.97	2147	172.5	370271	370271
1.21	H1	12.98	25.77	334.49	31442	7.77	1269	172.5	218903	218903
	H2	13.68	25.00	342.00	4788	1.18	189	172.5	32603	32603
1.23	I	15.80	25.90	409.22	29464	7.28	972	172.5	167670	167670
1.24	H	14.50	28.80	417.60	418	0.10	14	172.5	2329	2329
1.25	J	15.90	25.90	411.81	9060	2.24	297	172.5	51233	51233
1.26	K	14.40	23.60	339.84	9516	2.35	378	172.5	65205	65205
1.27	L	11.62	25.91	301.07	1806	0.45	81	172.5	13973	13973
1.28	M	9.99	20.56	205.39	13967	3.45	918	172.5	158355	158355
	Sub Total				478793	118.31	30308		5042756	5042756
2	Area under Group Housing				113311	28.00	8400	172.5	1449000	1449000
3	Commercial Area			Sqm	Sq.m	Acres				
3.1	Commercial Area				52083	12.87		25000	321750	321750
3.2	Nursing Home	2.21		1127	8943	2.21		5000	40000	40000
4	Community Area			Acres	Sq.m	Acres				
4.1	High School		16.76	5.00	67825	16.76		150000	450000	450000
4.2	Primary School		4.22	1.00	17078	4.22		50000	200000	200000
4.3	Nursery School		1.54	0.20	6232	1.54		10000	60000	60000
4.4	Creche		0.75	0.20	3035	0.75		10000	30000	30000
4.5	Dispensary		2.26	1.25	9146	2.26		25000	56500	56500
4.6	Club / Community		4.11	2.00	16632	4.11		25000	102750	102750
4.7	Religious Building		0.59	0.20	2388	0.59		10000	20000	20000
4.8	Taxi Stand		3.1605	0.50	12790	3.16		5000	30000	30000
4.9	Police Post		1.02	1.02	4128	1.02		25000	25500	25500
4.10	Health Centre		2.63	2.63	10643	2.63		25000	65750	65750
	Sub Total				149896	37.04			1040500	1040500
5	Undetermined use				138644	34.26		25000	856500	856500
5	Green Area									
5.1	Organised Green - Area under Green			13.16	532862	13.16		25000	329000	
5.2	Incidental Green -			8.6	34762.2	8.59		25000	214750	
	Sub Total				88018	21.750			543750	
6	Area under Master Roads				75676	18.700		10000	187000	
7	Area under Roads				486485	120.214		10000	1202140	
	Total Area / Total Demand				1591850	393.358			10683396	8750506
	Fire Demand Plotted					550.52			9234396	7301506

For ky Consultants Pvt. Ltd.

(Director)

Abstract of Water Supply Length								
Sr. No.	Description	100 mm dia	150 mm dia	200 mm dia	250 mm dia	300mm dia	400mm dia	Total Length
		m	m	m	m	m	m	m
	(Distribution Main)	DI K9						
1	Zone 1	14338	2535	1334	1116	465	280	20068
2	Zone 2	7695	1558	167	737	200	237	10594
3	Sub Total	22033	4093	1501	1853	665	517	30662
4	(Rising Main)	DI K9	DI K9	DI K9	DI K9	DI K9	DI K9	
5	HUDA Source -Boosting Station						380	380
6	Tube wells -Boosting Station		1967	352	146	169		2634
7	Sub Total	0	1967	352	146	169	380	3014
8	Total Length	22033	6060	1853	1999	834	897	33676
	Sluice Valves							
9	No.	No.	No.	No.	No.	No.	No.	No.
10	Zone 1	203	38	18	18	5	3	285
11	Zone 2	98	21	3	12	1	2	137
12	Sub Total	301	59	21	30	6	5	422
13	(Rising Main)							
14	HUDA Source -Boosting Station						2	2
15	Tube wells -Boosting Station	21	7	1	1	1		31
16	Sub Total	21	7	1	1	1	2	33
17	Total	322	66	22	31	7	7	455

Not to Consider for Billing

Design of Pipe Line

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Fire Water Demand + Total Distributive Water Demand)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Real Loss Pressure	Terminal Head
						self	connection	total	20 HRS				
		m	mm	LPD		KLD	KLD	KLD	LPM	m	m	m	m
	1	2	3	4	5	6	7.00	8	9	10	11	12	13
1	WW-0	30	400	1144	0	0.00	7306.19	7306.19	13221.22	0.0164	0.435	0.435	25.57
2	D-82D2	27	400	1030	0	0.00	4653.33	4653.33	9694.44	0.0083	0.169	0.602	25.40
	SECTOR 82-												
3	D82-D6	92	100	7800	4329	4.33	313.03	317.36	565.17	0.0271	2.372	2.974	26.02
4	D6-D5	70	100	12052	10908	10.91	0.00	10.91	23.22	0.0001	0.002	2.976	26.02
5	D6-D7	56	100	22864	21528	21.53	280.60	302.12	629.45	0.0338	1.895	4.869	24.13
6	D7-D8	125	100	61658	56890	56.89	0.00	56.89	118.52	0.0015	0.192	6.061	23.94
7	D7-D12	56	100	12451	9919	9.92	214.39	223.31	466.06	0.0194	1.086	6.955	23.05
8	D11-D10	78	100	19277	16301	16.30	10.41	26.71	55.64	0.0001	0.001	6.964	23.03
9	D10-D14	8	100	10755	10408	10.41	0.00	10.41	21.68	0.0001	0.001	6.965	23.03
10	D11- D15	65	100	54173	13644	53.64	174.04	187.68	391.03	0.0140	0.911	7.865	22.35
11	D15- D16	62	100	13615	9250	9.25	164.79	174.04	362.59	0.0122	0.755	7.710	22.29
12	D15- D18	29	100	12750	11644	11.64	0.00	11.64	24.26	0.0001	0.002	7.712	22.29
13	D16- D19	61	100	5877	2758	2.75	150.40	153.15	319.06	0.0096	0.586	8.296	21.70
14	D19- D17	25	100	12712	11641	11.61	138.75	150.40	313.33	0.0092	0.260	8.557	21.44
15	D17-D41	66	100	24148	21630	21.63	0.00	21.63	45.06	0.0005	0.033	8.574	21.42
16	D17-D21	21	100	11301	10508	10.50	106.62	117.12	244.01	0.0059	0.123	8.698	21.32
17	D21-D33	56	100	2880	550	0.75	135.87	106.62	222.13	0.0049	0.275	8.955	21.05
18	D33-D34	35	100	29809	28477	28.47	0.00	28.47	59.32	0.0004	0.015	8.970	21.03
19	D33-D32	70	100	17999	16329	16.33	62.07	77.40	161.25	0.0027	0.190	9.145	20.85
20	D32-D31	27	100	12487	11408	11.41	0.00	11.41	23.77	0.0001	0.002	9.147	20.85
21	D32- D29	91	100	11642	9215	9.22	41.35	50.06	105.55	0.0013	0.026	9.221	20.78
22	D29- D25	67	100	21262	18706	18.71	0.00	18.71	38.97	0.0009	0.013	9.234	20.77
23	D29-D28	112	100	23600	19394	19.39	3.25	22.64	47.17	0.0008	0.021	9.255	20.75
24	D28-D27	220	100	59892	0	0.00	3.25	3.25	6.77	0.0000	0.000	9.255	20.75
25	D27- D26	48	100	5081	3250	3.25	0.00	3.25	6.77	0.0000	0.000	9.255	20.75
26	82D2- D1	31	400	1182	0	0.00	4335.97	4335.97	9033.26	0.0055	0.170	0.772	25.23
27	82D1-82F2	67	400	14792	12236	12.23	4323.72	4335.97	9033.26	0.0055	0.368	1.140	24.86
28	82F2- F7	58	300	8088	0	0.00	1874.82	1874.82	3905.88	0.0047	0.270	1.569	24.60

Sheet No:- 1

Xy consultants Pvt Ltd

Design of Pipe Line

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total water Demand - Total Recreational Water Demand)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Terminal Head
						self	previous	total	70 HRS				
		m	mm	L	l	KLD	KLD	KLD	LPM	m	m	m	m
29	T7-T20	87	200	30996	32917	32.92	0.00	32.92	68.58	0.0006	0.049	1.448	28.55
30	T7-T23	21	100	12173	11372	11.37	0.00	11.37	23.69	0.0001	0.002	1.40	28.60
31	T7- T6	136	300	40119	34911	34.93	1795.69	1830.62	3813.61	0.0045	0.614	3.013	27.99
32	T8-T23	51	200	9046	6986	6.99	30.27	37.26	77.63	0.0007	0.038	2.051	27.95
33	T23-T24	117	100	34737	30274	30.27	0.00	30.27	63.07	0.0005	0.056	2.107	27.89
34	T6-T21	36	100	9103	6986	6.99	2.33	9.32	19.41	0.0001	0.003	2.016	27.98
35	T21-T22	11	100	2748	2325	2.33	0.00	2.33	4.85	0.0000	0.000	2.016	27.98
36	T6- T5	61	300	55827	50000	50.00	1693.03	1743.03	3633.81	0.0041	0.254	2.266	27.73
37	T5-T20	28	100	5250	4182	4.18	16.47	20.65	43.03	0.0002	0.007	2.272	27.73
38	T20-T21	88	100	19829	16472	16.47	0.00	16.47	34.32	0.0002	0.014	2.286	27.71
39	T5- T4	53	250	6679	5658	4.96	1673.72	1678.37	3496.01	0.0009	0.048	2.761	27.24
40	T4-T3	9	250	2672	2329	2.33	1671.39	1673.72	3486.01	0.0009	0.008	2.844	27.16
41	T3-T12	41	100	10165	6986	6.99	0.00	6.99	0.00 14.55	0.0010	0.001	2.846	27.15
42	T3-T15	170	100	67072	60548	60.55	34.39	94.94	197.79	0.0040	0.674	3.518	26.48
43	T15-T16	55	100	9084	6986	6.99	27.41	34.39	71.65	0.0006	0.038	3.552	26.45
44	T16-T17	22	100	839	0	0.00	0.00	0.00	0.00	0.0000	0.000	3.552	26.45
45	T16-T18	12	100	458	0	0.00	27.41	27.41	57.10	0.0001	0.005	3.557	26.44
46	T18-T19	28	100	10002	9013	9.02	0.00	9.02	19.45	0.0001	0.003	3.558	26.44
47	T18-T11	86	100	35972	31193	31.19	0.00	15.09	37.69	0.0002	0.016	3.572	26.43
48	P3-P2	40	250	8855	6986	6.99	1562.47	1569.46	0.00 3269.71	0.0002	0.004	3.218	26.25
49	T2-T14	170	100	50731	44246	44.25	6.99	51.23	106.73	0.0013	0.215	3.464	26.54
50	T14-T15	57	100	9160	6986	6.99	0.00	6.99	14.55	0.0000	0.003	3.468	26.53
51	T2- T1	54	250	18812	16752	16.75	1494.49	1511.24	3148.42	0.0017	0.415	3.686	26.34
52	T1-P9	104	100	80650	79278	79.27	18.63	97.91	203.96	0.0042	0.814	4.478	25.52
53	T9-T8	66	100	21148	18630	18.63	0.00	18.63	38.81	0.0002	0.013	4.491	25.51

Sheet No: 2

Key roads Link Pvt Ltd

Design of Pipe Line

Sr.No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total Water Demand - Total Saturday Water Demand)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Terminal Head
						self	previous	total	20 HRS				
		M	mm		L	KLD	KLD	KLD	LPM	m	m	m	m
54	B1- B7	66	250	16490	13073	19.97	1382.62	1296.59	2909.56	0.0066	0.439	4.102	25.90
55	B7- B8	55	100	29979	27500	29.58	14.66	12.16	81.83	0.0009	0.057	4.160	25.84
56	B8-B33	47	100	20971	14658	14.06	0.00	11.66	30.54	0.0001	0.005	4.165	25.84
57	B7- B5	105	250	47726	23288	25.59	1417.17	1340.46	2292.62	0.0062	1.201	5.365	24.70
58	B5- B4	15	100	572	0	0.00	175.26	175.26	365.63	0.0123	0.185	5.488	24.51
59	B4- B21	211	100	25892	27845	27.95	0.00	27.95	58.32	0.0004	0.087	5.575	24.42
60	B4-B3	51	100	20600	18630	18.63	128.68	147.32	306.81	0.0039	0.485	5.971	24.03
61	B3- B23	222	100	93249	90745	90.74	19.32	110.06	229.29	0.0052	1.163	7.134	22.87
62	B23- B24	53	100	21415	19315	19.32	0.00	19.32	40.24	0.0002	0.011	7.146	22.85
63	B2-B2	57	100	20804	18630	18.63	0.00	18.63	38.81	0.0002	0.011	7.157	22.84
64	B5-B6	73	250	5748	0	0.00	1141.91	1121.91	2378.08	0.0048	0.350	5.633	24.37
65	B6- B7	91	100	75441	71973	71.97	0.00	71.97	149.94	0.0021	0.216	5.849	24.15
66	B6- B5	6	250	229	0	0.00	1069.94	1069.94	2229.03	0.0061	0.034	5.637	24.51
67	B5-B15	125	100	16412	11644	11.64	39.42	71.06	148.04	0.0029	0.290	5.947	24.05
68	B15-B20	151	100	32047	27288	27.29	13.50	40.79	84.97	0.0009	0.125	6.072	23.93
69	B20-B19	62	100	28356	13500	13.50	0.00	13.50	28.13	0.0001	0.007	6.079	23.92
70	B16-B14	54	100	20690	18630	18.63	0.00	18.63	38.81	0.0002	0.010	5.937	24.04
71	B5- B4	54	250	18361	16301	16.30	982.57	998.88	2080.99	0.0056	0.193	5.950	24.15
72	B14-B18	126	100	37409	32603	32.60	108.06	140.66	293.04	0.0082	1.035	6.855	23.12
73	B14-B19	175	100	76538	69863	69.86	18.57	89.43	186.31	0.0035	0.621	7.306	22.49
74	B20- B18	88	100	22922	19565	19.57	0.00	19.57	40.76	0.0002	0.019	7.325	22.46
75	B14- B12	57	100	20690	18630	18.63	0.00	18.63	38.81	0.0002	0.011	6.826	24.10
76	B4- B3	57	250	18475	16301	16.30	825.61	841.91	1753.99	0.0072	0.440	7.290	23.71
77	B3-B2	08	100	7251	4658	4.66	23.91	28.57	59.52	0.0004	0.022	6.316	23.88

Sheet No- 3

Sr corrections Pvt Ltd

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total Water Demand - 20% Agricultural Water Demand)	Design of Pipe Line							
						Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Terminal Head
						self	previous	w.s.	20 LPS				
		m	mm	L	L	KLD	KLD	KLD	LPM	m	m	m	m
79	BJ- BJ	67	100	26168	23912	23.91	0.00	23.91	49.82	0.0003	0.021	6.340	23.65
	-												
79	F1- F2	21	100	5439	4658	3.66	86.19	90.85	189.27	0.0037	0.077	6.366	23.63
80	BJ-BJ	80	100	3407	1500	1.50	84.69	86.19	179.56	0.0033	0.166	6.532	23.47
81	BJ6-B1	87	100	16750	43433	43.43	0.00	43.43	90.48	0.0009	0.081	6.613	23.39
82	BJ6- B1	55	100	2038	0	0.00	41.26	41.26	85.96	0.0008	0.047	6.579	23.42
84	B1-BJ5	184	100	14082	6986	6.99	34.27	41.26	85.96	0.0008	0.156	6.735	23.27
84	BJ5- BJ6	118	100	65788	22287	22.29	11.99	34.27	71.40	0.0006	0.071	6.806	23.19
85	BJ6- BJ7	16	100	10268	9658	9.66	0.00	9.66	20.12	0.0001	0.001	6.807	23.19
86	BJ6-B18	15	100	2825	2329	2.33	0.00	2.33	4.85	0.0000	0.000	6.806	23.19
	-												
87	B3- T12	327	200	28133	23288	23.29	682.91	706.20	1471.24	0.0056	0.709	6.997	23.00
88	B12- B18	325	100	42028	37360	37.36	0.00	37.36	77.83	0.0007	0.088	7.085	22.91
89	B12- E11	59	300	20060	18630	18.63	627.02	645.65	1345.10	0.0047	0.255	7.253	22.75
90	E11-E11	94	100	36823	33274	33.27	0.00	33.27	69.32	0.0006	0.053	7.305	22.69
91	E13-E17	151	300	59492	53733	53.73	537.68	591.42	1232.11	0.0040	0.606	7.856	22.14
92	BJ1- E27	6	100	2358	2329	2.33	0.00	2.33	4.85	0.0000	0.000	7.857	22.75
	-								0.00				
94	E17-E16	68	200	9254	6750	6.75	530.93	537.68	1120.17	0.0034	0.229	8.087	21.91
96	E16- E10	249	200	65484	54866	54.87	496.07	550.93	1106.11	0.0033	0.818	8.905	21.09
	-												
	SECTOR 82A-												
95	B2E10-82A1	73	200	2785	0	0.00	496.07	496.07	1033.47	0.0029	0.212	9.117	20.88
96	A1-A55	510	150	144245	77500	77.50	0.00	77.50	161.46	0.0004	0.042	9.158	20.84
	-												
97	A7-A7	56	300	4636	2500	2.50	34.27	36.77	76.61	0.0007	0.038	9.196	20.80
98	A7-A64	251	200	9680	0	0.00	34.27	34.27	71.40	0.0006	0.153	9.348	20.65
99	A61-A13	81	100	48509	0	0.00	34.27	34.27	71.40	0.0006	0.049	9.396	20.64
100	A43-A62	11	300	426	0	0.00	34.27	34.27	71.40	0.0006	0.007	9.403	20.64
101	A62-A44	65	300	12794	9315	9.32	0.00	9.32	19.41	0.0001	0.004	9.366	20.63
102	A62-A63	70	200	6670	4000	4.00	20.96	24.96	52.00	0.0003	0.023	9.388	20.61
103	A63-A15	20	300	5420	4658	4.66	0.00	4.66	9.70	0.0000	0.000	9.387	20.61
104	A63-A48	41	300	17865	16301	16.30	0.00	16.30	33.96	0.0002	0.009	9.396	20.61
	-												
105	A1-A2	56	250	6791	1658	4.66	377.14	381.79	795.40	0.0072	0.408	9.522	20.48
106	A2-A1	6	250	328	0	0.00	377.14	377.14	785.70	0.0071	0.042	9.563	20.44

Design of Pipe Line

Sr. No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total Water Demand - Total Industrial Water Demand)	Net Water Demand			Total Water Demand	Head Loss 'm'	Total Head Loss	Head Loss Progressive	Terminal Head
						self	previous	tot.					
		m	mm	l	KLD	KLD	KLD	KLD	LPM	ω	m	m	m
107	A1-A58	71	150	7823	5000	5.00	372.14	377.14	786.70	0.0071	0.524	10.000	10.91
108	A58-A5	95	150	29240	25616	25.62	346.52	372.14	775.38	0.0060	0.686	10.745	10.26
109	A9-A8	16	100	3015	2329	2.33	0.00	2.33	4.85	0.0001	0.000	10.745	9.26
110	A5-A10	67	150	6528	13973	13.97	330.22	344.19	717.06	0.0060	0.401	11.146	18.85
111	A10-A23	88	100	40172	39815	39.82	87.80	127.37	265.33	0.0008	0.601	11.746	18.25
112	A22-A29	88	100	7185	3820	3.83	83.67	87.50	182.28	0.0004	0.308	12.054	17.95
113	A22-A24	107	100	34081	10000	10.00	73.67	83.67	174.31	0.0031	0.536	12.589	17.62
114	A24-A25	94	100	29520	27079	27.08	46.59	73.67	153.37	0.0025	0.389	12.941	17.46
115	A25-A26	74	100	28439	25616	25.62	20.97	46.59	97.06	0.0011	0.079	13.019	17.36
116	A26-A27	73	100	2783	0	0.00	20.97	20.97	43.68	0.0009	0.018	13.037	17.34
117	A27-A28	80	100	24021	20973	20.97	0.00	20.97	43.65	0.0002	0.019	13.056	17.31
118	A28-A14	106	150	17903	13973	13.97	188.95	202.91	422.72	0.0022	0.231	13.287	18.62
119	A14-A59	71	100	5208	2500	2.50	14.32	16.82	35.03	0.0003	0.021	13.308	18.61
120	A59-A60	44	100	15997	14313	14.32	0.00	14.32	29.82	0.0001	0.005	13.313	18.61
121	A16-A15	25	150	3282	2329	2.33	169.79	172.12	358.58	0.0017	0.041	13.475	18.59
122	A15-A16	76	100	16200	16030	16.30	0.00	16.30	33.96	0.0002	0.012	13.488	18.57
123	A15-A20	29	150	5535	4658	4.66	148.89	153.49	319.77	0.0013	0.031	13.519	18.55
124	A20-A21	29	100	5582	4658	4.66	0.00	4.66	9.70	0.0000	0.000	13.519	18.55
125	A20-A16	70	150	17643	13973	13.97	130.20	144.17	300.36	0.0013	0.084	13.602	18.47
126	A16-A17	39	150	8471	6986	6.99	123.72	130.20	271.25	0.0021	0.273	13.875	18.19
127	A17-A18	17	100	10420	10000	10.00	0.00	10.00	20.83	0.0001	0.001	13.877	18.19
128	A17-A3	74	100	14466	11924	11.84	101.55	113.22	235.86	0.0055	0.407	14.284	17.78
129	A3-A60	97	100	17672	13973	13.97	0.00	13.97	29.11	0.0001	0.011	14.295	18.47
130	A3-A6	71	100	2708	0	0.00	87.60	87.60	182.50	0.0034	0.243	14.538	18.54
131	A6-A37	13	100	496	0	0.00	15.32	15.32	31.91	0.0001	0.002	14.541	17.54
132	A37-A57	42	100	6902	5000	5.00	0.00	5.00	10.42	0.0000	0.001	14.542	17.54
133	A37-A36	10	100	1144	0	0.00	10.32	10.32	21.49	0.0001	0.002	14.544	17.53
134	A36-A35	50	100	12222	10315	10.32	0.00	10.32	21.49	0.0001	0.003	14.546	17.53

Design of Pipe Line

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total Water Demand - Net Particular Water Consumption)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Effective Head Loss (Head Loss - Static Head)	Terminal Head
						self	previous	total	90 PHS				
		m	mm	L	L	KLD	KLD	KLD	LPM	m	m	m	m
129	A0-A32	49	100	10498	4658	4.66	67.03	72.28	150.59	0.0024	0.103	12.562	17.44
130	A32-A31	55	100	11413	9532	9.52	41.59	50.98	106.05	0.0019	0.069	12.531	17.37
137	A32-A36	54	100	14454	12394	12.39	4.33	16.72	34.84	0.0002	0.009	12.571	17.43
138	A35-A33	49	100	6698	4333	4.33	0.00	4.33	9.02	0.0000	0.001	12.571	17.43
139	A31-A49	28	100	7726	6658	6.66	0.00	6.66	13.87	0.0000	0.000	12.632	17.37
140	82A31-82A32	77	100	30882	27945	27.95	6.99	34.95	72.77	0.0006	0.048	12.679	17.32
141	82A31-82A31	25	100	7940	6986	6.99	0.00	6.99	14.55	0.0000	0.001	12.680	17.32
142	P25-P27	36	400	9488	4658	4.66	2444.25	2448.91	5101.89	0.0019	0.093	1.231	28.77
143	P27-P28	149	100	59016	51283	51.28	21.80	73.08	152.15	0.0024	0.364	1.595	28.41
144	P28-P31	15	100	7482	6986	6.99	0.00	6.99	14.55	0.0000	0.000	1.595	28.41
145	P28-P35	91	100	9327	1000	1.00	13.82	14.82	30.86	0.0001	0.008	1.602	28.40
146	P35-D34	41	100	15275	13815	13.82	0.00	13.82	28.78	0.0001	0.005	1.607	28.39
147	D27- D32	47	250	18293	16509	16.50	2358.71	2371.21	4940.02	0.0034	0.162	1.362	28.61
148	D32-D38	33	250	14008	11586	11.59	2342.74	2354.33	4905.06	0.0034	0.110	.572	28.49
149	D38-D39	62	100	2365	0	0.00	17.72	17.72	36.92	0.0002	0.011	1.583	28.42
150	D39-D40	47	100	19515	17733	17.72	0.00	17.72	36.92	0.0002	0.008	1.592	28.41
151	D38- D20	180	350	48784	41918	41.92	2288.09	2325.01	4843.76	0.0033	0.597	2.170	27.85
152	82D20-82P30	51	250	7945	6000	6.00	525.43	531.43	1107.14	0.0011	0.057	2.226	27.77
153	P30-P31	25	100	5532	4559	4.56	0.00	4.56	9.51	0.0000	0.000	2.227	27.77
154	P30-C8	61	200	6027	4000	4.00	516.85	520.85	1085.10	0.0002	0.013	2.429	27.58
155	C8-C29	62	100	18337	15973	15.97	0.00	15.97	33.28	0.0001	0.009	2.429	27.57
156	C8-C18	38	200	3473	2929	2.93	488.55	500.58	1043.49	0.0029	0.088	2.508	27.49
157	C18- C7	26	200	3321	2929	2.93	496.22	499.55	1038.64	0.0029	0.076	2.584	27.42
158	C7-C27	62	300	23889	21486	21.49	474.72	496.22	1033.59	0.0020	0.133	2.767	27.23
159	C27-C25	125	200	9268	4500	4.50	470.23	474.73	989.02	0.0027	0.334	3.101	26.90
160	C25-C26	69	200	14276	11644	11.64	458.59	470.23	979.65	0.0026	0.181	3.282	26.72
161	C26-C27	31	100	30291	9315	9.32	0.00	9.32	19.41	0.0001	0.003	3.285	26.72
162	C26-C45	39	200	9556	2250	2.25	441.03	448.28	934.08	0.0024	0.070	3.355	26.65
163	C45-C44	38	200	2159	750	0.75	446.28	447.03	931.50	0.0024	0.091	3.446	26.55
164	C44-C42	57	150	25712	21588	21.54	422.74	444.28	929.78	0.0057	0.551	3.998	26.01

Design of Pipe Line

Sr No	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Only Water Demand Not Domestic Water Demand)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Terminal Head
						self	previous	total	30 HRS				
		m	mm	L	L	KLD	KLD	KLD	LPM	m	m	m	m
165	C42-C43	57	100	2174	0	0.00	8.09	8.09	18.72	0.0001	0.005	3.007	36.60
166	C43-C13	36	100	10359	8986	8.09	0.00	8.09	18.72	0.0001	0.002	3.009	36.60
167	C42-C24	91	150	20036	16505	16.57	397.19	413.75	861.98	0.0009	0.765	4.759	35.24
168	C24- C22	36	150	3872	2500	2.50	394.69	397.19	827.47	0.0008	0.281	5.039	34.96
169	C22- C21	61	150	14518	6986	6.99	387.70	394.69	822.26	0.0007	0.459	5.498	34.50
170	C21-C21	10	100	2710	2339	2.35	0.00	2.35	4.85	0.0000	0.000	5.498	34.50
171	C21-C1	170	150	52166	45085	45.08	339.69	385.37	802.86	0.0074	1.255	6.753	33.22
172	C1-B35	61	100	4770	2509	2.35	24.49	26.82	55.86	0.0004	0.024	6.809	33.19
173	B35- C2	27	100	3550	1500	1.50	21.74	23.24	48.41	0.0003	0.008	6.817	33.18
174	C2- C4	82	100	24065	21736	21.74	0.00	21.74	45.28	0.0003	0.016	6.833	33.17
175	P35-P32	95	100	3885	1250	1.25	0.00	1.25	2.60	0.0000	0.000	6.809	33.12
176	C1- B11	66	150	9504	6986	6.99	305.89	312.88	651.82	0.0050	0.231	7.115	32.88
177	B11-B12	124	100	67452	62733	62.73	0.00	62.73	130.67	0.0013	0.229	7.344	32.66
178	B11-B10	34	100	23019	20959	20.96	322.21	343.17	906.80	0.0226	1.252	8.598	31.66
179	B10-P32	92	100	14574	11068	11.07	0.00	11.07	23.05	0.0003	0.007	8.944	31.66
180	B10- B9	56	100	16701	14565	14.57	196.58	211.14	439.88	0.0174	0.976	9.919	30.69
181	B9- B31	62	100	41601	6986	6.99	189.59	195.58	409.91	0.0152	0.946	10.865	29.74
182	B31- B33	11	100	6221	4658	4.66	0.00	4.66	9.70	0.0000	0.001	10.866	29.74
183	B31- B33	7	100	267	0	0.00	184.93	184.93	385.28	0.0138	0.095	10.961	29.64
184	B32- B35	118	100	40432	35931	35.93	0.00	35.93	74.86	0.0037	0.437	11.398	29.20
185	B32-B25	68	100	18132	16501	16.50	132.70	149.20	310.42	0.0091	0.619	12.017	28.58
186	B25- B23	73	100	28386	25618	25.62	0.00	25.62	53.37	0.0014	0.105	12.122	28.48
187	B25- B26	11	100	420	0	0.00	107.02	107.02	223.00	0.0058	0.064	12.186	28.42
188	B26- B34	126	100	37936	32130	33.13	0.00	33.13	69.02	0.0036	0.454	12.640	27.96
189	B26- B27	47	100	11608	9815	9.82	64.14	73.96	154.07	0.0025	0.117	12.757	27.85
190	B27- B28	89	100	29791	26966	26.97	0.00	26.97	56.20	0.0015	0.134	12.891	27.71
191	B27- B22	57	100	2174	0	0.00	37.77	37.77	78.70	0.0007	0.041	12.932	27.67
192	B28-B22-B2B21	87	100	41892	37774	37.77	0.00	37.77	78.70	0.0007	0.063	12.995	27.61

Sheet No: 7

Jay consultants Pvt Ltd

Design of Pipe Line

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Cost Water Demand - Total Hydrostatic Water Pressure)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progression	Terminal Head
						self	previous	total	20 HRS				
		m	mm	L		KLD	KLD	KLD	LPM	m	m	m	m
193	S2D170	69	200	5132	2500	2.50	1748.38	1751.08	3649.29	0.0012	0.387	2.457	27.54
194	D22- D24	75	100	19162	16301	16.30	0.00	16.30	33.96	0.0005	0.011	2.468	27.53
195	D23-D26	144	300	2212	1750	1.75	1731.11	1732.86	3610.12	0.0041	0.587	3.044	26.96
196	D26-S2D216	27	350	1039	0	0.00	1731.11	1731.11	3606.48	0.0009	0.067	3.111	26.89
197	S2C18-S2C52	237	150	76510	64259	64.27	460.76	524.99	1093.72	0.0131	3.835	6.946	23.05
198	C52-C53	81	100	3090	0	0.00	54.98	54.98	114.55	0.0014	0.119	6.262	23.74
199	C53-C54	118	100	80216	54983	54.98	0.00	54.98	114.55	0.0014	0.169	6.261	23.54
200	C38-C28	24	150	915	0	0.00	405.77	405.77	845.36	0.0081	0.195	6.341	23.66
201	C38-C40	38	100	9809	4579	4.58	0.00	4.58	9.54	0.0000	0.001	6.342	23.66
202	C28-C36	81	150	3204	0	0.00	401.20	401.20	835.82	0.0079	0.667	7.009	22.99
203	C36-C14	119	100	57805	49681	49.68	0.00	49.68	103.50	0.0012	0.178	7.188	22.81
204	C36-C35	60	150	2289	0	0.00	351.51	351.51	732.32	0.0062	0.373	7.560	22.63
205	C35-C12	155	100	78153	72136	72.13	0.00	72.13	150.26	0.0024	0.377	7.937	22.34
206	C35-C50	72	150	10486	0	0.00	279.39	279.39	582.06	0.0041	0.292	7.672	22.66
207	C50-C51	49	100	28835	25801	25.80	0.00	25.80	53.75	0.0004	0.028	7.700	22.30
208	C50-C33	66	100	2518	0	0.00	11.74	11.74	24.45	0.0001	0.005	7.675	22.32
209	C33-C48	137	100	25462	11736	11.74	0.00	11.74	24.45	0.0001	0.011	7.686	22.31
210	C50-C34	89	100	21208	6563	6.56	255.29	341.85	502.86	0.0024	1.594	9.687	20.33
211	C34-S37	87	100	53919	50000	50.00	150.00	200.00	416.67	0.0158	1.373	11.060	18.96
212	A17-B12	100	100	153814	150000	150.00	0.00	150.00	312.50	0.0093	0.925	11.985	18.08
213	C34-C31	56	100	90405	0	0.00	35.29	35.29	73.52	0.0006	0.036	9.702	20.30
214	C31-C32	58	100	12071	10746	10.74	0.00	10.74	22.37	0.0001	0.002	9.705	20.30
215	C31-C30	59	100	9257	6986	6.99	17.57	24.55	51.15	0.0006	0.019	9.721	20.28
216	C30-C30	10	100	2710	2329	2.33	0.00	2.33	4.85	0.0000	0.000	9.721	20.28
217	S2C30-S2C49	52	100	17220	15236	15.24	0.00	15.24	31.74	0.0001	0.007	9.728	20.27
218	S2C30-S2C18	43	250	7469	5829	5.83	1200.29	1206.12	2512.75	0.0051	0.218	9.509	20.47

Design of Pipe Line

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total Water Demand - Total Recirculation Water Demand)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Terminal Head
						self	previous	total	30 HRS				
		m	mm	L	–	KLD	KLD	KLD	LPM	m	m	m	m
219	C18-C20	81	250	9000	0	0.00	1200.29	1200.29	2500.61	0.0050	0.407	1.935	26.06
220	B2C20-B2C54	135	250	5150	0	0.00	1200.29	1200.29	2500.61	0.0050	0.678	2.613	25.38
221	B2C54-B3C41	55	100	49630	39233	19.22	0.00	19.22	40.05	0.0002	0.011	2.626	25.37
222	B3C41-B3B28	71	250	2708	0	0.00	1181.07	1181.07	2460.56	0.0049	0.346	2.959	25.03
223	B26-B25	30	250	1144	0	0.00	1181.07	1181.07	2460.56	0.0049	0.146	3.105	24.90
224	B25-B21	75	250	29261	12150	12.15	1168.92	1181.07	2460.56	0.0049	0.368	3.473	24.53
225	B21-B20	45	250	4571	0	0.00	1155.85	1155.85	2407.40	0.0047	0.211	3.684	24.32
226	B21-B29	51	100	19449	13305	13.37	0.00	13.37	27.84	0.0001	0.005	3.689	24.31
227	B20-B24	48	100	34701	21870	21.87	0.00	21.87	45.56	0.0003	0.015	3.704	24.29
228	B24-B30	94	100	42146	37065	37.07	0.00	37.07	28.47	0.0007	0.067	3.771	24.23
229	B29-B30	90	100	1526	0	0.00	0.00	0.00	0.00	0.0000	0.000	3.475	24.52
230	B2C-B30	47	300	4214	0	0.00	1096.02	1096.02	2285.27	0.0125	0.591	6.272	23.73
231	B30-B31	133	100	63008	57105	57.11	0.00	57.11	118.97	0.0015	0.206	6.477	23.52
232	B30-B31	40	100	1526	0	0.00	0.00	0.00	0.00	0.0000	0.000	6.477	23.52
233	B18-B18	41	200	2607	0	0.00	1008.91	1008.91	2364.48	0.0114	0.467	6.759	23.26
234	B18-B23	156	150	75041	68040	68.04	427.50	495.54	1032.37	0.0113	1.831	8.590	21.43
235	B18-B17	25	200	3728	2100	2.10	541.38	543.38	1132.03	0.0094	0.089	6.828	23.17
236	B17-B22	75	100	25946	23085	23.09	0.00	23.09	48.09	0.0003	0.022	6.850	23.15
237	B17-B34	167	100	89059	75330	75.33	0.00	75.33	156.94	0.0026	0.431	7.281	22.72
238	B33-B21	36	150	36873	29000	29.00	402.50	427.50	890.62	0.0089	0.321	8.821	21.41
239	B17-B16	52	150	9046	0	0.00	442.86	442.86	922.63	0.0095	0.496	7.324	22.66
240	B16-B35	190	100	89406	81405	81.41	0.00	81.41	169.59	0.0030	0.567	7.890	22.11
241	B34-B35	37	150	1411	0	0.00	402.50	402.50	838.54	0.0080	0.296	8.187	20.81
242	B16-B15	37	150	10691	8505	8.51	326.32	334.73	697.58	0.0057	0.210	7.534	22.67
243	B10-B22	59	100	29981	26750	26.73	0.00	26.73	55.69	0.0004	0.022	7.346	22.65
244	B15-B36	170	100	59523	52810	52.81	0.00	52.81	110.02	0.0013	0.226	7.769	22.23
245	B35-B36	39	150	1488	0	0.00	402.50	402.50	838.54	0.0080	0.311	8.498	20.50
246	B36-C1	62	150	2865	500	0.50	402.00	402.50	838.54	0.0080	0.495	8.993	20.01

Design of Pipe Line

Sr No	Name of Node	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Govt Water Demand + Total Stormwater Water Demand)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Terminal Head
						self	previous	total	At HRS				
		m	mm	L	l	KLD	KLD	KLD	LPM	m	m	m	m
247	B13-B14	82	150	2352	950	8.75	272.66	272.41	500.80	0.0039	0.194	9.698	22.30
248	B14-B5	52	150	25270	22288	22.20	249.37	272.86	508.04	0.0039	0.203	9.859	22.10
249	B7-B12	38	100	13093	1614	11.64	0.00	17.64	24.26	0.0001	0.005	7.903	22.49
250	B7-B8	67	150	3556	0	0.00	237.75	237.75	495.27	0.0030	0.202	8.101	21.90
251	B8-B11	58	100	20842	18630	18.63	0.00	18.63	38.81	0.0002	0.01	8.113	21.89
252	B6-B5	32	150	1231	0	0.00	219.10	219.10	456.46	0.0026	0.083	8.196	21.80
253	B6-B10	38	100	24737	23288	23.29	0.00	23.29	48.52	0.0003	0.011	8.207	21.71
254	B5-B4	48	150	1851	0	0.00	195.81	195.81	407.94	0.0021	0.101	8.308	21.71
255	B4-B9	38	100	13093	11614	11.64	0.00	11.64	24.26	0.0001	0.004	8.313	21.66
256	B4-B3	31	150	3511	2329	2.33	181.83	181.17	383.68	0.0019	0.058	8.371	21.56
257	B3-B8	27	100	8026	6986	6.99	0.00	6.99	14.56	0.0000	0.001	8.374	21.57
258	B3-B2	65	150	60546	54500	54.50	120.35	174.85	364.28	0.0017	0.488	8.862	21.28
259	B2-B1	15	100	572	0	0.00	120.35	120.35	250.73	0.0062	0.092	8.954	21.28
260	B2-B1	136	100	35992	22304	22.39	97.96	120.35	250.73	0.0062	0.850	9.804	20.32
261	B5B1-B5A1	36	100	877	0	0.00	97.96	97.96	204.08	0.0042	0.097	9.900	20.22
262	A1-A7	35	100	59135	52000	52.00	0.00	52.00	108.33	0.0013	0.099	9.878	20.12
263	A2-A1	75	100	27196	25000	25.00	20.96	45.96	95.75	0.0010	0.098	9.858	20.16
264	A2-A4	56	100	5200	0	0.00	20.96	20.96	43.66	0.0002	0.023	9.863	20.14
265	A4-A5	97	100	32838	20959	20.96	0.00	20.96	43.66	0.0002	0.012	9.874	20.13
266	C1-C2	30	150	2144	1000	1.00	401.00	402.00	837.49	0.0080	0.239	10.232	19.77
267	C2-C15	29	100	1106	0	0.00	103.22	103.22	215.02	0.0049	0.144	10.367	19.63
268	C15-C19	57	100	28540	26366	26.37	0.00	26.37	54.93	0.0004	0.021	10.388	19.61
269	C15-C16	42	100	15842	13975	13.97	62.88	76.85	160.10	0.0023	0.132	10.520	19.50
270	C16-C18	50	100	13589	11644	11.64	0.00	11.64	24.26	0.0001	0.004	10.524	19.50
271	C16-C17	75	100	27162	16501	16.50	34.93	51.43	106.75	0.0015	0.095	10.619	19.41
272	C17-C19	99	100	38479	34991	34.93	0.00	34.93	72.77	0.0008	0.058	10.677	19.35
273	C3-B40	38	100	1144	0	0.00	106.10	106.10	221.09	0.0049	0.145	10.379	19.62
274	B40-B41	130	100	53879	48920	48.92	0.00	48.92	101.92	0.0018	0.151	10.530	19.47
275	B40-B45	141	100	62593	57175	57.18	0.00	57.18	119.11	0.0016	0.219	10.697	19.40
276	C2-C4	52	150	1984	0	0.00	191.69	191.69	399.35	0.0020	0.103	10.338	19.66
277	C4-C20	109	100	55061	50904	50.90	0.00	50.90	106.05	0.0013	0.136	10.474	19.53
278	C4-C5	28	150	877	0	0.00	140.78	140.78	293.30	0.0011	0.026	10.500	19.64

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Design of Pipe Line

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total Water Demand - Total Cumulative Water Demand)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Vertical Sheet
						self	previous	total	20 HRS				
		m	mm	L	L	KLD	KLD	KLD	LPM	m	m	m	m
279	C5-B37	28	100	24107	18225	18.23	31.72	49.95	104.06	0.0032	0.135	10.315	19.48
280	B37 T012	28	100	1068	0	0.00	31.72	31.72	66.09	0.0005	0.015	10.523	19.47
281	B38-T039	91	100	34211	31725	31.73	0.00	31.73	66.09	0.0005	0.049	10.582	19.43
282	C5-C6	78	300	2975	0	0.00	90.83	90.83	189.24	0.0037	0.285	10.615	19.35
283	C6-C7	68	100	11302	7364	7.36	25.02	33.38	69.12	0.0006	0.055	10.705	19.30
284	C7-C9	111	100	29850	25616	25.62	7.99	25.02	52.57	0.0004	0.039	10.744	19.26
285	C6-C9	45	100	12967	0	0.00	57.65	57.65	120.11	0.0016	0.071	10.720	19.28
286	C9-C10	95	100	3621	0	0.00	57.65	57.65	120.11	0.0016	0.150	10.870	19.13
287	C10-C14	77	100	42526	39589	39.59	0.00	39.59	82.48	0.0008	0.060	10.960	19.07
288	C10-C11	58	100	7212	5000	5.00	13.07	18.07	37.64	0.0002	0.011	10.886	19.12
289	C11-A31	90	100	13854	11565	11.57	0.00	11.57	24.09	0.0001	0.008	10.885	19.11
290	B5C11-B5C12	88	100	3712	1500	1.50	0.00	1.50	3.13	0.0000	0.000	10.880	19.12
				5969325	4658329								
291	C- B2D2	35	400	13821	12486	12.49	2640.37	2652.86	5526.78	0.0022	0.077	6.510	23.40
292	B2D2-D13	142	400	5427	0	0.00	2640.37	2640.37	5500.77	0.0022	0.313	6.824	23.18
293	D13-D12	22	400	829	0	0.00	2640.37	2640.37	5500.77	0.0022	0.048	6.872	23.15
294	B2P12-A3	225	400	8583	0	0.00	2640.37	2640.37	5500.77	0.0022	0.495	7.367	23.04
	SECTOR B3-												
295	A3-B3-A35	83	400	3166	0	0.00	2640.37	2640.37	5500.77	0.0022	0.182	7.549	23.46
296	A35-A39	77	350	25997	20000	20.00	2620.37	2640.37	5500.77	0.0041	0.315	7.865	23.18
297	A49-A50	160	350	30603	24500	24.50	2595.87	2620.37	5459.10	0.0041	0.662	8.528	22.87
298	A50-A42	155	100	30621	24709	24.71	0.00	24.71	51.48	0.0005	0.081	8.608	22.79
299	A50-A51	60	200	4789	2500	2.50	2568.66	2571.16	5356.59	0.0085	0.508	9.037	22.36
300	A51-A40	20	100	992	0	0.00	171.03	171.03	356.32	0.0118	0.309	8.349	22.46
301	A40-A28	41	100	7471	5908	5.91	165.13	171.03	356.32	0.0118	0.484	8.828	22.17
302	A28-A56	17	100	1648	1000	1.00	40.54	41.54	86.59	0.0009	0.015	8.842	22.15
303	A56-A57	155	100	48950	40538	40.54	0.00	40.54	84.45	0.0008	0.127	8.969	22.03
304	A35-A32	89	300	3053	0	0.00	123.59	123.59	257.48	0.0065	0.577	8.545	22.46

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Design of Pipe Line

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total Water Demand - Total Recreation Water Demand)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Bend Loss @ 0.05 per bend	Terminal Load
						self	previous	C/S					
		m	mm	l	L	KLD	KLD	KLD	LPM	m	m	m	m
305	A32-A31	104	100	24711	20620	20.63	24.21	44.84	93.41	0.0010	0.109	4.450	25.55
306	A31-A29	53	100	26230	24309	24.31	0.00	24.31	50.49	0.0003	0.017	4.467	25.53
307	A32-A33	82	300	74878	71790	71.75	7.00	78.75	104.06	0.0028	0.230	4.575	25.43
308	A33-A34	60	100	6289	4000	4.00	3.00	7.00	14.58	0.0000	0.000	4.577	25.42
309	A34-A31	58	100	3212	3000	3.00	0.00	3.00	6.95	0.0001	0.000	4.577	25.42
310	A31-A41	140	300	43128	26578	26.54	2271.09	2297.63	4265.06	0.0074	1.041	4.679	25.92
311	A41-B7	30	350	8131	6986	6.99	1021.59	1028.58	2142.87	0.0068	0.113	4.182	25.81
312	B7-B5	212	100	114539	81445	81.55	71.11	152.56	317.83	0.0085	0.024	6.235	23.78
313	B5-B4	48	100	1869	0	0.00	0.00	0.00	0.00	0.0000	0.000	6.235	23.78
314	B5-B15	83	100	11738	9915	9.92	61.80	71.11	148.15	0.0003	0.146	6.360	23.64
315	B15-B16	119	100	36063	30775	30.77	0.00	30.77	64.11	0.0005	0.059	6.420	23.58
316	B15-B17	58	100	34580	31021	31.02	0.00	31.02	64.63	0.0005	0.029	6.448	23.55
317	B7-B/A37	23	250	4456	3579	3.58	865.45	869.03	1810.49	0.0028	0.065	6.255	25.74
318	A37-B20	229	250	8755	0	0.00	865.45	865.45	1803.01	0.0027	0.627	4.883	25.12
319	B20-B21	60	200	87289	155000	155.00	710.45	865.45	1803.05	0.0081	0.487	5.370	24.62
320	B21-B27	159	100	30415	24380	24.38	102.27	126.65	263.86	0.0008	1.075	6.445	23.55
321	B27-B26	56	80	6715	4575	4.58	38.43	53.01	110.44	0.0013	0.075	6.521	23.48
322	B26-B28	95	150	52055	48431	48.43	0.00	48.43	100.90	0.0011	0.105	6.630	23.37
323	B27-B29	107	100	2271	18630	18.63	8.16	26.79	55.82	0.0004	0.041	6.486	23.51
324	B29-B30	7	100	3750	3503	3.50	0.00	3.50	7.30	0.0000	0.000	6.486	23.51
325	B29-B34	54	100	5954	4658	4.66	0.00	4.66	9.71	0.0000	0.001	6.486	23.51
326	B27-B33	90	100	37155	22472	22.47	0.00	22.47	46.82	0.0003	0.025	6.470	23.53
327	B33-B34	49	100	1869	0	0.00	0.00	0.00	0.00	0.0000	0.000	6.470	23.53
328	B34-B35	16	100	1755	0	0.00	0.00	0.00	0.00	0.0000	0.000	6.470	23.53
329	B21-B22	42	200	6189	4949	4.95	578.85	583.80	1216.26	0.0030	0.125	6.595	24.50

Design of Pipe Line

Sr No	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total Water Demand - Total Recirculated Water Demand)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Terminal Head
						self	previous	total	20 HRS				
		L	mm	L	L	KLD	KLD	KLD	LPM	m	m	m	m
330	P22-A22	75	200	2861	0	0.00	578.85	578.85	1205.85	0.0039	0.289	5.784	21.22
331	A22-A21	82	100	19785	16658	16.66	0.00	16.66	34.70	0.0002	0.015	5.797	21.20
332	A22-B22	33	150	1250	0	0.00	562.20	562.20	1171.24	0.0148	0.489	6.271	23.73
333	B22-B23	30	150	6644	5600	5.58	556.70	562.20	1171.24	0.0148	0.445	6.716	23.28
334	B23-B25	87	150	30397	29079	7.08	549.62	556.70	1159.38	0.0146	1.267	7.983	22.01
335	A11-A59	139	100	44790	39603	39.60	13.24	52.84	110.08	0.0015	0.182	8.166	21.83
336	A59-A60	207	100	17318	13246	13.24	0.00	13.24	27.58	0.0001	0.013	8.179	21.82
337	A14-A11	36	150	21516	19480	39.18	477.40	196.78	1094.95	0.0118	0.669	8.646	21.35
338	A13-A14	181	150	40864	40760	40.76	436.64	477.40	994.58	0.0110	1.983	10.629	20.37
339	A11-A13	29	100	15842	13973	13.97	0.00	13.97	29.11	0.0001	0.006	10.635	19.37
340	A10-A7	53	150	15984	13973	13.97	275.52	289.29	602.70	0.0043	0.230	10.859	19.14
341	A7-A9	95	100	36976	33353	33.35	0.00	33.35	69.48	0.0006	0.054	10.913	19.09
342	A7-A20	70	100	18643	13973	13.97	0.00	13.97	29.11	0.0001	0.008	10.867	19.13
343	A7-A8	56	150	20309	13973	13.97	214.02	228.00	474.99	0.0028	0.156	11.015	18.98
344	A8-A6	62	100	11503	9158	9.16	0.00	9.16	19.08	0.0001	0.003	11.018	18.98
345	A8-A4	22	100	69680	65758	65.75	0.00	65.75	136.98	0.0020	0.044	11.059	18.94
346	A4-A5	130	100	65207	56616	56.62	82.50	139.13	289.89	0.0060	1.601	12.660	17.38
347	A5-A2	93	100	85162	83500	83.50	0.00	83.50	173.95	0.0031	0.151	12.747	17.25
348	A10-A9	101	100	81150	44246	46.25	89.13	135.37	277.86	0.0074	1.347	14.095	15.92
349	A9-A6	51	100	19252	6986	6.99	98.62	45.62	95.03	0.0010	0.054	12.050	17.87
350	A6-A20	43	100	19955	18355	18.32	0.00	18.32	38.16	0.0002	0.008	12.058	17.90
351	A6-A5	58	100	19349	6986	6.99	13.33	20.32	42.32	0.0002	0.013	12.045	17.90
352	A5-A3	37	100	14743	13329	13.33	0.00	13.33	27.77	0.0001	0.004	12.047	17.88
353	A9-A12	50	100	19046	6986	6.99	36.52	65.51	98.65	0.0009	0.033	12.028	17.97
354	A12-A19	54	100	20532	18473	18.47	0.00	18.47	38.48	0.0002	0.010	12.039	17.96
355	A12-A13	51	100	19232	6986	6.99	11.07	18.05	37.61	0.0002	0.010	12.039	17.96
356	A13-A16	38	100	7857	6408	6.41	0.00	6.41	13.35	0.0000	0.000	12.039	17.96
357	183A13-83A18	25	100	5916	4658	4.66	0.00	4.66	9.71	0.0000	0.000	12.039	17.96

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total water Demand - Total Cumulative Water Saved)	Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Nominal Head
						self	previous	total	20 HRS				
		m	mm		L	KLD	KLD	KLD	LPM	m	m	m	m
368	A41-F4	20	350	7749	6986	6.99	1335.63	1342.61	2796.90	0.0062	0.124	4.502	35.961
366	E6-E8	211	150	77425	69270	69.38	293.72	363.09	756.45	0.0056	1.299	5.595	34.41
360	E4-F14	113	100	66858	62518	62.55	231.17	293.72	611.91	0.0321	3.628	9.223	30.78
361	E14-E15	56	100	5826	3490	3.49	227.68	231.17	481.60	0.0206	1.154	10.377	30.62
362	E12-F13	115	100	48881	44438	44.42	0.00	44.42	92.54	0.3010	0.112	10.489	30.51
363	E13-E11	28	100	7726	6838	6.66	176.61	183.28	381.80	0.0134	0.375	10.552	30.23
364	E11-F12	47	100	23173	21380	22.38	0.00	21.38	44.54	0.0100	0.010	10.564	30.24
365	L11-E10	50	100	1144	0	0.00	155.23	155.23	323.39	0.0099	0.299	10.548	18.95
366	F10-F2	100	100	71651	65548	65.55	26.95	92.51	192.72	0.0038	0.605	11.153	18.25
367	F2-B2	113	100	21269	20979	26.96	0.00	26.96	56.16	0.0004	0.044	11.597	18.20
368	F2-B1	35	100	1869	0	0.00	0.00	0.00	0.00	0.0000	0.000	11.633	18.55
369	E10-E8	40	100	10927	2908	4.91	57.81	62.72	130.66	0.0018	0.050	11.138	18.86
370	E8-E	200	100	69014	57811	57.81	0.00	57.81	120.44	0.0026	0.233	11.392	18.61
371	E1-B12	36	100	2136	0	0.00	0.00	0.00	0.00	0.0000	0.000	11.392	18.61
372	E6-A42	57	350	9648	8236	8.24	964.20	972.43	2025.98	0.0034	0.126	4.928	25.67
373	A42-A56	19	250	5153	4658	4.66	959.54	964.20	2008.74	0.0033	0.043	4.972	25.63
374	A56-55	89	100	30125	26959	26.96	0.00	26.96	56.16	0.0004	0.033	5.004	25.68
375	A56-A43	40	250	12262	6980	6.99	925.59	932.58	1942.88	0.0021	0.126	5.497	25.50
376	A43-A38	55	100	14253	12158	12.16	0.00	12.16	25.33	0.0001	0.005	5.502	25.50
377	A43-A57	9	250	845	500	0.50	912.91	913.41	1902.99	0.0030	0.027	5.529	25.48
378	A57-A44	49	250	16597	14725	14.72	898.21	912.94	1901.95	0.0030	0.148	5.677	25.33
379	A44-A54	100	300	25273	21459	21.46	0.00	21.46	44.71	0.0003	0.025	5.702	25.30
380	A44-B3	209	100	72691	59729	59.72	0.00	59.72	124.41	0.0017	0.355	6.057	24.98
381	A11-A45	55	250	16070	13972	13.97	803.06	817.04	1702.16	0.0025	0.135	6.608	25.19
382	A45-A48	71	100	12366	9638	9.66	26.21	35.87	74.72	0.0007	0.049	6.655	25.15
383	A46-B1	37	100	12739	10565	10.57	0.00	10.57	22.01	0.0001	0.004	6.658	25.14

Design of Pipe Line

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Max. Water Demand (Total Water Demand + Total Horticulture Water Demand)	Max Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Compressure	Terminal Head
						KLD	per sec	total KLD	20 HRS LPM	m	m	m	m
384	A16-A47	55	150	17037	15644	15.64	0.00	15.64	32.59	0.0001	0.007	4.993	22.14
385	A45-B12	208	250	45409	20115	26.32	737.88	757.20	1578.33	0.0022	0.150	5.264	24.72
386	B12-B12	24	250	5373	4658	4.66	733.22	737.88	1537.26	0.0020	0.049	5.313	24.69
387	B12-C10	206	150	39145	31288	31.29	254.99	286.28	596.12	0.0045	0.875	6.188	23.81
388	C10-C11	64	100	14065	11641	11.64	0.00	11.64	24.26	0.0001	0.005	6.193	23.81
389	C10-C7	30	100	5454	6258	6.25	237.10	243.35	506.98	0.0027	1.904	8.097	21.91
390	C7-C8	29	100	31106	10000	0.00	194.25	206.25	425.51	0.0164	0.475	8.557	21.42
391	C8-C12	120	100	108824	194248	194.25	0.00	194.25	404.68	0.0149	1.792	10.349	19.61
392	C7-C6	55	100	2148	250	0.25	32.60	32.85	68.44	0.0006	0.031	8.123	21.88
393	C6-C12	182	100	58295	32602	32.60	0.00	32.60	67.92	0.0005	0.100	8.222	21.78
394	D12-B15	25	150	877	0	0.00	446.95	446.95	931.14	0.0097	0.239	5.536	24.46
395	B13-B14	43	150	15120	10486	10.49	436.46	446.95	931.14	0.0097	0.417	5.953	24.05
396	B14-B17	46	150	17162	15483	15.41	421.05	436.46	909.29	0.0094	0.427	6.380	23.62
397	B17-B27	8	150	805	0	0.00	421.05	421.05	877.19	0.0087	0.069	6.449	23.55
398	B27-B19	56	150	14544	12408	12.41	408.64	421.05	877.19	0.0087	0.486	6.935	23.06
399	B19-B21	40	150	7930	6408	6.41	402.24	408.64	851.34	0.0082	0.329	7.264	22.79
400	B21-B22	14	150	534	0	0.00	402.24	402.24	837.99	0.0080	0.112	7.376	22.62
401	B22-B5	87	150	9319	0	0.00	402.24	402.24	837.99	0.0080	0.694	8.070	21.93
402	B2W5-B5	223	100	57451	48945	48.95	21.62	80.56	167.84	0.0029	0.652	8.722	21.28
403	B5-B4	78	100	2975	0	0.00	21.62	21.62	45.87	0.0005	0.040	8.763	21.24
404	B4-B6	61	100	24100	21050	21.06	0.00	21.06	45.75	0.0003	0.017	8.779	21.22
405	B4-B3	56	100	4139	2000	2.00	2.56	9.66	20.12	0.0001	0.003	8.780	21.22
406	B3-B2	18	100	8344	7658	7.66	0.00	7.66	15.95	0.0001	0.001	8.781	21.22
407	SECTOR 81-B1W5-B1D17	72	150	2716	0	0.00	321.68	321.68	670.16	0.0052	0.380	8.149	21.55
408	B1D17-B4	140	100	37221	27538	27.54	0.00	27.54	57.37	0.0004	0.060	8.209	21.49
409	D17-D18	40	150	6412	4658	4.66	289.18	293.84	612.79	0.0045	0.206	8.415	21.33
410	D18-D6	30	100	2709	11565	11.57	0.00	11.57	24.09	0.0001	0.002	8.657	21.14

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Design Statement of Water Supply

Sr No.	Name of Road	Length of Pipe	Diameter of Pipe	Total Water Demand	Net Water Demand (Total Water Demand - Total Surrenderd Water Demand)	Design of Pipe Line							
						Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Terminal Head
						self	previous	total	20 HRS				
		m	mm	L	L	KLD	KLD	KLD	LPM	m	m	m	m
411	D18-D3	128	100	48800	43918	43.92	0.00	43.92	91.49	0.0010	0.123	8.777	21.22
412	D18-D19	129	100	28801	23880	23.88	0.00	23.88	49.75	0.0003	0.040	8.693	21.31
	-												
413	D18-D22	44	150	1678	0	0.00	210.12	210.12	437.74	0.0024	0.105	8.760	21.24
414	D22-D5	37	100	13416	12005	12.01	0.00	12.01	25.01	0.0001	0.005	8.764	21.24
415	D22-D21	166	150	36707	30375	30.38	167.74	198.11	412.73	0.0021	0.357	9.117	20.88
416	D21-D7	22	100	839	0	0.00	167.74	167.74	349.45	0.0114	0.250	9.368	20.63
	-												
417	D7-D23	74	100	4523	1500	1.50	57.34	58.84	122.58	0.0016	0.121	9.489	20.51
418	D23-A'7	92	100	35797	32288	32.29	25.05	57.34	119.45	0.0016	0.143	9.632	20.37
419	A'7-H1	59	100	2251	0	0.00	25.05	25.05	52.19	0.0003	0.020	9.652	20.35
420	H1-H2	22	100	7664	6825	6.83	18.23	25.05	52.19	0.0003	0.007	9.659	20.34
421	H2-H3	50	100	16057	12150	12.15	0.00	12.15	25.31	0.0001	0.004	9.664	20.34
422	H2-E4	30	100	7219	6075	6.08	0.00	6.08	12.66	0.0100	0.001	9.666	20.34
	-												
423	D7-D20	90	100	17406	13973	13.97	94.93	108.90	226.88	0.0051	0.460	9.828	20.17
424	D20-D19	143	100	12441	6986	6.99	87.94	94.93	197.77	0.0040	0.567	10.395	19.61
425	D19-D2	108	100	62578	20959	20.96	66.98	87.94	183.21	0.0034	0.372	10.766	19.23
426	D2-A2	61	100	6077	3750	3.75	63.23	66.98	139.55	0.0021	0.127	10.893	19.11
427	A2-D1	27	100	8687	7658	7.66	0.00	7.66	15.95	0.0000	0.001	10.894	19.11
428	A2-A'2	62	100	12272	9908	9.91	0.00	9.91	20.64	0.0001	0.004	10.897	19.10
429	A2-A1	53	100	12637	10815	10.82	34.85	45.67	95.14	0.0010	0.054	10.947	19.05
430	84A1-84A11	153	100	23637	17801	17.80	17.05	34.85	72.61	0.0006	0.095	11.042	18.96
431	A11-A12	51	100	16865	4668	4.66	12.39	17.05	35.52	0.0002	0.009	11.051	18.95
432	A12-A'12	33	100	9008	6986	6.99	0.00	6.99	14.55	0.0000	0.002	11.053	18.95
433	84A12-84A'13	18	100	6094	5408	5.41	0.00	5.41	11.27	0.0000	0.000	11.053	18.95
	Total Length	31372		3264170	2652856								
	Road Length	36006		9233495	7306186	7306							

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Sr.No	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Road Length			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12.5M Wide Road	10.5M Wide Road	18.5M Wide Road	14.5M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m	m
1	2	3	4	5	6	7	8	9	10	14	15	16	17	18	19	20
	SECTOR 93															
1	A47-A46	53	24	231.000	230.750	1	500	231.299	230.606	177.16	177.16	0.00				53
2	A46-A45	67	24	230.750	230.250	-1	330	230.906	230.705	438.98	438.98	0.00				67
3	A44-A45	97	24	230.250	230.750	1	330	230.509	230.972							62
4	A37-A14	42	24	230.750	230.750	1	225	230.972	231.181							42
5	A13-A33	8	24	230.750	230.500	1	200	231.181	231.221	110.60	110.60	0.00				8
6	A36-A45	42	24	230.500	231.000	1	225	231.221	231.408	568.88	568.88	0.00				42
7	A12-A36	13	24	231.000	231.250	1	225	231.408	231.466	97.21	97.21	0.00				13
8	E8-A42	27	24	231.250	241.250	1	225	231.465	231.630	264.35	264.35	0.00				26
9	A41-E6	18	24	231.250	231.250	1	350	231.650	231.750	190.05	190.05	0.00				18
10	E5-A41	33	24	231.250	231.500	1	200	231.750	231.910	349.38	349.38	0.00				32
11	A27-E7	25	24	231.500	231.250	1	225	231.910	232.012	225.49	225.49	0.00				25
12	E21-E20	45	24	232.500	232.750	1	350	233.099	233.279	609.59	609.59	0.00				46
13	E22-E21	48	24	232.750	233.000	1	200	233.279	233.519	604.13	604.13	0.00				48
14	A32-E22	74	24	233.000	233.250	1	200	233.519	233.889	1029.08	1029.08	0.00				74
15	A23-A22	13	24	233.000	233.500	1	200	233.689	233.954	170.64	170.64	0.00				13
16	E23-A12	6	24	233.500	233.750	1	135	233.954	234.012	50.89	50.89	0.00				6
17	E24-E25	48	24	233.500	233.750	-1	350	233.054	233.816	250.94	250.94	0.00				35
18	E25-E24	26	24	233.750	233.500	-1	350	233.846	233.772	114.64	114.64	0.00				26
19	A16-A11	55	24	234.250	234.250	1	185	234.541	234.638	336.28	336.28	0.00				55
20	A17-A11	17	24	234.250	234.500	1	500	234.638	234.726	324.75	324.75	0.00				17
21	A5-A2	99	24	235.000	235.500	1	175	235.241	235.790	611.47	611.47	0.00				99

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Sr.No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Embankment in Filling	Excavation in Cutting	Road Length			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12 M Wide Road	9 M Wide Road	7.5 M Wide Road	3.5 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m	m
32	A25-A26	186	24	235.500	235.000	1	225	235.700	236.030	4254.25	4254.25	0.00				186
33	A2-A25	61	24	235.000	236.350	1	125	235.700	236.900	262.16	262.16	0.00				61
34	A29-A24	75	24	236.250	236.250	1	200	236.202	236.677	430.52	430.52	0.00				75
35	A24-A23	179	24	236.250	237.250	1	200	236.677	237.572	1607.48	1607.48	0.00				179
36	A45-A42	53	21	230.250	230.250	-1	200	230.705	230.438	406.14	406.14	0.00				53
37	A59-B12	146	24	230.250	229.750	-1	700	230.458	229.738	294.26	294.26	0.00				140
38	B12-B12	24	24	229.750	229.500	-1	175	230.738	229.600	25.35	25.35	0.00				24
39	B12-C10	213	24	229.500	228.500	-1	220	229.600	228.641	612.18	612.18	0.00				213
40	C10-C7	75	24	228.500	228.000	-1	225	228.641	228.368	404.42	404.42	0.00				75
41	C7-C8	20	21	228.000	228.250	1	300	228.308	228.375	103.84	103.84	0.00				20
42	C8-C9	47	24	228.250	228.500	1	350	228.475	228.564	165.67	165.67	0.00				47
43	C7-C6	65	24	228.000	227.750	-1	350	228.308	228.128	316.66	316.66	0.00				65
44	C6-C5	45	24	227.750	227.750	-1	225	228.128	228.017	194.47	194.47	0.00				45
45	A46-B7	54	18	230.750	230.500	1	900	230.906	230.939	190.55	190.55	0.00	54			
46	A55-A48	19	12	231.000	231.250	-1	475	232.290	232.360	193.21	193.21	0.00	19			
47	A48-A40	77	12	231.250	231.500	-1	475	232.250	232.098	745.13	745.13	0.00	77			
48	A49-A50	165	12	231.500	231.750	-1	500	232.098	231.768	610.24	610.24	0.00	165			
49	A50-A42	152	12	231.750	231.250	-1	500	231.768	231.464	211.66	211.66	0.00	152			
50	A50-A51	51	12	231.750	231.800	-1	725	231.768	231.695	25.69	0.00	25.69	51			
51	A51-A41	29	15	231.800	232.000	-1	750	231.698	232.099	96.34	0.00	96.34		29		
52	A46-A38	19	18	232.000	232.000	1	100	231.699	231.819	84.07	0.00	84.07			19	
53	A38-A39	20	12	232.000	232.000	1	100	231.849	232.049	12.19	0.00	12.19	20			
54	A38-A36	40	18	232.000	232.250	1	1200	231.849	231.890	705.26	0.00	705.26			40	
55	A36-A37	137	12	232.250	231.250	1	1125	231.890	232.017	330.30	330.30	0.00	137			
56	A35-A32	98	18	232.000	232.500	-1	1000	231.849	231.754	700.61	0.00	700.61			98	
57	A32-A33	64	18	232.500	232.750	-1	5000	231.754	231.767	995.80	0.00	995.80			64	
58	A33-A39	150	12	232.750	233.250	1	5000	231.767	231.797	2192.01	0.00	2192.01	150			

Sr No	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Road Length			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				L2.5M Wide Road	L5 M Wide Road	L8 M Wide Road	L24 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m	m
48	A20-A30	19	12	233.250	233.250	1	5000	231.797	231.601	230.85	0.00	230.85	19			
49	A33-A34	71	10	232.750	232.750	1	5000	231.767	231.781	1347.21	0.00	2247.41			71	
50	A34-A41	66	15	232.750	232.500	-1	4200	231.781	231.767	804.32	0.00	804.32		66		
51	A32-A51	100	18	232.500	232.500	1	8500	231.754	231.766	1331.87	0.00	1331.87				100
52	A51-A28	55	18	232.500	232.750	1	5400	231.766	231.805	831.01	0.00	831.01				55
53	A28-A27	31	12	232.750	233.000	1	5000	231.805	231.809	269.05	0.00	269.05	31			
54	A28-A35	37	18	232.750	233.000	1	5000	231.805	231.810	422.73	0.00	422.73			37	
55	A35-A41	135	15	232.000	231.250	1	5400	231.698	231.760	2001.11	2001.11	0.00		135		
56	A26-B5	58	12	231.000	230.750	1	5000	231.408	231.427	637.58	637.58	0.00	58			
57	A41-A38	55	15	230.500	231.250	1	200	231.221	231.300	917.89	917.89	0.00		55		
58	A37-B1	57	12	230.750	230.750	1	5000	231.181	231.192	277.51	277.51	0.00	57			
59	A44-A38	101	12	230.750	231.000	1	800	230.972	231.006	194.24	194.24	0.00	101			
60	A46-B1	215	12	230.750	230.000	-1	200	230.972	229.969	165.22	165.22	0.00	215			
61	W12-B1	52	15	230.250	230.000	1	465	229.938	229.907	48.82	0.00	48.82		52		
62	B3-B9	162	12	230.000	228.750	-1	685	229.907	229.671	805.61	805.61	0.00	162			
63	B8-B10	50	12	228.750	229.000	1	265	229.671	229.859	588.99	588.99	0.00	50			
64	B1-B2	49	15	230.000	230.000	-1	1300	229.907	229.895	73.49	0.00	73.49		49		
65	B2-B2	111	12	230.000	230.500	1	5000	229.893	229.915	461.28	0.00	461.28	111			
66	B2-B10	162	12	230.000	229.000	-1	5000	229.893	229.860	791.50	791.50	0.00	162			
67	B2-B3	33	15	230.000	230.250	1	5000	229.893	229.899	112.41	0.00	112.41		33		
68	B10-B11	49	12	229.000	229.250	1	250	229.859	229.991	316.09	316.09	0.00	49			

Sr.No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Cutting	Earthwork in Filling	Excavation in Cutting	Road Length			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12.5 M Wide Road	15 M Wide Road	18 M Wide Road	24 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m	m
69	E11-E12	63	12	229.250	228.750	1	5000	229.991	230.004	150.11	150.11	0.00	61			
70	E13-E12	98	12	229.250	229.250	1	375	229.991	230.005	361.15	361.15	0.00	38			
71	E13-E12	114	12	230.250	229.250	1	775	230.093	230.540	569.37	569.37	0.00	111			
72	E13-E14	55	12	229.750	229.700	1	125	230.093	230.571	565.48	565.48	0.00	55			
73	E14-E4	118	12	229.250	230.000	-1	700	230.571	230.402	1220.07	1220.07	0.00	118			
74	E4-E5	40	15	230.000	229.500	-1	950	230.402	230.242	349.41	349.41	0.00		40		
75	E4-E6	215	12	230.000	231.250	1	175	230.402	231.031	1010.41	1010.41	0.00	215			
76	E5-E8	40	15	230.000	230.500	1	180	230.407	230.655	212.07	212.07	0.00		39		
77	E5-E7	216	12	230.500	231.500	1	175	230.675	231.509	736.12	736.12	0.00	216			
78	E8-E10	70	12	230.500	230.250	1	2200	230.675	230.709	288.96	288.96	0.00	56			
79	E10-E16	115	12	230.250	229.000	1	825	230.709	230.849	902.26	902.26	0.00	115			
80	E10-E19	114	12	230.250	230.750	1	950	230.709	230.829	368.15	368.15	0.00	114			
81	E21-E31	79	12	232.750	232.750	-1	8000	233.279	233.270	497.22	497.22	0.00	79			
82	E21-E27	82	12	232.750	232.750	-1	8000	233.279	233.259	506.29	506.29	0.00	82			
83	E27-E33	75	12	232.750	232.250	1	5000	233.279	233.285	699.35	699.35	0.00	75			
84	E33-E34	49	12	232.250	232.250	1	5000	233.285	233.294	681.20	681.20	0.00	49			
85	E34-E35	61	12	232.250	232.500	1	5000	233.294	233.307	677.44	677.44	0.00	61			
86	E27-E29	100	12	232.750	232.500	-1	900	233.259	233.148	694.51	694.51	0.00	100			
87	E35-E29	36	12	232.250	232.500	-1	250	233.294	233.150	366.06	366.06	0.00	36			
88	E29-E30	29	12	232.500	232.750	-1	900	233.148	233.116	176.47	176.47	0.00	29			
89	E26-E27	59	12	232.750	233.000	-1	1400	233.259	233.217	257.17	257.17	0.00	59			
90	E26-E28	91	12	233.000	232.000	-1	1400	233.217	233.152	701.66	701.66	0.00	91			
91	E26-E32	82	12	233.000	232.750	1	150	233.217	233.764	113.65	113.65	0.00	82			

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Sr No.	Stretch of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Road Length:			
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12 M Wide Road	15 M Wide Road	18 M Wide Road	24 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m	m
91	T23-A21	82	12	235.500	235.750	1	3000	233.934	233.975	332.22	332.22	0.00	R2			
92	T23-A14	58	12	235.750	234.250	1	200	233.946	234.796	106.86	106.86	0.00	58			
94	A14-A59	115	12	234.250	234.500	1	500	234.366	234.466	104.69	104.69	0.00	115			
95	A59-A60	102	12	234.500	234.000	1	5000	234.366	234.586	395.00	395.00	0.00	102			
96	A10-A11	178	15	234.250	235.000	1	700	234.638	234.895	374.86	374.86	0.00		178		
97	A13-A10	58	18	235.000	234.750	1	5000	234.893	234.909	21.29	21.29	0.00			58	
98	A5-A10	177	15	235.000	235.250	2	500	234.893	235.245	147.24	0.00	147.24		177		
99	A12-A9	55	12	235.250	235.000	-1	200	235.247	234.972	10.53	0.00	10.53	55			
100	A12-A10	65	12	235.000	234.750	1	5000	234.972	234.985	80.37	80.37	0.00	65			
101	A10-A12	53	12	235.000	234.750	-1	100	234.972	234.669	34.91	0.00	34.91	53			
102	A35-A36	33	12	234.750	234.500	1	5000	234.669	234.679	41.15	41.15	0.00	33			
103	A18-A19	34	12	234.750	234.500	1	5000	234.969	234.975	19.21	19.21	0.00	34			
104	A9-A6	55	12	235.250	235.500	1	145	235.247	235.109	8.39	8.39	0.00	55			
105	A6-A20	55	12	235.500	235.500	1	5000	235.529	235.540	27.50	27.50	0.00	55			
106	A6-A5	55	12	235.500	236.000	1	190	235.529	235.816	90.60	0.00	90.60	55			
107	A5-A5	55	15	236.000	236.000	1	5000	235.816	235.879	143.26	0.00	143.26		55		
108	A5-A1	36	18	236.000	236.250	1	5000	235.816	235.825	131.04	0.00	131.04	36			
09	A10-A7	35	18	235.000	235.250	1	225	234.893	235.157	180.15	0.00	180.15			35	
110	A7-A20	65	12	235.250	235.500	1	5000	235.127	235.160	180.58	0.00	180.58	65			
111	A7-A1	110	12	235.250	234.250	1	5000	235.127	235.160	206.83	206.83	0.00	16			
112	A7-A4	36	18	235.250	235.500	1	140	235.127	235.501	41.27	0.00	41.27			36	
113	A4-A8	51	15	235.500	236.000	1	5000	235.530	235.544	226.91	0.00	226.91		2		
114	A4-A14	60	15	235.500	235.750	1	5000	235.530	235.546	33.19	0.00	33.18	29			

Earthwork Quantities Designed Using Selected Typical Roads

Sl. No.	Name of Road	Length of Road	Width of Road	Natural Section Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Embankment in Filling	Excavation in Cutting	Road Length				
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				10 M Wide Road	15 M Wide Road	24 M Wide Road	30 M Wide Road	45 M Wide Road
		m	m	m	m			m	m	cu.m	cu.m	cu.m	m	m	m	m	m
115	A4-A5	194	15	235.500	235.000	-1	675	235.530	235.242	396.17	396.17	0.00		194			
116	C10-C11	81	12	228.500	228.500	1	375	228.641	228.719	188.18	188.18	0.00	81				
117	C6-C13	212	12	228.750	228.750	1	1025	228.128	228.339	17.26	0.00	47.26	212				
118	C8-C12	151	12	228.250	228.250	1	975	228.175	228.430	86.77	0.00	86.77	151				
119	B12-B13	19	15	229.500	229.250	1	175	229.600	229.609	79.72	79.72	0.00			19		
120	B13-B13	37	15	229.250	229.500	1	5000	229.709	229.716	149.64	149.64	0.00	37				
121	B13-B14	43	15	229.250	229.250	-1	100	229.709	229.483	229.07	229.07	0.00			43		
122	B14-B15	55	12	229.250	229.000	1	5000	229.483	229.494	239.70	239.70	0.00	55				
123	B14-B17	54	15	229.250	229.000	-1	250	229.483	229.267	207.25	207.25	0.00			54		
124	B17-B20	33	12	229.000	229.250	1	5000	229.267	229.277	92.19	99.49	0.00	33				
125	B17-B22	11	15	229.000	229.000	1	200	229.267	229.302	48.54	48.54	0.00			11		
126	B27-B18	52	15	229.000	229.250	1	5000	229.322	229.332	157.47	157.47	0.00			52		
127	B27-B19	55	15	229.000	229.000	1	175	229.322	229.636	306.04	306.04	0.00			55		
128	B19-B30	20	12	229.000	229.000	1	5000	229.636	229.640	155.11	155.11	0.00	20				
129	B19-B24	48	12	229.000	229.000	1	5000	229.636	229.646	369.09	369.09	0.00	48				
130	B19-B22	34	15	229.000	229.250	1	200	229.636	229.806	303.55	303.55	0.00			34		
131	B22-B21	19	15	229.250	228.750	1	200	229.806	230.001	213.24	213.24	0.00			19		
132	B22-B5	47	15	228.750	228.750	1	400	229.001	230.018	692.28	692.28	0.00	47				
133	B5-B6	240	12	228.750	228.500	1	375	230.018	230.674	6081.79	6081.79	0.00	240				
134	B5-D1	88	12	228.500	229.000	1	1200	230.674	230.718	2070.99	2070.99	0.00	88				
135	B4-D8	62	12	229.000	229.250	1	5000	230.718	230.760	1233.98	1233.98	0.00	62				
136	B4-B3	59	12	229.000	228.000	1	5000	230.748	230.760	1895.63	1895.63	0.00	59				
137	B6-B2	28	15	228.000	228.500	1	2000	230.760	230.765	1055.21	1055.21	0.00			28		
Total		1806.5								39330.9	50208.2	1577.3	5936	1505	837		3287

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Sr No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Depth		Ave Depth	Quantity	Earthwork in Filling	Excavation in Cutting	Type of Roads		
				Upstream Level	Downstream Level			Upstream Level	Downstream Level	Upstream	Downstream					2 M Wide Road	3 M wide Road	3+3M Wide Road
		m	m					m	m				cu.m	cu.m	cu.m	m	m	m
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	A1-A3	55	24	229.250	229.250	-1	275	229.688	229.495	0.44	0.24	0.34	424.10	424.10	0.00			57
2	A3-A4	58	24	228.750	228.500	-1	175	229.230	228.898	0.48	0.40	0.44	611.36	611.36	0.00			38
3	A5-D23	95	24	228.000	227.500	1	500	228.319	228.065	0.32	0.56	0.47	1045.84	3048.84	0.00			95
4	A1-A11	147	12	229.250	230.000		5000	229.668	229.717	0.42	-0.28	0.08	139.42	139.42	0.00	147		
5	A11-A12	53	12	230.000	230.000		8000	229.717	229.724	-0.28	-0.28	-0.28	177.86	0.00	177.86	53		
6	A12-A13	33	12	230.000	229.750		8000	229.724	229.728	-0.28	-0.02	-0.15	59.11	0.00	59.11	33		
7	A13-A17	56	12	230.000	229.750	1	5000	229.724	229.735	-0.28	-0.02	-0.15	97.94	0.00	97.94	56		
8	A17-A2	62	12	229.250	229.500	1	5000	229.495	229.507	0.24	0.01	0.13	95.83	95.83	0.00	62		
9	A2-D1	52	12	229.250	228.750	1	5000	229.495	229.505	0.24	0.76	0.50	312.07	312.07	0.00	52		
10	A5-D2	62	12	229.250	228.750	1	725	229.495	229.580	0.24	0.83	0.54	400.66	400.66	0.00	62		
11	D2-D19	132	12	228.750	228.750	1	725	229.580	229.736	0.83	1.48	1.16	1855.91	1855.91	0.00	132		
12	D19-D16	121	12	228.250	227.750	1	8000	229.755	229.750	1.48	2.00	1.74	2530.07	2530.07	0.00	121		
13	D18-D3	136	12	227.750	228.500	1	5000	229.750	229.777	2.00	1.28	1.64	2674.25	2674.25	0.00	136		
14	D18-D17	49	12	227.750	228.250	-1	5000	229.750	229.740	2.00	1.49	1.75	1026.14	1026.14	0.00	49		
15	D17-D16	32	12	228.250	228.250	1	5000	229.740	229.747	1.49	1.50	1.49	573.48	573.48	0.00	32		
16	D17-D4	164	12	228.250	228.000	1	5000	229.740	229.773	1.49	1.77	1.63	3211.06	3211.06	0.00	164		
17	D19-D20	143	12	228.250	228.000	-1	175	229.755	228.918	1.48	0.92	1.20	2061.50	2061.50	0.00	143		
18	D20-A5	20	12	228.000	228.500	-1	1000	228.918	228.898	0.92	0.40	0.66	157.86	157.86	0.00	20		
19	D20-D3	86	12	228.000	228.750	1	5000	228.918	228.935	0.92	1.18	1.05	1072.29	1072.29	0.00	86		
20	D18-D6	49	12	227.750	227.750	1	5000	229.750	229.760	2.00	2.01	2.00	1178.00	1178.00	0.00	49		
21	D18-D19	45	18	227.750	227.750	-1	125	229.750	229.590	2.00	1.64	1.82	1474.22	1474.22	0.00		45	
22	D22-D3	46	18	228.750	227.500	-1	100	229.590	228.936	1.64	1.45	1.54	2185.95	2185.95	0.00		46	
23	D22-D21	132	18	227.750	228.500	-1	350	229.590	228.956	1.64	1.46	1.55	4235.04	4235.04	0.00		132	
24	D21-D7	28	12	227.500	227.750	-1	1000	228.956	228.934	1.46	1.18	1.32	443.51	443.51	0.00	28		
25	D7-D19	80	12	227.750	227.500	-1	95	228.934	229.032	1.18	0.39	0.89	852.63	852.63	0.00	80		
26	A7-D1	53	12	228.000	227.500	-1	200	228.375	228.110	0.47	0.61	0.49	313.17	313.17	0.00	53		
27	D1-D2	21	12	227.500	227.500	1	5000	228.110	228.114	0.61	0.61	0.61	154.23	154.23	0.00	21		
28	D2-A9	80	12	227.500	227.500	1	5000	228.114	228.124	0.61	0.62	0.62	351.47	351.47	0.00	80		
29	A9-D6	28	12	227.500	227.250	1	5000	228.114	228.120	0.61	0.87	0.74	249.78	249.78	0.00	28		
	Total	2086.5								0.910	0.871	0.928	29023	29458	-435	1630	243	294

Earthwork Calculation Sheet

Sr No	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Length of Roads		
				Upstream Level	Downstream Level			Up-stream Level	Downstream Level				12 M Wide Road	18 M Wide Road	24 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	B1-B2	22	24	230.750	230.000	-1	300	231.397	231.017	396.93	396.93	0.00			22
2	B2-B3	162	12	230.000	230.000	1	2800	231.017	231.098	2055.32	2055.32	0.00	162		
3	B3-B8	27	12	230.000	230.800	1	5000	231.098	231.109	358.55	358.55	0.00	27		
4	B3-B4	30	12	230.000	230.900	1	2000	231.098	231.113	397.90	397.90	0.00	30		
5	B4-B9	67	12	230.500	230.850	1	5000	231.113	231.126	598.55	598.55	0.00	67		
6	B4-B5	49	12	230.500	230.000	1	1000	231.113	231.162	652.14	652.14	0.00		49	
7	B5-B10	48	12	230.000	230.750	1	5000	231.162	231.171	455.94	455.94	0.00	48		
8	B5-B6	33	12	230.000	230.300	1	1000	231.162	231.195	439.49	439.49	0.00		33	
9	B6-B11	58	12	230.300	230.250	1	5000	231.195	231.206	574.59	574.59	0.00	58		
10	B6-B7	65	12	230.300	229.750	1	5000	231.195	231.208	1039.36	1039.36	0.00		65	
11	B7-B12	48	12	229.750	230.250	1	5000	231.208	231.217	698.44	698.44	0.00	48		
12	B7-B14	52	12	229.750	229.500	1	5000	231.208	231.218	990.89	990.89	0.00	52		
13	B14-B15	42	12	229.500	229.500	1	5000	231.218	231.227	868.07	868.07	0.00	42		
14	B15-B22	105	12	229.500	230.250	1	5000	231.227	231.247	1683.20	1683.20	0.00	102		
15	B15-B16	175	12	229.500	229.500	-1	500	231.227	230.875	3274.79	3274.79	0.00	176		
16	B15-B16	25	12	229.500	229.750	1	175	231.227	231.369	501.90	501.90	0.00	25		
17	B16-B25	178	12	229.750	225.500	-1	300	231.369	230.779	3892.40	3892.40	0.00	178		
18	B16-B17	50	12	229.750	229.750	-1	5000	231.369	231.359	908.65	908.65	0.00	50		
19	B17-B34	166	12	229.750	229.750	-1	200	231.359	230.806	2654.85	2654.85	0.00	166		
20	B17-B18	32	12	229.750	229.750	-1	5000	231.359	231.353	616.79	616.79	0.00	32		
21	B17-B35	84	12	229.750	230.250	1	5000	231.359	231.376	1378.76	1378.76	0.00	84		
22	B18-B33	132	12	229.750	230.000	-1	300	231.353	230.846	2294.83	2294.83	0.00	132		
23	B18-B19	40	12	229.750	230.000	-1	5000	231.353	231.345	707.53	707.53	0.00	40		
24	B19-B31	135	12	230.000	230.000	-1	500	231.345	231.152	2022.72	2022.72	0.00	135		
25	B19-B20	41	12	230.000	230.000	-1	5000	231.345	231.337	659.75	659.75	0.00	41		
26	B20-B30	98	12	230.000	230.000	-1	700	231.337	231.192	1489.78	1489.78	0.00	98		
27	B20-B24	53	12	230.000	230.500	1	5000	231.337	231.347	891.59	891.59	0.00	53		
28	B20-B21	43	12	230.000	230.250	-1	5000	231.337	231.328	693.08	693.08	0.00	43		
29	B21-B29	59	12	230.250	230.250	-1	700	231.328	231.348	697.68	697.68	0.00	56		

Sr No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Clinometer	Longitudinal Slope	Formation Levels		Quantity			Length of Roads		
				Upstream Level	Down-stream Level			Upstream Level	Downstream Level		Embankment in Filling	Excavation in Cutting	12 M Wide Road	15 M Wide Road	24 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m
30	B21-B35	76	12	230.250	230.500	1	5000	231.428	231.548	876.27	876.27	0.00	76		
31	B21-B28	66	12	230.250	230.250	-1	5000	231.328	231.317	720.80	720.80	0.00	66		
32	B26-B27	24	12	230.250	230.250	1	3000	231.317	231.325	308.45	308.45	0.00	23		
33	B27-B36	131	12	230.250	230.750	-1	6300	231.325	231.304	1288.59	3280.59	0.00	131		
34	B28-B29	49	12	230.250	230.250	-1	700	231.317	231.247	606.83	606.82	0.00	49		
35	B29-B30	46	12	230.250	230.000	-1	900	231.247	231.156	605.25	606.25	0.00	46		
36	B30-B31	40	12	230.000	230.000	-1	900	231.156	231.151	563.37	563.37	0.00	40		
37	B31-B32	22	12	230.000	230.000	1	110	231.151	231.351	330.39	330.39	0.00	22		
38	B32-B34	37	12	230.000	229.750	-1	925	230.846	230.896	422.40	422.40	0.00	37		
39	B34-B35	37	12	229.750	229.500	-1	1200	230.896	230.776	517.68	517.68	0.00	37		
40	B35-B36	39	12	229.500	229.500	1	400	230.776	230.875	619.70	619.70	0.00	39		
41	B36-C1	62	12	229.500	229.000	-1	70	230.875	229.975	886.80	886.80	0.00	62		
42	C1-C2	35	24	229.000	229.000	-1	450	229.975	229.895	784.67	784.67	0.00			35
43	C2-C3	39	24	229.000	229.000	-1	450	229.895	229.822	679.99	679.99	0.00			39
44	C3-C4	20	24	229.000	229.000	-1	450	229.822	229.777	383.85	383.85	0.00			20
45	C4-C5	18	24	229.000	229.000	-1	450	229.777	229.737	327.23	327.23	0.00			18
46	C5-C6	72	24	229.000	228.750	-1	650	229.737	229.577	1352.10	1352.10	0.00			72
47	C6-C7	102	24	228.750	228.750	-1	550	229.577	229.392	1798.64	1798.64	0.00			102
48	C7-C8	35	24	228.750	228.750	1	700	229.392	229.428	395.92	395.92	0.00			35
49	C8-C9	47	24	228.750	228.500	1	5000	229.577	229.587	1079.68	1079.68	0.00			47
50	C9-C10	55	24	228.500	228.250	1	5000	229.587	229.598	1606.92	1606.92	0.00			55

S.No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels		Slope Correction	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Length of Roads		
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12 M Wide Road	15 M Wide Road	36 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m
51	C20-C15	42	21	228.250	228.000	1	5000	229.408	229.606	1488.88	1488.88	0.00			42
52	C11-C17	43	24	228.000	228.000	1	6000	229.606	229.633	1661.36	1661.36	0.00			43
53	C2-C19	27	12	229.000	228.750	-1	400	229.805	229.828	319.62	319.62	0.00	27		
54	C19-C19	56	12	228.750	228.750	1	5000	229.828	229.839	728.01	728.01	0.00	56		
55	C15-C16	49	12	228.750	228.500	-1	500	229.828	229.739	678.40	678.40	0.00	49		
56	C16-C18	44	12	228.500	228.750	1	5000	229.739	229.739	585.63	585.63	0.00	44		
57	C16-C17	75	12	228.500	228.000	-1	550	229.739	229.642	1292.06	1292.06	0.00	75		
58	C5-C40	18	12	229.000	229.000	1	120	229.822	229.972	193.73	193.73	0.00	18		
59	C40-C41	138	12	229.000	229.000	1	150	229.972	230.892	2371.24	2371.24	0.00	129		
60	C40-C42	149	13	229.000	229.250	1	5000	229.972	230.002	1926.15	1926.15	0.00		149	
61	C4-C20	105	12	229.000	228.500	1	5000	229.577	229.799	1907.84	1907.84	0.00	105		
62	C5-C37	115	13	229.000	229.000	1	5000	229.737	229.760	1063.57	1063.57	0.00	15		
63	C37-B38	55	12	229.000	229.000	1	5000	229.760	229.771	505.54	505.54	0.00	55		
64	B28-B39	89	12	229.000	229.500	1	5000	229.771	229.789	566.43	566.43	0.00	89		
65	C9-C7	116	12	229.500	228.750	-1	600	229.587	229.394	1204.36	1204.36	0.00	116		
66	C10-C14	97	13	228.250	228.500	1	5000	229.598	229.617	1434.71	1434.71	0.00	97		
67	C10-C17	85	12	228.250	228.000	1	1900	229.598	229.642	1488.73	1488.73	0.00	85		
68	C11-C21	42	12	228.000	228.000	1	5000	229.606	229.615	811.67	811.67	0.00	42		
69	B1-A1	156	12	230.750	230.500	-1	250	231.217	230.613	561.16	561.16	0.00	156		
70	A1-A2	43	12	230.500	230.500	-1	225	230.613	230.422	8.88	8.88	0.00	43		
71	A2-A3	68	12	230.500	230.750	1	275	230.422	230.669	65.04	0.00	65.04	68		
72	A2-A4	47	12	230.500	230.500	-1	225	230.422	230.213	103.09	0.00	103.09	47		
73	A1-A5	97	12	230.500	230.000	1	5000	230.213	230.232	32.05	0.00	32.05	97		
74	A5-A6	55	12	230.000	230.000	1	5000	230.232	230.213	156.86	156.86	0.00	55		
75	A2-A12	128	12	230.750	230.250	1	200	230.689	231.309	750.09	750.09	0.00	128		
		8069								97787.742	60982.935	-206.19005	4289	298	516

Sr. No.	Name of Road	Length of Road	Width of Road	Natural Surface Levels			Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Length of road		
				Upstream Level	Downstream Level	Slope Character		Upstream Level	Downstream Level				12 M wide Road	15 M Wide Road	24 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	A1-A2	56	24	234.750	235.000	1	225	235.157	235.402	541	541	0	0	0	56
2	A2-A3	14	24	235.000	235.000	1	225	235.402	235.464	146	146	0	0	0	14
													0	0	0
3	A59-A60	45	24	235.000	235.750	1	225	235.999	236.199	782	782	0	0	0	45
													0	0	0
4	A61-A5	48	24	235.750	236.000	1	375	236.199	236.327	448	448	0	0	0	48
													0	0	0
5	A5-A6	65	24	236.000	236.250	1	375	236.327	236.501	451	451	0	0	0	65
									236.499				0	0	0
6	A13-A14	59	24	235.500	235.500	1	5000	235.999	236.011	716	716	0	0	0	59
7	A14-A10	97	24	235.500	235.750	1	3000	236.011	236.044	937	937	0	0	0	97
8	A10-A22	94	24	235.750	236.250	1	7500	236.044	236.070	129	129	0	0	0	94
													0	0	0
9	A6-A37	16	24	236.250	236.500	1	110	236.501	236.646	76	76	0	0	0	16
									236.648				0	0	0
10	A37-A39	109	24	236.500	236.500	1	275	236.646	237.043	901	901	0	0	0	109
													0	0	0
11	A6-A32	39	24	236.250	236.500	1	125	236.501	236.813	264	264	0	0	0	39
12	A32-A31	55	24	236.500	236.750	1	75	236.813	237.546	732	732	0	0	0	55
13	A31-A49	27	24	236.750	236.750	1	100	237.546	237.816	603	603	0	0	0	27
14	A50-A51	39	24	237.750	238.000	1	65	237.816	238.416	226	226	0	0	0	39
									238.400				0	0	0
15	A1-A55	165	12	234.750	234.250	1	225	235.153	235.878	1986	1986	0	165	0	0
16	A56-A57	262	12	234.750	236.250	1	250	236.701	237.749	5423	5423	0	262	0	0
													0	0	0
17	A1-A7	47	12	234.750	234.500	1	6000	235.153	235.161	300	300	0	47	0	0
18	A7-A64	253	12	234.500	235.250	1	6000	235.161	235.203	932	932	0	253	0	0
19	A64-A43	100	12	235.350	235.500	1	6000	235.400	235.220	196	0	196	100	0	0
									235.221				0	0	0
20	A43-A62	33	12	235.500	235.500	1	5000	235.220	235.222	44	0	44	33	0	0
21	A62-A44	81	12	235.500	236.000	1	5000	235.222	235.259	505	0	505	81	0	0

Sr No.	Name of Road.	Length of Road	Width of Road	Natural Surface Levels		Slope Character	Longitudinal Slope	Formation Levels		Quantity	Earthwork in Filling	Excavation in Cutting	Length of road		
				Upstream Level	Downstream Level			Upstream Level	Downstream Level				12 M Wide Road	15 M Wide Road	24 M Wide Road
		m	m					m	m	cu.m	cu.m	cu.m	m	m	m
22	A62-A63	70	12	235.500	235.750	1	5000	235.222	235.236	332	0	332	70	0	0
23	A63-A'45	23	12	235.750	235.500	1	5000	235.236	235.241	107	0	107	23	0	0
24	A63-A46	57	12	235.750	236.000	1	5000	235.236	235.248	433	0	433	57	0	0
													0	0	0
25	A2-A'2	49	12	235.000	234.750	1	5000	235.402	235.412	313	313	0	49	0	0
													0	0	0
26	A'3-A'58	62	12	235.000	235.000	-1	650	235.464	235.369	310	310	0	62	0	0
27	A'58-A9	98	12	235.000	235.250	-1	650	235.369	235.218	198	198	0	98	0	0
28	A9-A'8	16	12	235.250	235.250	1	5000	235.218	235.221	6	0	6	16	0	0
29	A9-A'12	34	12	235.250	235.500	1	5000	235.218	235.225	63	0	63	34	0	0
30	A9-A10	62	12	235.250	235.750	1	75	235.218	236.045	98	98	0	62	0	0
31	A'22-A'23	94	12	236.250	236.750	1	3500	236.070	236.097	469	0	469	94	0	0
32	A'23-A'24	97	12	236.750	237.000	1	5000	236.097	236.117	894	0	894	97	0	0
33	A'24-A'25	62	12	237.000	237.000	1	5000	236.117	236.129	653	0	653	62	0	0
34	A'25-A'26	88	15	237.000	237.500	1	5000	236.129	236.147	1468	0	1468	0	88	0
35	A'26-A'27	73	12	237.500	236.750	1	5000	236.147	236.161	851	0	851	73	0	0
36	A'27-A'28	91	15	236.750	236.500	1	5000	236.161	236.180	620	0	620	0	91	0
37	A14-A15	34	12	235.500	235.500	1	300	236.011	236.125	232	232	0	34	0	0
38	A15-A16	80	12	235.500	236.000	1	325	236.125	236.371	478	478	0	80	0	0
39	A15-A20	24	12	235.500	235.750	1	1000	236.125	236.149	147	147	0	24	0	0
40	A20-A21	25	12	235.750	236.250	1	1000	236.149	236.174	48	48	0	25	0	0
41	A20-A16	73	12	235.750	236.000	1	325	236.149	236.373	338	338	0	73	0	0
42	A16-A17	32	12	236.000	236.000	-1	2300	236.371	236.357	140	140	0	32	0	0
43	A17-A18	18	12	236.000	236.250	1	5000	236.357	236.360	50	50	0	18	0	0
44	A17-A5	66	12	236.000	236.000	-1	2200	236.357	236.527	271	271	0	66	0	0
45	A31-A33	87	12	236.750	237.250	-1	1300	237.546	237.479	535	535	0	87	0	0
46	A33-A34	25	12	237.250	237.500	1	5000	237.479	237.484	32	32	0	25	0	0
47	A33-A35	50	12	237.250	236.500	-1	1300	237.479	237.441	351	351	0	50	0	0
48	A35-A32	63	12	236.500	236.500	-1	100	237.441	236.811	473	473	0	63	0	0
									236.813				0	0	0
49	A35-A36	50	12	236.500	236.500	-1	75	237.441	236.774	364	364	0	50	0	0
50	A36-A37	39	12	236.500	236.500	-1	300	236.774	236.644	98	98	0	39	0	0
									236.646						
	Total	3324								13428.65	20068.56	6639.8799	2382	179	763

(Director)

Sr No.	Name of Road	Length of Pipe	Length of Pipe Line: 100 mm dia	150 mm dia	200 mm dia	250 mm dia	300 mm dia	350 mm dia	400 mm dia	Sluice Valves: 100 mm dia	150 mm dia	200 mm dia	250 mm dia	300 mm dia	350 mm dia	400 mm dia
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
		2	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	WWS-L	20							20							
2	L-B2D2	27							27							1
	SECTOR B2-															
3	D2-D5	91	91							1						
4	D5-D6	30	30							1						
5	D6-D7	56	56							1						
6	D7-D8	125	125							1						
7	D7-D11	56	56							1						
8	D11-D10	78	78													
9	D10-D14	8	8													
10	D12-D15	65	65							1						
11	D15-D16	62	62							1						
12	D16-D18	29	29							1						
13	D16-D19	61	61							1						
14	D19-D17	28	28													
15	D17-D21	66	66													
16	D17-D21	21	21													
17	D21-D22	56	56													
18	D33-D34	35	35													
19	D33-D32	70	70													
20	D32-D31	27	27													
21	D32-D29	61	61							1						
22	D29-D24	67	67							1						
23	D29-D28	132	132							1						
24	D28-D27	220	220							1						
25	D27-D26	48	48													1
26	B2D2-D21	31							31							
27	B2D1-B2D8	67							67							
28	B2D8-D7	55					55							1		

Sr.No.	Name of Road	Length of Pipe	Length of Pipe Line							Sluice Valves						
			100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
29	F7-F26	87	87													
30	F7-F25	21	21													
31	F7- F6	126					126							1		
32	F6-F23	54	54													
33	F23-F24	117	117													
34	F6-F21	56	56													
35	F21-F22	11	11													
36	F6- F5	61					61							1		
37	F5-F20	38	38							1						
38	F20-F21	98	88							1						
39	F2- F4	53				53						1				
40	F4-F3	9				9						1				
41	F3-F12	44	44							1						
42	F3-F15	170	170													
43	F15-F16	55	55													
44	F16-F17	22	22													
45	F15-F18	12	12													
46	F18-F19	18	18													
47	F18-F11	86	86													
48	F3-F2	49				49						1				
49	F2-F14	170	170							1						
50	F14-F13	57	57							1						
51	F2- F1	54				54						1				
52	F1-F0	194	194							1						
53	F9-F8	66	66													

Sr No	Name of Zone	Length of Pipe Line								Sluice Valves						
		Length of Age	100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia
		M	m	m	m	m	m	m	m	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.
54	R1- R7	86				60							1			
55	R7- R8	65	65							1						
56	R8- R9	41	41							1						
57	R7- R5	195				195							1			
58	R5- R4	15	15							1						
59	R4- R24	211	211							1						
60	R4-R1	54	54													
61	R5- R23	223	223							1						
62	R25- R24	58	58													
63	R1-R2	57	57							1						
64	R6-R6	72				72										
65	R6- R27	91	91							1			1			
66	R6- R5	5				5										
67	R3-R15	125	125							1						
68	R15-R20	151	151							1						
69	R20-R19	62	62													
70	R15-R14	54	54							1						
71	R5- R4	34				34							1			
72	R4-R14	126	126							1						
73	R14-R19	175	175													
74	R19- R18	88	88													
75	R14- R13	57	57							1						
76	R4- R3	57		57								1				
77	R3-R2	66	66							1						

Sr No.	Name of Road	Length of Pipe	Length of Pipe Line							Sluice Valves						
			100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
78	B8- B8	67	67							1						
79	B9- B9	21	21							1						
80	B10-B36	50	50							1						
81	B36-B1	87	87							1						
82	B36- B1	55	55							1						
83	B1-B15	184	184							1						
84	B15- B16	118	118							1						
85	B16- B17	16	16							1						
86	B16-B18	13	13							1						
87	B8- B12	127			127					1						
88	B12- B18	125	125							1						
89	B12- B11	51			51					1						
90	B11-B11	99	99							1						
91	B31-B17	151			151					1						
92	B11- B27	6	6							1						
93	B13-B16	68			68					1						
94	B13- B10	249			249					1						
	SECTOR B2A-															
95	B2B10-B2A1	73			73					1						
96	A1-A55	110		110						1						
97	A1-A7	56	56							1						
98	A7-A64	254	254							1						
99	A64-A45	81	81							1						
100	A13-A62	11	11							1						
101	A62-A44	65	65							1						
102	A62-A63	70	70							1						
103	A62-A45	20	20							1						
104	A63-A46	41	41							1						
105	A1-A2	56		56						1						
106	A2-A3	6		6						1						

Length of Pipe Line

Sluice Valves

Sr No.	Name of Road	Length of Pipe	100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
107	A 9-A58	94		94												
108	A 58-A9	95		95												
109	A8-A8	18	18													
110	A9-A10	97		97												
111	A10-A22	88	88													
112	A22-A23	88	88													
113	A23-A 24	107	107													
114	A24-A25	64	64													
115	A25-A26	74	74													
116	A26-A27	73	73							1						
117	A27-A28	80	80													
118	A28-A14	103		109							1					
119	A14-A59	71	71							1						
120	A59-A60	44	44							1						
121	A14-A15	25		25												
122	A15-A16	76	76							1						
123	A15-A23	23		23												
124	A20-A21	19	19							1						
125	A21-A16	70		70												
126	A16-A17	39	39							1						
127	A17-A18	11	11													
128	A17-A5	74	74							1						
129	A5-A60	97	97							1						
130	A5-A6	71	71													
131	A6-A37	13	13							1						
132	A37-A37	42	42							1						
133	A37-A36	30	30													
134	A36-A35	50	50													

Sheet No:- 21

Key consultants Pvt Ltd

Sl. No.	Name of Road	Length of Pipe	Length of Pipe Line							Sluice Valves						
			100 mm (4")	150 mm (6")	200 mm (8")	250 mm (10")	300 mm (12")	350 mm (14")	400 mm (16")	100 mm (4")	150 mm (6")	200 mm (8")	250 mm (10")	300 mm (12")	350 mm (14")	400 mm (16")
		m	ft	in	m	m	ft	in	m	No.	No.	No.	No.	No.	No.	No.
139	A6-A32	41	43							1						
140	A32-A31	55	53							1						
141	A32-A33	54	54							1						
142	A25-A39	45	45							1						
143	A31-A40	28	28							1						
144	82A31-82A32	77	77							1						
145	82A33-82A34	25	25							1						
	-															
146	82F8-F27	28							48							1
	-															
147	F27-F28	149	149							1						
148	F28-F31	15	15							1						
149	F30-F31	61	61							1						
150	F36-F34	41	41							1						
	-															
151	F27- D22	47						47							1	
152	D22-D38	85						53							1	
	-															
153	D38-D39	62	62							1						
154	D39-D49	47	47							1						
	-															
155	D38- D20	180						180							1	
	-															
156	82D20-82D30	51				51							1			
157	D20-F31	25	25							1						
158	F30-C8	61			61							1				
159	C8-F29	62	62							1						
160	C8-C48	30			30							1				
161	C48- C7	26			26							1				
162	C7-C17	61			61							1				
163	C17-C25	125			125							1				
164	C25-C26	69			69							1				
165	C26-C27	51	51							1						
166	C26-C45	29			29							1				
167	C45-C14	38			38							1				
168	C14-C42	57		57						1						

Key consultants Pvt Ltd

Sheet No: 22

Sr No	Name of Road	Length of Pipe	Length of Pipe Line							Sluice Valves						
			100 mm (4")	150 mm (6")	200 mm (8")	250 mm (10")	300 mm (12")	350 mm (14")	400 mm (16")	100 mm (4")	150 mm (6")	200 mm (8")	250 mm (10")	300 mm (12")	350 mm (14")	400 mm (16")
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
165	C42-C43	57	57							1						
166	C43-C44	39	39							1						
167	C42-C24	91		91							1					
168	C24- C22	36		36						1						
169	C22- C21	64		64						1						
170	C21-C31	10	10							1						
171	C21-C1	170		170							1					
172	C1-F35	64	64							1						
173	F35- C2	37	37							1						
174	C2- C4	61	61							1						
175	B35-F32	35	35							1						
176	C2- B11	66		66							1					
177	B11-B13	124	124							1						
178	B11-B10	54	54							1						
179	B10-F33	92	92							1						
180	B10- B9	56	56							1						
181	B9- B31	62	62							1						
182	B31- B30	41	41							1						
183	B31- B32	7	7							1						
184	B30- B35	118	118							1						
185	B24-B25	48	48							1						
186	B25- B23	90	90							1						
187	B25- B26	11	11							1						
188	B26- B34	126	126							1						
189	B26- B27	47	47							1						
190	B27- B28	89	89							1						
191	B27- B22	87	87							1						
192	B28B22-B2B33	87	87							1						

Sr No.	Name of Road	Length of Pipe Line								Sluice Valves							
		Length of Pipe	100 mm I/d	150 mm I/d	200 mm I/d	250 mm I/d	300 mm I/d	350 mm I/d	400 mm I/d	100 mm I/d	150 mm I/d	200 mm I/d	250 mm I/d	300 mm I/d	350 mm I/d	400 mm I/d	
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.	
193	82D/90-	69					69							1			
194	D29 - D24	75	75							1							
195	D23-D26	144					144							1			
196	D25-82C16	27				27							1				
197	82C16-82C52	217		217							1						
198	C22-C53	81	81							1							
199	C53-C54	138	138							1							
200	C54-C38	24		24							1						
201	C38-C60	38	38							1							
202	C38-C35	84		84							1						
203	C35-C13	149	149							1							
204	C35-C55	60		60							1						
205	C25-C12	158	158							1							
206	C35-C50	72		72							1						
207	C50-C51	79	79							1							
208	C50-C25	66	66							1							
209	C39-C48	137	137							1							
210	C51-C56	99	99							1							
211	C56-B7	87	87							1							
212	B7-B12	100	100							1							
213	C54-C31	56	56							1							
214	C51-C32	35	35							1							
215	C31-C30	59	59							1							
216	C30-C29	10	10							1							
217	82C30-82C49	52	52							1							
218	82C16-82C18	42			42												

Sheet No:- 24

For Key consultants Pvt Ltd

Sr No	Name of Road	Length of Pipe	Length of Pipe Line						Sluice Valves						
			100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
219	C18-C20	81				81							1			
220	B20-B25	135				135							1			
221	B25-B24	65	65							1						
	SECTOR B5-															
222	B24-B5B25	71				71							1			
223	B26-B25	30				30							1			
224	B25-B27	75				75							1			
225	B27-B30	45				45							1			
226	B21-B29	51	51							1						
227	B30-B24	48	48							1						
228	B20-B30	94	94							1						
229	B29-B31	40	40							1						
230	B20-B19	47			47							1				
231	B19-B31	133	133							1						
232	B30-B31	40	40							1						
233	B10-B18	41			41							1				
234	B18-B54	156		156								1				
235	B18-B17	26			26							1				
236	B17-B22	75	75							1						
237	B22-B34	167	167							1						
238	B33-B34	39		39								1				
239	B17-B16	52		52								1				
240	B16-B35	190	190							1						
241	B34-B35	37		37								1				
242	B16-B15	37		37								1				
243	B16-B02	59	59							1						
244	B15-B26	176	176							1						
245	B35-B36	39		39								1				
246	B36-C1	62		62								1				

Sheet No:-75

Sr No.	Name of Road	Length of Pipe	Length of Pipe Line						Sluice Valves						
			100 mm dia	150 mm dia	200 mm dia	250 mm dia	300 mm dia	350 mm dia	400 mm dia	100 mm dia	150 mm dia	200 mm dia	250 mm dia	300 mm dia	350 mm dia	400 mm dia
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
247	B15-B14	42		42												
248	B14-B7	52		52												
249	B7-B12	38	38							1						
250	B7-B9	67		67												
251	B9-B11	58	58							1						
252	B9-B8	32		32												
253	B8-B10	38	38							1						
254	B8-B4	48		48												
255	B4-B9	38	38							1						
256	B4-B3	31		31												
257	B3-B5	27	27							1						
258	B3-B2	169		169							1					
259	B2-B1	15	15													
260	BSB1-BSA1	156	156													
261	A1-A3	23	23													
262	A2-A9	75	75							1						
263	A2-A4	56	56							1						
264	A4-A5	97	97													
265	A5-A6	46	46													
266	C1-C2	30		30							1					
267	C2-C15	29	29													
268	C15-C19	57	57													
269	C15-C16	49	49													
270	C16-C18	51	51													
271	C16-C17	75	75													
272	C17-C10	93	93													
273	C2-B40	30	30							1						
274	B40-B41	130	130							1						
275	B40-B42	141	141							1						
276	C2-C4	52		52												
277	C4-C20	109	109							1						
278	C4-C5	33		33							1					

Sheet No:- 26

Ky consultants Pvt Ltd

Sr No.	Name of Road	Length of Pipe	Length of Pipe Line							Sluice Valves						
			100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
279	C5-B37	128	128													
280	B37-B38	28	28													
281	B38-B39	94	94													
282	C5-C6	78	78													
283	C6-C7	98	98													
284	C7-C9	111	111													
285	C8-C9	45	45													
286	C9-C10	95	95							1						
287	C10-C14	77	77							1						
288	C10-C1	58	58							1						
289	C11-C21	60	60							1						
290	&C11-&5C12	58	58													
			1433	2535	1334	1116	465	280	205	205	38	18	18	5	3	3
291	C- 82D2	35							35							
292	82D3-D 15	142							110							1
293	D13-D 12	22							22							
294	83D12-A35	225							225							
	JUNCTION 55-															1
295	A35-A35	83							83							
296	A53-A40	77						77							1	
297	A39-A39	160						160								
298	A50-A42	155	155													
299	A70-A51	60					60									
300	A51-A40	26	26							1						
301	A40-A38	41	41													
302	A38-A36	17	17							1						
303	A36-A37	135	135													
304	A38-A32	80	80							1						

Sheet No: 27

Ky consultants Pvt Ltd

Sl No	Name of Road	Length of Pipe	Length of Pipe Line							Sluice Valves						
			100 mm (4")	150 mm (6")	200 mm (8")	250 mm (10")	300 mm (12")	350 mm (14")	400 mm (16")	100 mm (4")	150 mm (6")	200 mm (8")	250 mm (10")	300 mm (12")	350 mm (14")	400 mm (16")
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
305	A32-A31	107	107													
306	A31-A25	53	53													
307	A32-A33	82	82													
308	A33-A34	60	60													
309	A34-A31	58	58													
310	A31-A41	140						140								
311	A41-E7	30				30										
312	E7-E5	212	212													
313	E5-E4	49	49								1					
314	E5-E15	65	65								1					
315	E15-E16	119	119								1					
316	E15-D17	88	88													
317	E7-83A57	25				25							1			
318	A37-b29	229				229							1			
319	E20-E21	80			80											
320	E21-E27	159	159													
321	E27-E26	56	56													
322	E26-b38	93	93													
323	E27-b29	107	107								1					
324	E29-b30	7	7								1					
325	b29-E24	34	34								1					
326	E27-b33	99	99								1					
327	b33-b34	49	49								1					
328	b34-E35	46	46													
329	E21-b23	32			32								1			

Sheet No:- 26

Key Instruments Pvt Ltd

Sr No.	Name of Road	Length of Pipe	Length of Pipe Line							Sluice Valves						
			100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia
		m.	m.	m.	m.	m.	m.	m.	m.	No.	No.	No.	No.	No.	No.	No.
330	D22-A21	75			75							1				
331	A23-A21	82	82							1						
332	A22-B23	33		33												
333	B23-B25	30		30												
334	B25-A24	87		87												
335	A24-A59	136	136							1						
336	A58-A60	107	107							1						
337	A11-A11	56		56												
338	A11-A10	181		181												
339	A10-A15	49	49							1						
340	A10-A7	55		55							1					
341	A7-A7	95	95							1						
342	A7-A20	70	70							1						
343	A7-A1	56		56							1					
344	A1-A3	62	62							1						
345	A1-A4	22	22							1						
346	A1-A2	199	199							1						
347	A2-A2	42	42							1						
348	A10-A9	181	181							1						
349	A9-A6	52	52							1						
350	A6-A20	43	43							1						
351	A6-A3	56	56							1						
352	A3-A5	37	37							1						
353	A9-A12	58	58							1						
354	A12-A13	54	54							1						
355	A13-A15	53	53							1						
356	A15-A16	38	38							1						
357	89A15-83A15	39	39							1						

Sheet No:-29

S. No.	Name of Road	Length of Pipe	Length of Pipe Line. 100 mm DI	150 mm DI	200 mm DI	250 mm DI	300 mm DI	350 mm DI	400 mm DI	Sluice Valves 100 mm DI	150 mm DI	200 mm DI	250 mm DI	300 mm DI	350 mm DI	400 mm DI
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
358	A41-B6	20				20							1			
359	B5-B4	211		211												
360	B4-B14	113	113							1						
361	B14-B13	56	56							1						
362	B13-B15	115	115							1						
363	B13-B11	28	28							1						
364	B11-B12	47	47							1						
365	B11-B10	30	30							1						
366	B10-B2	160	160							1						
367	B2-C2	113	113							1						
368	B2-C1	49	49							1						
369	C10-C8	49	49							1						
370	C8-C1	169	168							1						
371	C1-B12	56	56							1						
372	B6-A42	37				37							1			
373	A42-A56	13				13							1			
374	A56-B3	83	83							1						
375	A56-A43	40				40							1			
376	A43-A55	55	55							1						
377	A43-A57	9				9							1			
378	A57-A44	49				49							1			
379	A44-A54	100	100							1						
380	A44-C1	209	209							1						
381	A44-A45	55				55							1			
382	A45-A48	71	71							1						
383	A46-B7	57	57							1						

Sheet No.-20

Ryconsultants Pvt. Ltd.

Sr No.	Name of Node	Length of Pipe	Length of Pipe Line								Sluice Valves						
			100 mm (4")	150 mm (6")	200 mm (8")	250 mm (10")	300 mm (12")	350 mm (14")	400 mm (16")	500 mm (20")	150 mm (6")	200 mm (8")	250 mm (10")	300 mm (12")	350 mm (14")	400 mm (16")	
		m	m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
385	A46-A47	52	52									1					
386	A45-B12	208				208											
387	B12-B10	24				24							1				
388	B10-C10	206		206							1						
389	C10-C11	64	64									1					
390	C11-C7	84	84									1					
391	C7-C8	29	29														
392	C8-C12	128	128									1					
393	C7-C6	55	55														
394	C6-C13	182	182									1					
395	B12-B13	35		35													
396	B13-B14	43		43													
397	B14-B17	46		46													
398	B17-B27	8		8								1					
399	B27-B19	56		56								1					
400	B19-B21	40		40								1					
401	B21-B22	14		14								1					
402	B22-B5	87		87													
403	B2B5-B6	273	273														
404	B6-B9	78	78														
405	B4-B6	64	64														
406	B4-B9	56	56									1					
407	B2-B2	18	18														
	SECTOR B4-																
407	B2B5-B1D17	72		72								1					
408	B1D17-D14	149	149									1					
409	D17-D18	49		49								1					
410	D18-D6	30	30									1					

Sheet No: 43

Kv coefficients Pet 1.txt

Sr No.	Name of Road	Length of Pipe	Appurtenances of Water Supply														
			Length of Pipe Line							Sluice Valves							
			100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	100 mm Dia	150 mm Dia	200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia
		m	m	m	m	m	m	m	m	No.	No.	No.	No.	No.	No.	No.
411	D18-D3	128	128							1						
412	D18-D19	129	129							1						
	-															
413	D18-D'23	44		44							1					
414	D'23-D5	37	37							1						
415	D'32-D21	166		166							1					
416	D21-D7	22	22							1						
	-															
417	D7-D23	74	74							1						
418	D23-A'7	92	92							1						
419	A'7-B1	59	59							1						
420	B1-E2	22	22							1						
421	E2-E3	50	50							1						
422	E2-E4	30	30							1						
	-															
423	D7-D20	90	90							1						
424	D20-D19	143	143							1						
425	D19-D2	108	108							1						
426	D2-A2	61	61							1						
427	A2-D1	27	27							1						
428	A2-A'2	62	62							1						
429	A2-A1	53	53							1						
430	84A1-84A11	153	153							1						
431	A11-A12	53	53							1						
432	A12-A'12	53	53							1						
433	84A12-84A'11	18	18													
	Total Length	31372	7695	1558	167	737	209	237	507	98	21	3	12	1	2	5
	Road Length	36006	22033	4093	1501	1855	665	517	710	301	59	21	39	6	5	10

DESIGN STATEMENT OF SEWER

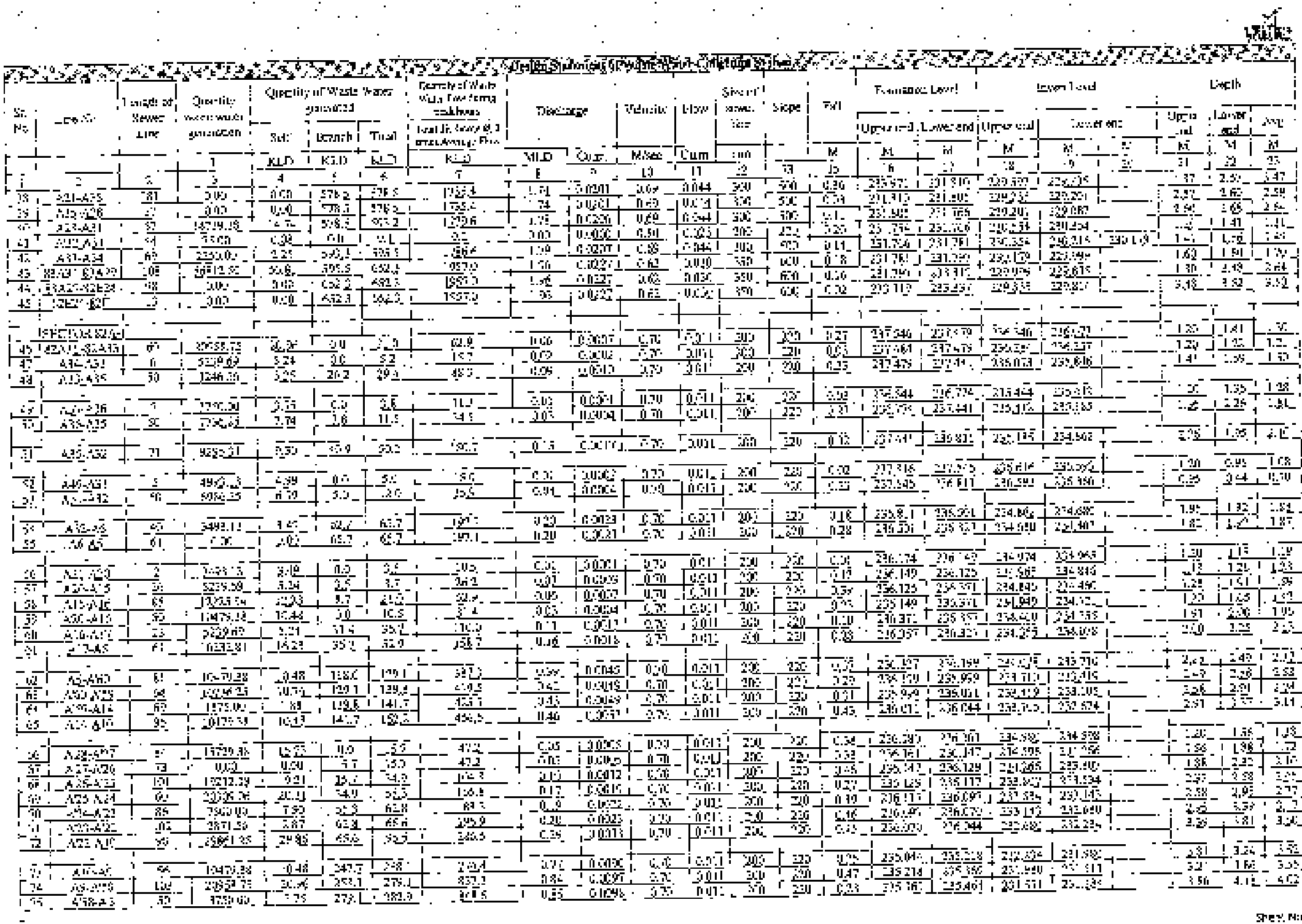
Detail of Area Residential Vatika India Next,Gurgaon

Sr. No.	Description Residential (Planned) Category of Plots	Size of Plot Width	Size of Plot Depth	Area of each Unit / Plot	Total Area		Daily Water Requirement Water Allowance	Water Requirement	Net Water Requirement	Anticipated Waste Water, Average Value at 75% of water contributing to waste water
		m	m	Sq.m.	Sq.m.	Acres	Ltrs./Capita/ Day	Ltrs./Day	Ltrs./Day	Ltrs./Day
1.11	A	4.50	12.50	56.25	27956	6.91	135	603855	603855	452891
1.12	A1	5.00	10.00	50.00	2600	0.64	135	62180	62180	46635
1.13	B	8.20	18.40	150.88	21570	5.33	172.5	333011	333011	249758
1.14	C	10.51	19.04	200.68	24183	6.05	172.5	284108	284108	213081
1.15	D	8.20	18.40	150.88	54468	13.46	172.5	840079	840079	630059
1.16	E	10.69	19.06	201.82	54291	13.42	172.5	626634	626634	469975
1.17	F	10.00	24.00	254.40	53326	8.23	172.5	305066	305066	228800
1.18	F1	11.30	22.00	250.80	43588	10.72	172.5	402871	402871	302155
1.19	G	12.30	24.00	295.20	60765	15.76	172.5	503810	503810	377858
1.20	H	14.13	23.36	330.07	52481	12.97	172.5	370271	370271	277703
	HI	12.98	25.77	334.49	31442	7.77	172.5	218903	218903	164177
1.22	H2	13.68	25.00	342.00	4788	1.18	172.5	32603	32603	24452
1.23	I	15.80	25.00	400.92	24464	7.28	172.5	167670	167670	125753
1.24	II	14.50	28.80	417.60	418	0.10	172.5	2329	2329	1747
1.25	J	15.90	25.90	411.81	9060	2.24	172.5	51213	51213	38424
1.26	K	14.40	27.60	339.84	9516	2.35	172.5	65205	65205	48904
1.27	L	11.62	25.91	301.07	1806	0.45	172.5	13073	13073	9804
1.28	M	9.94	20.56	205.39	13967	3.45	172.5	158355	158355	118766
	Sub Total				478793	118.31		5042756	5042756	3782067
2	Area under Group Housing				113311	28.00	172.5	1449900	1449900	1086750
3	Commercial Area			Sqm	Sqm	Acres				
3.1	Commercial Area				52060	12.87	25000	321750	321750	241313
3.2	Nursing Home	2.21		1127	8944	2.21	5000	40000	40000	30000
4	Community Area			Acres	Sqm	Acres				
4.1	High School		16.76	5.00	67825	16.76	150000	450000	450000	337500
4.2	Primary School		4.22	1.00	17078	4.22	50000	200000	200000	150000
4.3	Nursery School		1.54	0.20	6232	1.54	10000	60000	60000	45000
4.4	Creche		0.75	0.20	3035	0.75	10000	30000	30000	22500
4.5	Dispensary		2.20	1.25	9146	2.26	25000	56500	56500	42375
4.6	Club / Community		4.11	2.00	16632	4.11	25000	102750	102750	77063
4.7	Religious Building		0.59	0.20	2388	0.59	10000	20000	20000	15000
4.8	Taxi Stand		0.1605	0.50	12790	3.16	5000	30000	30000	22500
4.9	Police Post		1.02	1.02	4128	1.02	25000	25500	25500	19125
4.10	Health Centre		2.68	2.68	10843	2.67	25000	65750	65750	49313
	Sub Total				149826	37.04		1040500	1040500	780375
5	Undetermined use				730043	34.26	25000	856500	856500	642375
5	Green Area			13.16	532342	13.16	25000	329000		
5.1	Organised Green - Area under Green			8.6	34762.3	8.59	25000	214750		
5.2	Residential Green				88010	21.750		543750		
	Sub Total				754076	18.709	10000	187000		
6	Area under Master Roads				486483	120.214	10000	1302140		
7	Area under Roads				1591850	393.358		10683390	8741506	6906942
	Total Area / Total Demand					1,591.82		9234396	7301506	5924172
	Fire Demand Plotted									

M/s Ke Consultants Pvt Ltd

vatika

Abstract of Sewer Pipe Line											
	STT 1			STP 2			STT 3				
	Length	Average Depth	Manhole	Length	Average Depth	Manhole	Length	Average Depth	Manhole	Total Length	Total ManHoles
200	5018	1.69	254	10688	1.74	535	4962	1.91	253	20668	1042
250	570	2.27	27	920	3.61	47	745	3.41	38	2235	112
300	944	3.96	48	923	3.09	46	666	3.49	34	2533	128
350	0	0	0	879	4.80	43	457	3.28	23	1336	66
400	0	0	0	787	3.94	39	0	0	0	787	39
450	67	4.22	3	0	0	0	15	4.45	1	82	4
500	0	0	0	408	4.67	21	0	0	0	408	21
700	46	4.34	3	94	5.19	5			0	140	8
	6645		335	14699		736	6845		349	28189	1420



Design Statement for Proposed Main Outfall Sewer

Sr. No	Length of Sewer Line	Quantity wastewater generation	Quantity of Waste Water generated: Sub	Branch	Total	Density of Waste Water Flowing in sewer Average Flow	Discharge MLD	Discharge Cusec	Velocity Mtrs	Flow Cum	Sewer size mm	Slope 1:00	Full M	Freeboard Level: Upper end M	Freeboard Level: Lower end M	Invert Level: Upper end M	Invert Level: Lower end M	Depth: Upper end M	Depth: Lower end M	Depth: Avg M
			KLD	KLD	KLD	KLD														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
38	A21-A25	281	0.00	576.2	576.2	1728.4	1.71	0.0201	0.67	0.044	300	500	0.36	235.971	231.910	229.627	226.035		2.57	2.52	2.47
39	A25-A26	97	0.00	0.00	576.2	576.2	1728.4	1.71	0.0201	0.69	0.044	300	500	0.34	231.910	231.602	229.227	225.201		2.68	2.65	2.66
40	A26-A27	97	18719.18	0.00	576.2	576.2	1728.6	1.71	0.0200	0.68	0.044	300	500	0.31	231.602	231.165	229.201	229.082		2.40	2.08	2.24
41	A27-A31	97	18719.18	0.00	576.2	576.2	1728.6	1.71	0.0200	0.68	0.044	300	500	0.31	231.165	230.728	229.082	228.454		2.08	1.67	1.88
42	A31-A41	97	18719.18	0.00	576.2	576.2	1728.6	1.71	0.0200	0.68	0.044	300	500	0.31	230.728	230.291	228.454	227.826		2.27	1.87	2.07
43	A41-A54	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
44	A54-A55	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
45	A55-A56	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
46	A56-A57	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
47	A57-A58	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
48	A58-A59	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
49	A59-A60	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
50	A60-A61	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
51	A61-A62	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
52	A62-A63	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
53	A63-A64	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
54	A64-A65	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
55	A65-A66	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
56	A66-A67	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
57	A67-A68	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
58	A68-A69	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
59	A69-A70	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
60	A70-A71	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
61	A71-A72	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
62	A72-A73	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
63	A73-A74	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
64	A74-A75	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
65	A75-A76	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
66	A76-A77	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
67	A77-A78	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
68	A78-A79	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
69	A79-A80	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
70	A80-A81	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
71	A81-A82	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
72	A82-A83	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
73	A83-A84	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
74	A84-A85	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47
75	A85-A86	69	13320.00	0.00	0.0	0.0	0.0	0.00	0.00	0.000	300	500	0.00	230.291	230.291	227.826	227.826		2.47	2.47	2.47

Table 1

Quantity of Waste Water

Source Notes

| | | |

Design Statement of Waste Water Collection System

Sr. No	Line No	Length of Sewer Line	Quantity waste water generation	Quantity of Waste Water generated			Quantity of Waste Water flow during peak hours	Discharge		Velocity	Flow	Size of sewer line	Slope	Fall	Formation Level		Invert Level			Depth		
				Self	Branch	Total	Total discharge @ 3 times Average Flow								Upper end	Lower end	Upper end	Lower end		Upper end	Lower end	Avg
			L	KLD	KLD	KLD	KLD	MLD	Cu.m.	M/sec	Cu.m.	mm		M	M	M	M	M	M	M	M
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
374	A13-A12	3	3206.25	3.20	0.00	3.20	9.60	0.01	0.0001	0.70	0.011	300	220	0.01	229.728	229.724	228.928	228.514		1.20	1.21	1.20
375	A12-A12	53	4180.63	4.10	0.00	4.10	12.30	0.01	0.0001	0.70	0.011	300	220	0.24	229.725	229.724	228.525	228.296		1.20	1.43	1.31
376	A12-A11	54	2735.63	2.73	7.40	10.13	30.38	0.03	0.0004	0.70	0.011	300	220	0.25	229.724	229.717	228.296	228.048		1.43	1.67	1.55
377	A11-A1	141	10693.13	10.69	10.13	20.82	62.47	0.06	0.0007	0.70	0.011	300	220	0.66	229.717	229.688	228.048	227.408		1.67	2.28	1.97
378	A1-A2	53	6592.50	6.59	20.82	27.42	82.25	0.08	0.0010	0.80	0.023	300	220	0.24	229.688	229.495	227.408	227.167		2.28	2.33	2.30
379	A2-A2	30	6671.25	6.67	0.00	6.67	20.01	0.02	0.0002	0.70	0.011	300	220	0.14	229.507	229.495	228.307	228.171		1.20	1.32	1.26
380	D1-A2	37	4983.75	4.98	0.00	4.98	14.93	0.01	0.0002	0.70	0.011	300	220	0.24	229.506	229.495	228.306	228.069		1.20	1.43	1.31
381	A2-D2	62	3817.50	3.81	39.07	42.88	128.65	0.12	0.0015	0.80	0.023	300	220	0.28	229.495	229.380	227.167	226.885		2.33	2.70	2.51
382	D2-D15	136	12301.88	12.30	42.88	54.19	162.55	0.16	0.0019	0.70	0.011	300	220	0.53	229.380	229.755	226.885	226.333	226.010	2.70	3.58	3.64
383	D19-D18	129	18972.13	18.97	54.18	73.16	219.48	0.22	0.0025	0.61	0.015	350	400	0.52	229.730	229.950	226.333	226.010	225.985	3.46	3.74	3.57
384	D3-D18	145	26105.75	26.10	0.00	26.10	78.31	0.06	0.0009	0.70	0.011	300	220	0.86	229.777	229.730	228.777	227.918	227.868	1.20	1.85	1.52
385	D6-D18	42	7155.00	7.16	0.00	7.16	21.47	0.02	0.0002	0.70	0.011	300	220	0.19	229.760	229.750	228.560	228.369	228.315	1.20	1.38	1.29
386	D18-D17	53	2733.75	2.73	199.90	202.63	607.89	0.61	0.0026	0.61	0.023	300	500	0.11	229.750	229.740	225.832	225.726		3.92	4.01	3.97
387	D4-D4D17	132	16656.25	16.66	0.00	16.66	49.97	0.05	0.0006	0.80	0.025	300	220	0.60	229.773	229.740	228.573	227.973		1.20	1.77	1.48
388	D4D17-B9B8	77	0.00	0.00	219.49	219.49	658.46	0.66	0.0076	0.69	0.024	300	500	0.17	229.740	230.018	225.726	225.590		4.01	4.44	4.23
389	B9B8-B5B9	10	4985.75	4.98	0.00	4.98	14.95	0.01	0.0002	0.70	0.011	300	220	0.14	230.765	230.760	229.565	229.429		1.20	1.33	1.27
390	B5-B4	54	1500.00	1.50	4.98	6.48	19.45	0.02	0.0002	0.70	0.011	300	220	0.25	230.760	230.748	229.429	229.183		1.33	1.56	1.45
391	D5-B4	62	13051.88	13.05	0.00	13.05	39.16	0.04	0.0005	0.70	0.011	300	220	0.28	230.760	230.748	229.560	229.278		1.20	1.47	1.33
392	B4-B3	86	0.00	0.00	19.54	19.54	58.61	0.06	0.0007	0.70	0.011	300	220	0.39	230.748	230.674	229.183	228.792		1.56	1.88	1.72
393	B5-B5B5	206	33552.50	33.55	19.54	53.09	159.26	0.16	0.0018	0.70	0.011	300	220	0.92	230.674	230.018	228.792	227.456		1.88	2.16	2.02
394	B5B5-B5B22	54	0.00	0.00	271.18	271.18	813.53	0.81	0.0094	0.61	0.022	300	500	0.17	230.018	229.901	225.590	225.412		4.44	4.49	4.46
395	B5B5-B21	35	0.00	0.00	271.18	271.18	813.53	0.81	0.0094	0.70	0.011	300	220	0.16	229.901	229.806	225.412	225.253	225.228	4.49	4.55	4.52
396	D21-B10	18	4015.25	4.02	271.18	275.22	825.67	0.83	0.0096	0.61	0.022	300	500	0.04	229.806	229.636	225.228	225.192		4.58	4.44	4.51
397	B19-D27	53	8535.25	8.55	275.22	283.77	851.30	0.85	0.0099	0.61	0.022	300	500	0.11	229.636	229.332	225.192	225.086		4.44	4.24	4.34
398	B27-D17	14	0.00	0.00	283.77	283.77	851.30	0.85	0.0099	0.61	0.022	300	500	0.03	229.332	229.267	225.086	225.058		4.24	4.21	4.23
399	B17-B14	56	10799.25	10.80	283.77	294.56	883.69	0.88	0.0102	0.61	0.022	300	500	0.11	229.267	229.433	225.058	224.948		4.21	4.50	4.37
400	B14-B13	35	6725.63	6.73	296.56	301.29	903.87	0.90	0.0105	0.61	0.022	300	500	0.08	229.483	229.709	224.948	224.870		4.54	4.84	4.69
401	B9B13-B3B13	16	0.00	0.00	301.29	301.29	903.87	0.90	0.0105	0.61	0.022	300	500	0.03	229.709	229.609	224.870	224.838		4.84	4.76	4.80
402	B7B13-B9C10	313	19668.75	19.67	874.02	894.69	2683.9	2.58	0.0311	0.69	0.044	300	500	0.43	229.600	228.651	224.838	224.412	224.222	4.76	4.23	4.50
403	C11-C10	76	6834.38	6.83	0.00	6.83	20.50	0.02	0.0002	0.70	0.011	300	220	0.35	228.744	228.651	227.546	227.220		1.10	1.33	1.22
404	B9C10-B9C7	87	4687.50	4.69	931.33	936.01	2716.0	2.72	0.0315	0.69	0.101	450	850	0.08	228.543	228.308	224.299	224.220	224.033	4.34	4.04	4.22
405	C13-C6	215	19138.25	19.14	0.00	19.14	57.41	0.06	0.0007	0.70	0.011	300	220	0.98	228.335	228.128	227.135	226.158		1.20	1.97	1.59
406	B9C6-B9C7	71	187.50	0.19	19.14	19.32	57.97	0.06	0.0007	0.70	0.011	300	220	0.32	228.128	228.308	226.158	225.834		1.97	2.47	2.22
407	B9C9-B9C8	31	7500.00	7.50	935.34	952.44	2798.5	2.80	0.0324	0.73	0.255	700	1400	0.03	228.308	228.275	224.033	224.011		4.28	4.26	4.52
408	B9C10-B9C8	147	13847.06	13847	0.00	138.47	413.41	0.42	0.0048	0.70	0.011	300	220	0.67	228.530	228.275	227.330	226.663		1.20	1.71	1.46
409	B9C8-STP1	15	0.00	0.00	1071.3	1071.3	3213.9	3.21	0.0372	0.73	0.255	700	1400	0.01	228.275	228.274	224.011	224.000	223.64(2)	4.26	4.27	4.27
		38236	8284185	5284																		

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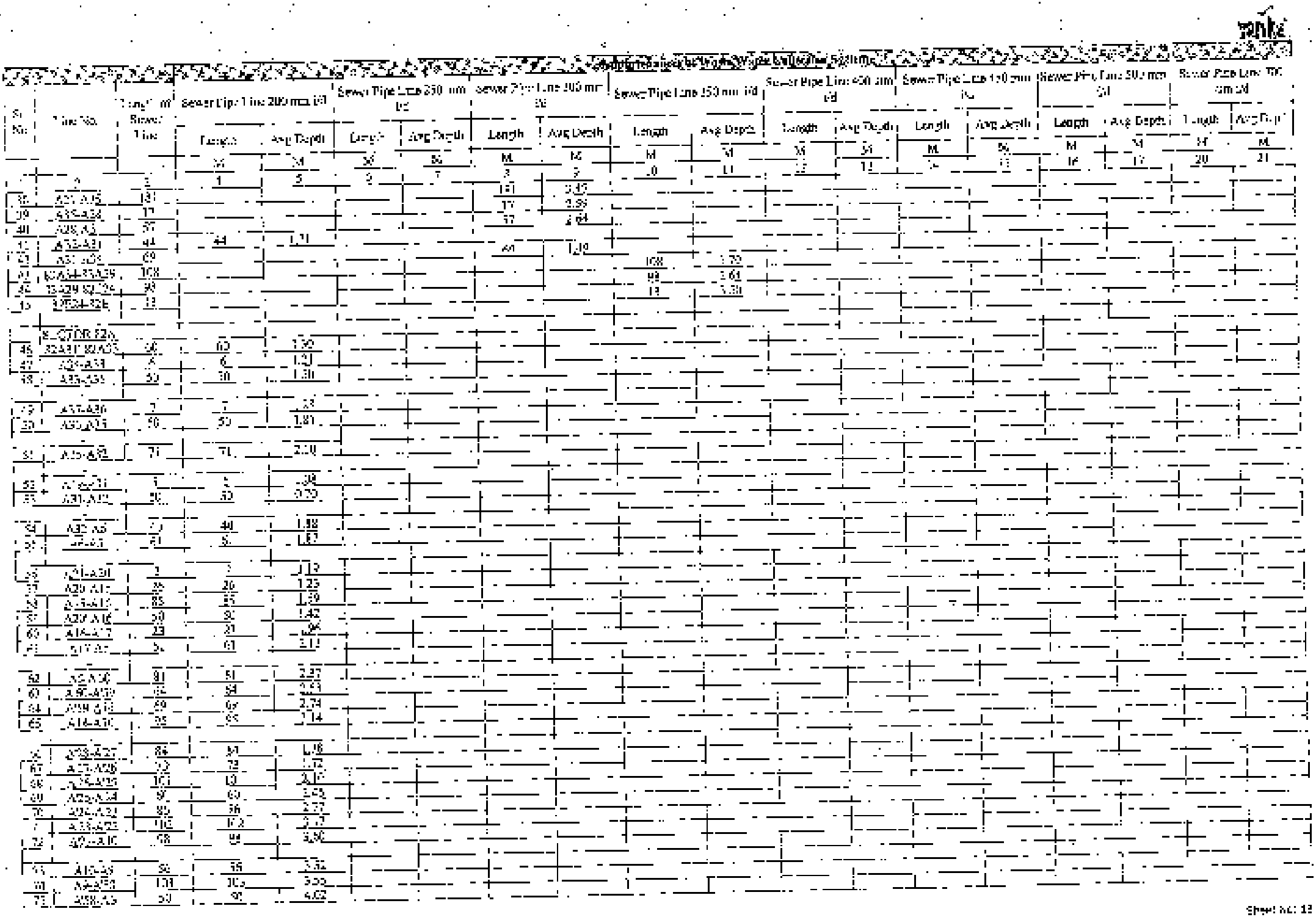
Sr. No.	Line No	Length of Sewer Line	Sewer Pipe Line 200 mm dia		Sewer Pipe Line 250 mm dia		Sewer Pipe Line 300 mm dia		Sewer Pipe Line 350 mm dia		Sewer Pipe Line 400 mm dia		Sewer Pipe Line 450 mm dia		Sewer Pipe Line 500 mm dia		Sewer Pipe Line 900 mm dia	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	[illegible]	46	46	1.62														
2	A3-A4	153	153	1.42														
3	A8-A9	41	41	1.29														
4	A5-A6	41	41	1.35														
5	A6-A7	32	32	1.92														
6	A20-A7	18	18	.90														
7	A7-A8	105	105	3.42														
8	A3-A10	56	56	1.85														
9	A-CA1	40	40	1.99														
10	A4-A5	53	53	1.45														
11	A20-A6	48	48	1.00														
12	A4-A5	56	56	1.39														
13	A16-A15	6	6	1.24														
14	A15-A13	40	40	1.45														
15	A14-A12	57	57	1.64														
16	A19-A12	54	54	1.32														
17	A12-A9	54	54	2.16														
18	A5-A10	175	125	2.66														
19	A13-A10	50	50	1.26														
20	A10-A_1	125			125	3.99												
21	A21-A10	23	23	1.31														
22	A11-A14	51			51	3.01												
23	A40-A37	75	0	1.56														
24	A39-A38	101	101	3.01														
25	A18-A35	110			110	2.81												
26	A35-A33	45			45	2.8												
27	A32-A26	27	27	1.28														
28	A29-A30	35	35	1.30														
29	A31-A27	44	44	1.28														
30	A28-A26	27	0	0														
31	A26-A25	68	68	3.79														
32	A23-A24	49	49	2.15														
33	A21-A22	93	93	2.57														
34	A21-A20	44	44	3.00														
35	A20-A25	81	81	3.60														
36	A23-A21	19	19	1.05														
37	A-CA1	91					91	4.27										

Sheet No-12

For Consultants Pvt Ltd



Sl No	Line No.	Length of Sewer Line	Sewer Pipe Line 200 mm Id		Sewer Pipe Line 250 mm Id		Sewer Pipe Line 300 mm Id		Sewer Pipe Line 350 mm Id		Sewer Pipe Line 450 mm Id		Sewer Pipe Line 500 mm Id		Sewer Pipe Line 600 mm Id		Sewer Pipe Line 700 mm Id	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
	A	1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
38	A37-A35	181					181	3.45										
39	A35-A34	177					177	3.39										
40	A34-A2	97					97	2.64										
41	A33-A31	44	44	1.71														
42	A31-A30	69					69	1.19										
43	A30-A28+A29	108							108	1.22								
44	A28+A29-A26	98							98	1.61								
45	A26-A24	13							13	1.31								
	B_OTHER 22A																	
46	B2A31-B2A30	60	60	1.30														
47	A29-A31	6	6	1.30														
48	A35-A33	30	30	1.30														
49	A32-A30	2	2	1.30														
50	A30-A28	50	50	1.81														
51	A25-A24	71	71	2.10														
52	A27-A31	2	2	1.30														
53	A31-A29	50	50	0.70														
54	A29-A27	40	40	1.88														
55	A27-A25	81	81	1.87														
56	A31-A30	2	2	1.12														
57	A29-A28	20	20	1.23														
58	A28-A26	85	85	1.29														
59	A26-A25	90	90	1.42														
60	A25-A23	23	23	1.66														
61	A24-A22	24	61	2.17														
62	A26-A24	81	81	2.27														
63	A25-A23	84	84	2.23														
64	A23-A22	69	69	2.29														
65	A22-A21	25	25	2.14														
66	A23-A21	84	84	1.16														
67	A21-A20	72	72	1.21														
68	A20-A19	103	103	1.17														
69	A20-A18	97	97	1.43														
70	A20-A21	85	85	2.27														
71	A19-A18	102	102	2.17														
72	A18-A16	98	98	2.36														
73	A16-A15	86	86	2.32														
74	A15-A13	101	101	2.02														
75	A13-A12	90	90	4.02														

By Consultants Pvt Ltd

Quantities of Work Water Collection System

Sr. No.	From-To	Length of Sewer Line	Sewer Pipe Line 200 mm Dia		Sewer Pipe Line 250 mm Dia		Sewer Pipe Line 300 mm Dia		Sewer Pipe Line 350 mm Dia		Sewer Pipe Line 400 mm Dia		Sewer Pipe Line 450 mm Dia		Sewer Pipe Line 500 mm Dia		Sewer Pipe Line 600 mm Dia	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
	1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	20	21
76	A-76-77	22	22	4.80														
77	A2-77	56	56	4.22														
78	B2A-B1A1	139	139	1.5														
79	A2A1-A2A1	73			73	3.07												
80	A2A-A2	200			200	3.06												
81	B14-B13	69			69	4.35												
82	B1A-B1	138					138	4.40										
83	C2-C1	16	16	1.15														
84	B1A-B1	15	15	1.12														
85	A1A-A2	35					35	4.06										
86	B15-B12	139	139	1.59														
87	B3-B2	75	75	1.28														
88	B12-B14	35					35	4.35										
89	D2-C2	75	75	1.28														
90	C2-C3	70	70	1.24														
91	B2A-B3	150	150	1.67														
92	D1-C1	54	54	2.02														
93	B-C1	185							139	4.29								
94	B2A-B2A	67							49	4.26								
95	B3-B1A1	17											5	4.45				
		2600	1734	1.97	345	3.01	696	3.49	487	4.28	9		19	4.45	9		0	
96	B2A-B2A1	47	47	1.30														
97	B2-B2A1	71	71	1.56														
98	B1A1-B2A1	70	70	1.33														
99	B2A1-B2A2	15	15	1.74														
100	B2A2-	35	35	1.66														
		238	238	1.59														
	SECTION B2-																	
101	B2A1-B2B2	91	91	1.35														
102	B22-B27	62	62	1.62														
103	B28- B29	93	93	1.40														
104	B27- B26	79	79	1.28														
105	B25- B26	102	102	1.35														
106	B26-B25	5	5	1.72														
107	B32- B34	42	42	1.28														
108	B35-B33	51	51	1.46														
109	B35- B32	95	95	1.41														
110	B38- B36	3	3	1.82														
111	B35- B33	43	43	1.40														
112	B31- B30	46	46	1.84														
113	B29- B28	93	93	1.50														
114	B30- B9	94	94	1.91														
115	B9- B10	56	56	2.18														

Sr. No.	Line No.	Design Inlet Sewer Time	Sewer Pipe Line 200 mm (a)		Sewer Pipe Line 250 mm (b)		Sewer Pipe Line 300 mm (c)		Sewer Pipe Line 350 mm (d)		Sewer Pipe Line 400 mm (e)		Sewer Pipe Line 450 mm (f)		Sewer Pipe Line 500 mm (g)		Sewer Pipe Line 600 mm (h)	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
			M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
110	C1-C2	34	34	1.41														
112	C3-F15	2	2	1.00														
113	F15-C2	39	37	2.58														
114	F32-B10	87	87	2.22														
120	B10-B11	65	65	2.12														
121	B12-B11	68	68	1.78														
122	B11-C21	31	31	1.21														
123	C1-C23	98	108	1.65														
124	C24-C21	8	8	1.22														
125	C21-C22	66	28	1.11														
126	C23-C22	39	39	4.05														
127	C26-F32	100	100	1.22														
128	C25-C23	39	39	1.28														
129	C21-C24	98	98	1.47														
130	C22-C27	78			78	4.31												
131	C26-C25	94			94	4.5												
132	C25-C26	92			92	1.39												
133	C27-C28	87	87	1.06														
134	C28-C29	62			62	4.56												
135	C29-C31	126			126	4.60												
136	C47-D7	93			93	4.75												
137	C27-C28	14			14	4.82												
138	F30-C48	27	27	1.20														
139	C49-C30	60	60	1.33														
140	C30-C31	55	55	1.62														
141	C32-C31	43	43	1.29														
142	C31-C51	98	98	1.50														
143	47-A50	55	55	1.38														
144	411-B7	42	42	1.46														
145	B7-B8234	87	87	1.04														
146	C34-C30	37	37	2.40														
147	C14-C36	154	154	1.06														
148	C36-C35	75	75	1.89														
149	C32-C35	15	15	1.33														
150	C35-C36	69	69	2.11														
151	C51-C50	58	58	38														
152	C50-C30	99	99	3.13														

SN	Line No	Length of Sewer Line	Sewer Pipe Line 200 mm Dia		Sewer Pipe Line 250 mm Dia		Sewer Pipe Line 315 mm Dia		Sewer Pipe Line 355 mm Dia		Sewer Pipe Line 400 mm Dia		Sewer Pipe Line 450 mm Dia		Sewer Pipe Line 500 mm Dia		Sewer Pipe Line 600 mm Dia		Sewer Pipe Line 700 mm Dia	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
146	[illegible]	147	147	3.42																
147	[illegible]	[illegible]																		
148	[illegible]	98					98	3.81												
149	[illegible]	41	41	1.29																
150	[illegible]	72					72	3.85												
151	[illegible]	6	6	1.25																
152	[illegible]	40									40	4.80								
153	[illegible]	[illegible]																		
154	[illegible]	94	94	1.27																
155	[illegible]	125	125	1.50																
156	[illegible]	138	138	1.87																
157	[illegible]	40	40	2.0																
158	[illegible]	62	62	1.37																
159	[illegible]	45	45	2.15																
160	[illegible]	29	29	2.19																
161	[illegible]	[illegible]																		
162	[illegible]	147	147	1.61																
163	[illegible]	94	94	1.53																
164	[illegible]	[illegible]																		
165	[illegible]	79	79	1.27																
166	[illegible]	208	208	1.40																
167	[illegible]	[illegible]																		
168	[illegible]	55	55	1.09																
169	[illegible]	75	75	1.76																
170	[illegible]	91	91	2.09																
171	[illegible]	[illegible]																		
172	[illegible]	55	55	2.07																
173	[illegible]	94	94	2.12																
174	[illegible]	78	78	2.16																
175	[illegible]	97	97	[illegible]																
176	[illegible]	98	98	2.31																
177	[illegible]	39	39	1.24																
178	[illegible]	197			197	2.84														
179	[illegible]	[illegible]																		
180	[illegible]	96	96	1.25																
181	[illegible]	59	59	1.61																
182	[illegible]	[illegible]																		
183	[illegible]	35			35	3.30														
184	[illegible]	159	159	1.25																
185	[illegible]	97					97	3.42												
186	[illegible]	[illegible]																		
187	[illegible]	19	19	1.22																
188	[illegible]	19	19	1.27																
189	[illegible]	98	98	1.49																
190	[illegible]	55	55	1.80																
191	[illegible]	69	69	2.09																

Sr. No.	Line No.	Length of Sewer Line	Sewer Pipe Line 200 mm (M)		Sewer Pipe Line 250 mm (M)		Sewer Pipe Line 300 mm (M)		Sewer Pipe Line 375 mm (M)		Sewer Pipe Line 400 mm (M)		Sewer Pipe Line 450 mm (M)		Sewer Pipe Line 500 mm (M)		Sewer Pipe Line 700 mm (M)	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
	1	2	4	5	6	7	8	9	10	11	12	13	14	15	16	17	20	21
190	P24-P2	176	176	2.85														
191	P2-P3	54					54	1.07										
192	P19-P3	77	147	1.68														
193	P3-P4	6					6	3.20										
194	P4-P5	10	20	1.87														
195	P5-P6	10					10	3.20										
196	P27-P20	81	81	1.49														
197	P20-P5	12	9	1.45														
198	P5-P6	49					49	3.13										
199	P26-P6	43	43	1.26														
200	P6-P25	98	98	1.35														
201	P25-P5	92	92	1.56														
202	P5-P7	122					122	2.86										
203	P28-P7	75	75	1.13														
204	P27-P2	28	28	1.34														
205	P7-P8	46					46	2.69										
206	P21-P8	0					0	0.00										
207	P8-P27	43					43	2.77										
208	P34-P30	49	49	1.29														
209	P30-P28	79	79	1.46														
210	P28-P27	174	141	1.74														
211	P27-P22	36					36	3.21										
212	P22-P26	83					60	3.40										
213	P26-P24	40	40	1.28														
214	P24-P34	92	92	1.51														
215	P22-P21	153					153	2.53										
216	P31-P32-P33	69							69	5.00								
217	P34-P35	49							49	1.25								
218	P35-P36	97							97	5.00								
219	P37-P38-P39	140	140	1.45														
220	P39-P22	91	91	1.91														
221	P36-P38	8	8	1.31														
222	P35-P2	48	48	1.52														

By Consultants Pvt. Ltd

Sr. No.	Line No.	Length of Sewer Line	Sewer Pipe Line 200 mm Id		Sewer Pipe Line 250 mm Id		Sewer Pipe Line 300 mm Id		Sewer Pipe Line 350 mm Id		Sewer Pipe Line 400 mm Id		Sewer Pipe Line 450 mm Id		Sewer Pipe Line 500 mm Id		Sewer Pipe Line 600 mm Id	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
223	C3-C2	214		2.08														
224	C4-C3	89	89	1.91														
225	C5-C4	91	91	2.08														
226	C6-C5	82	82	2.00														
227	C7-C6	97	97	2.05														
228	S2-C1	28	28	2.41														
229	S2-D26	46							46	1.91								
230	D27-D26	219							219	2.11								
231	D28-D27	103							103	2.01								
232	D29-D28	92	92	1.15							92	1.92						
233	D30-D29	93																
234	D31-D30	70	70	1.27					70	2.01								
235	D32-D31	76																
236	D33-D32	55	55	1.10							93	1.82						
237	MH03-D33	65																
238	D35-MH03	92	92	1.15														
239	D36-D35	93	93	1.40														
240	D37-D36	103	103	1.22														
241	D38-D37	93	93	1.38														
242	D39-D38	174	174	1.96														
243	D40-D39	93	93	2.14														
244	D41-D40	91	91	1.22														
245	D42-D41	91	84	1.19														
246	D43-D42	93	93	2.26														
247	D44-D43	89	89	2.33														
248	D45-D44	91	91	2.33														
249	D46-D45	44	44	2.74														
250	D47-D46	97	97	3.05														
251	D48-D47	76	76	1.28														
252	MH01-D48	16	16	2.12														
253	D49-D26	93											93	1.91				
254	MH02-D49	17											17	4.25				
255	D50-D49	81											81	1.92				
256	S1-D1	93																
257	MH04-S1																	
258	S1-C1	26	26	0.96														
259	C1-C2	13	0	0.94														

Sr No	Line No.	Length of Sewer Line	Sewer Pipe Line 200 mm Dia		Sewer Pipe Line 250 mm Dia		Sewer Pipe Line 300 mm Dia		Sewer Pipe Line 350 mm Dia		Sewer Pipe Line 400 mm Dia		Sewer Pipe Line 450 mm Dia		Sewer Pipe Line 500 mm Dia		Sewer Pipe Line 600 mm Dia	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
258	C14-C10	55	55	1.13														
259	C12-C17	81	81	1.42														
260	C13-C12	103			103	1.12												
261	C15-C9	94			94	1.2												
262	C7-C6	110	110	1.56														
263	C9-C8	49			49	1.95												
264	C5-C4	65					51	2.28										
265	C16-B33	92	92	1.40														
266	B29-B37	97	97	1.65														
267	C1-C5	92	110	2.02														
268	C2-C4	17											17	2.40				
269	C20-C4	85	85	1.45														
270	C4-C3	20											20	3.47				
271	C11-B40	71	141	1.05														
272	B42 B41	139	145	1.61														
273	B40-C1	18	18	1.98														
274	C3-C2	30											30	2.37				
275	C13-C16	37	37	1.39														
276	C18-C15	36	36	1.27														
277	C16-C18	49	49	1.64														
278	C19-C17	42	42	1.23														
279	C17-C20	35	35	1.81														
280	C2-C1	45											45	3.79				
281	C1-C26	67											67	3.06				
282	B36-B35	127											27	4.06				
283	B35-B31	25	25	1.34														
284	B29 B28	45	45	1.54														
285	B21-B20	48	48	1.61														
286	B23-B22	50	50	1.82														
287	B26-B29	83	83	1.16														
288	B27-B19	47	47	1.85														
289	B31 B19	114	114	1.56														
290	B18-B16	39	39	2.04														
291	B32-B18	27	27	1.32														
292	B33-B34	32	132	1.80														
293	B38-B17	42	42	1.59														
294	B24-B15	146	146	1.91														
295	B17-B16	45	45	2.21														
296	B22-B15	64	64	1.42														
297	B35-B16	174	174	1.89														
298	B15-B13	30					16	2.42										

No Consumers Per Unit

Sheet No-19

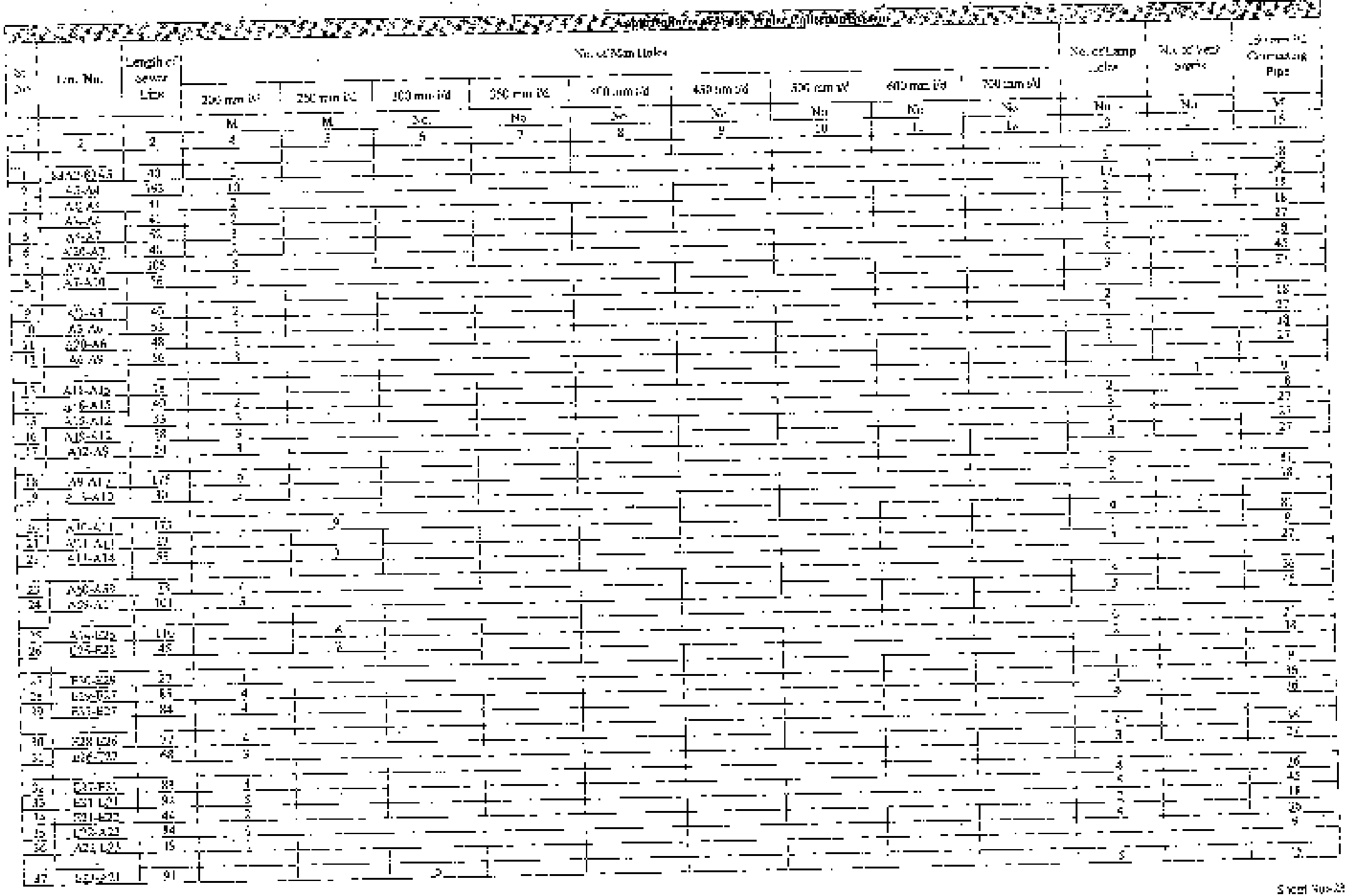
Sr. No	Dwg. No	Length of Sewer Line	Sewer Pipe Line 300 mm Ø		Sewer Pipe Line 250 mm Ø		Sewer Pipe Line 300 mm Ø		Sewer Pipe Line 350 mm Ø		Sewer Pipe Line 400 mm Ø		Sewer Pipe Line 450 mm Ø		Sewer Pipe Line 300 mm Ø		Sewer Pipe Line 250 mm Ø	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	20	21
299	B15-B16	46									46	4.35						
300	B14-B7	50									50	4.45						
301	B12-B3	46	46	1.46														
302	B7-B6	31									31	3.97						
303	B1-B6	31	49	1.38														
304	B6-B5	49									35	4.57						
305	B10-B9	47	47	1.30														
306	B4-B4	49									49	3.97						
307	B5-B4	47	47	1.30														
308	B7-B1	26									21	4.61						
309	B8-B3	10	0	1.32														
310	B9 B2	134													134	4.41		
311	B3-B1	28													28	4.95		
312	B1B1 B1A1	130													130	3.72		
313	A1-A2	30													30	4.43		
314	A2-A3	49	47	1.71														
315	A3-A4	99	97	1.62														
316	A4-A5	37	37	2.02														
317	A5-A6	20													20	7.40		
																	31	3.20
318	B1B2 B1A2	91															40	3.34
	B1B2 B1A2	91															91	3.29
		14726	15089	1.64	980	3.81	421	3.09	872	4.80	280	4.64			808	4.07		
319	A1A6-A1A7	75	75	1.83														
320	A1A7-A1A7	21	21	1.66														
321	A1-A1	32	32	1.66														
322	A10 A10	60	60	1.36														
323	A10-A11	21	21	1.27														
324	A11-A11	139	139	2.66														
325	A11-F7	17	17	2.85														
326	B5-B5	122	122	1.85														
327	B5-A43	35	35	3.91														
328	A48 A49	35	35	1.18														
329	A49-A50	182	182	1.40														
330	A50-A12	130	130	1.84														
331	A12-A38	13	13	2.61														
332	B2 A39	104	104	1.43														
333	A15-A41	47	45	2.5														
334	A08 A10	27	27	1.22														

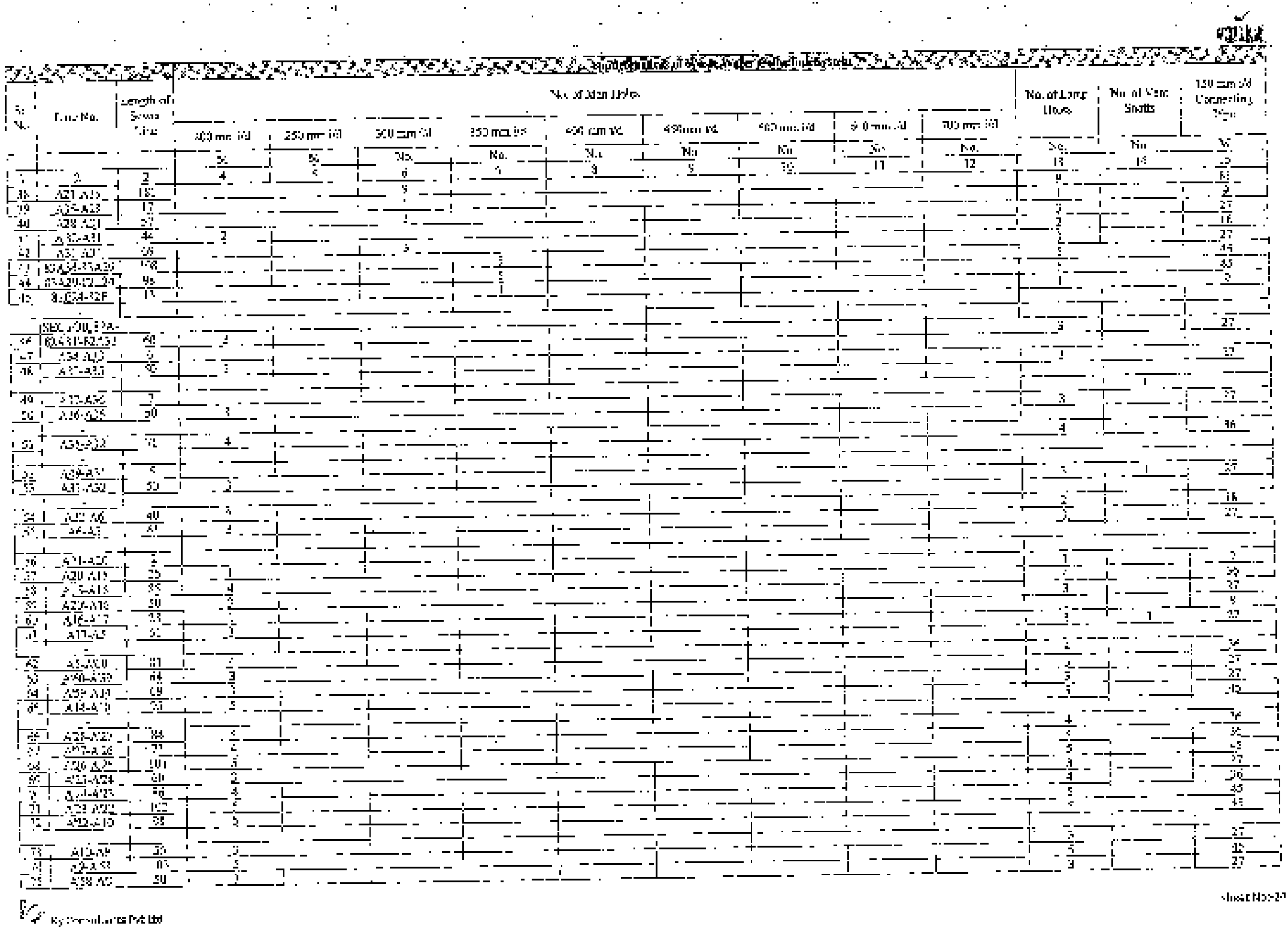
Sheet No-01

CP No	Line No	Sewer Line	Sewer Pipe Line 200 mm Ø		Sewer Pipe Line 250 mm Ø		Sewer Pipe Line 300 mm Ø		Sewer Pipe Line 350 mm Ø		Sewer Pipe Line 400 mm Ø		Sewer Pipe Line 450 mm Ø		Sewer Pipe Line 500 mm Ø		Sewer Pipe Line 600 mm Ø	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
			M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
335																		
336																		
337																		
338																		
339																		
340																		
341																		
342																		
343																		
344																		
345																		
346																		
347																		
348																		
349																		
350																		
351																		
352																		
353																		
354																		
355																		
356																		
357					40	2.34												
358					101	2.67												
359							65	3.06										
360																		
361																		
362							35	2.39										
363																		
364																		
365																		
366																		
367					48	1.40												
368					55	1.57												
369					46	2.08												
370																		
371							29	2.67										
372							159	3.09										
373																		
374							71	3.60										

Sl No	Line No.	Sewer Line	Sewer Pipe Line 200 mm (d)		Sewer Pipe Line 250 mm (d)		Sewer Pipe Line 300 mm (d)		Sewer Pipe Line 350 mm (d)		Sewer Pipe Line 400 mm (d)		Sewer Pipe Line 450 mm (d)		Sewer Pipe Line 500 mm (d)		Sewer Pipe Line 600 mm (d)	
			Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth	Length	Avg Depth
			M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
375	A11-A12	7	7	1.25														
376	A12-A13	52	52	1.31														
377	A13-A14	56	56	1.38														
378	A1-A1	142	142	1.97														
379	A1-A2	57	57	2.10														
380	A2-A3	20	20	1.26														
381	D1-D2	52	52	1.31														
382	D2-D19	62	62	2.31														
383	D19-D18	116	116	3.04														
384	D18-D13	129			129	3.57												
385	D2-D14	145	145	1.32														
386	D6-D15	92	92	2.5														
387	D15-D17	53					53	3.62										
388	D17-D16	132	132	1.66														
389	D16-D12	70					70	4.28										
390	B1-B2	37	37	1.97														
391	B2-B3	54	54	1.45														
392	B3-B4	62	62	1.35														
393	B4-B5	86	86	1.02														
394	B5-B6	205	205	2.02														
395	B6-B6P2	31					31	4.46										
396	D12-B21	45	35	4.52														
397	B21-B20	8					8	4.31										
398	D19-B17	53					53	4.34										
399	B17-B17	14					14	4.32										
400	B17-B16	55					55	4.37										
401	B16-B15	39					39	4.49										
402	B15-B6P1	16					16	4.40										
403	B6P1-B6P2	213					213	4.50										
404	C21-C10	79	79	1.25														
405	B6P2-B6P3	67													67	2.22		
406	D19-D20	315	315	1.29														
407	B6P3-B6P4	91	91	2.22														
408	B6P4-B6P5	31															31	3.32
409	B6P5-B6P6	207	147	3.16														
410	B6P6-B6P7	35															35	3.17
		28228	26668		2035		2633		1836		787		52		408		348	

Sheet No.-22



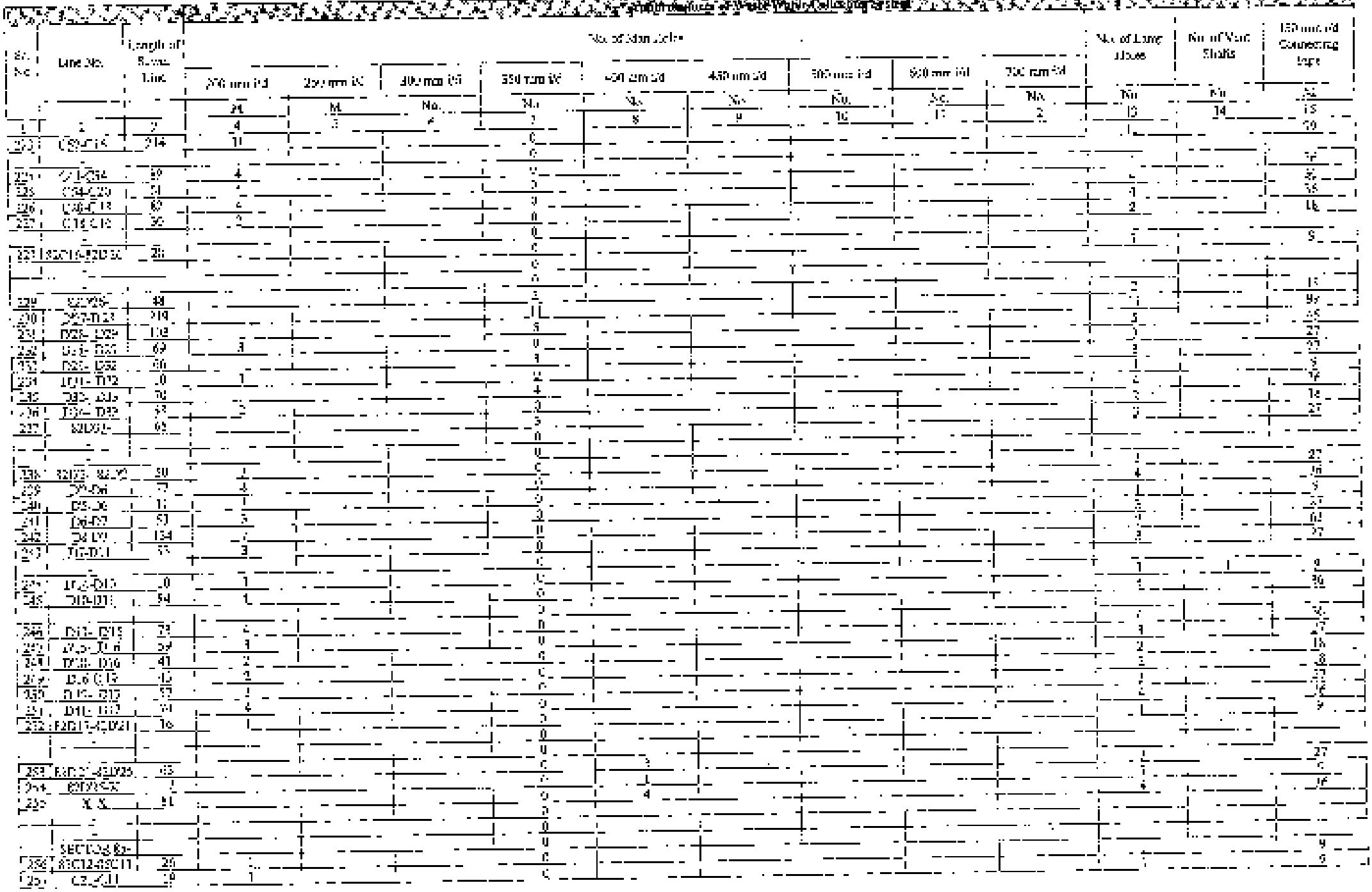


Sr. No.	Line No.	Length of Sewer Line	No. of Man Holes									No. of Drop Shafts	No. of Vent Shafts	150 mm dia Connecting Pipe
			200 mm dia	250 mm dia	300 mm dia	350 mm dia	400 mm dia	450mm dia	300 mm dia	600 mm dia	700 mm dia			
			M	M	No.	Nos.	No.	No.	No.	No.	Nos.	Nos.	Nos.	M
	1	2	4	5	6	7	8	9	10	11	12	13	14	15
76	A9-A2	24	1									1		3
77	A2-A1	35	1									2		23
78	A3a-A3-A2a	150	7									7	1	50
79	A2A1-A2B10	75		4										9
80	A2B10-	230		11								11		25
81	B1-B2-B3	60		3								3		21
82	B12-B13	226			7							7		61
83	B2-B11	10	1									1		9
84	B11-B1	70	4									4		35
85	B1- B12	58			3							3		27
86	B13- B14	125	6									6		31
87	B3 - B15	72	3									3		30
88	B16- B	53			3							3		27
89	B4-B14	70	4									4		30
90	B5-B15	70	4									4		30
91	B16-B5	150	5									5		32
92	B13 B14	94	3									1	1	27
93	B14 B19	182				9						9		51
94	B2B10-B2B	19				2						2		14
95	B15-B1P3	15						1				1		7
		3807	340	29	94	33	0	1	0	0	0	105	0	2015
96	B2A6-B2A5	47	2			0						2		13
97	B2A8-B2A6	71	2			0						2		42
98	B2A9-B2A8	80	4			0						4		56
99	B2A5-B2A4	15	1			0						1		9
100	B2A3	35	1			0						2		18
		248	10			0						240	1	27
	B2C10-B2B					0								
101	B2B1-B2B2	65	3			0						3		45
102	B2A- B2B	80	3			0						3		42
103	B2B- B2B	95	5			0						5		48
104	B2B- B2C	40	2			0						2	1	18
105	B2C- B2D	102	5			0						2		48
106	B2D B2C	5				0								3
107	B2B- B2A	85	4			0						4		42
108	B2B-B2A	61	3			0						3		21
109	B2D- B2A	65	4			0						2		45
110	B2A- B2A	5				0								
111	B2A- B2A	45	2			0						2	1	18
112	B2A- B2A	40	2			0						3		16
113	B2A- B2A	90	3			0						5		45
114	B2A- B2A	34	2			0						2		18
115	B2A- B2A	46	2			0						2		27

Sr. No.	Sec. No	Length of Sewer Line	No. of Man Holes									No. of Lamp Holes	No. of Vent Shafts	150 mm Dia Connecting Pipe
			200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	450 mm Dia	500 mm Dia	600 mm Dia	700 mm Dia			
			M	M	No	Sc.	No.	No	No	No.	No.	No	Sc.	Nos
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
116	C2-C3	34	2			0						1		15
117	C5-F15	42	2			0						2		18
118	F15-F21	32	2			0						2		15
119	F21-D19	87	4			0								
120	D19-D1	68	3			0						1		27
121	B12-B11	93	5			0						3	1	45
122	B11-B10	51	3			0						1		21
123	B10-C31	138	8			0						4		12
124	C31-C32	5				0						1		3
125	C32-C33	66	3			0						2		27
126	C33-C34	29	1			0						1		9
127	C34-C42	107	5			0						3		45
128	C42-C43	19	1			0						1		18
129	C43-C44	58	3			0						1		27
130	C44-C45	78		4		0						2		36
131	C45-C46	34		2		0						1		16
132	C46-C47	51		3		0						2		27
133	C47-C48	20	1			0						1		9
134	C48-C49	63		3		0						2		27
135	C49-C50	126		6		0						3		54
136	C50-C51	16		1		0						1		7
137	C51-C52	34		2		0						1		18
138	C52-C53	87	4			0						2		36
139	C53-C54	60	3			0						2		27
140	C54-C55	32	2			0						1		18
141	C55-C56	45	2			0						2		27
142	C56-C57	24	1			0						1		9
143	C57-C58	87	4			0						2		36
144	C58-C59	27	1			0						1		9
145	C59-C60	107	4			0						3		36
146	C60-C61	134	6			0						4		54
147	C61-C62	73	3			0						2		27
148	C62-C63	120	5			0						3		45
149	C63-C64	87	4			0						2		36
150	C64-C65	93	5			0						3		45

Sr No	Line No	Length of Sewer Line	No. of Man Holes									No. of Drop Shafts	No. of Vent Shafts	150 mm Dia Connecting Pipe
			200 mm Dia	225 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	450mm Dia	500 mm Dia	600 mm Dia	700 mm Dia			
			No	No	No	No	No	No	No.	No.	No.	No	No	No
	2	3	4	5	6	7	8	9	10	11	12	13	14	15
157	B3C39-B3C41	147	7			0						7		67
	-					0								
158	B3C48-B3C5	56			2	0						2		18
159	B3C5-B3C6	47	2			0						3		15
160	B3C6-B3C7	92			4	0								
161	B3C7-B3C8	6				0						6		11
162	B3F50-B3D30	50				0						2		16
	-					0								
163	B3B17-B3B16	97	3			0						4		18
164	B3B8-B3B7	323	5			0						6		34
165	B3B5-B3B7	198	9			0						6		31
166	B3B5-B3B6	46	2			0						3		8
167	B3B1-B3B6	69	3			0						3		27
168	B3B6-B3B3	45	2			0						3		8
169	B3B3-B3B4	19	1			0						1		9
	-					0								
170	B3B7-B3B4	207	5			0						5		12
171	B3B4-B3B1	54	3			0						4	1	37
						0								
172	B3B4-B3B5	29	1			0						1		6
173	B3B1-B3B5	208	10			0						10		96
	-					0								
174	B3D1-B3D2	51	2			0						3		27
175	B3B2-B3B2	46	2			0						3		18
176	B3B1-B3B2	94	3			0						3		27
	-					0								
177	B3B5-B3B7	51	2			0						3		27
178	B3B6-B3B7	51	2			0						3		27
179	B3B6-B3B5	19	1			0						1		9
180	B3B8-B3B6	67	3			0						3		27
181	B3B8-B3B9	64	2			0						2		27
182	B3B9-B3B10	99	3			0						3		35
183	B3B9-B3C1	207		10		0						10		90
	-					0								
184	B3B10-B3B11	80	2			0						4		18
185	B3B11-B3B7	59	3			0						5		27
						0								
186	B3B7-B3C1	55		1		0						3		33
187	B3C1-B3C2	159	8			0						8		74
188	B3C2-B3C3	57			3	0						3		33
	-					0								
189	B3B17-B3B18	16	1			0						1		2
190	B3B18-B3B19	19	1			0								
191	B3B19-B3B20	93	5			0						5		44
192	B3B20-B3B21	52	3			0						3		27
193	B3B21-B3B22	55	3			0						3		27

| Sr. No. | Line No. | Length of Sewer Line | Sch. of Man Holes | | |



Sheet No. 29

Sr No	Line No.	Length of sewer Line	No of Man Holes									No of Lamp Holes	No of Vent Shafts	150 mm Dia Connecting Pipe
			200 mm Dia	250 mm Dia	300 mm Dia	375 mm Dia	400 mm Dia	450 mm Dia	375 mm Dia	400 mm Dia	700 mm Dia			
			M	M	No.	No.	No.	No.	No.	No.	No.	No.	No.	M
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
258	C14-C15	65	1			0						3		27
259	C17-C16	91	1			0						3	1	27
260	C14-C16	108		5		0						3		45
261	C10-C9	98		1		0						3		27
262	C7-C9	110	1			0						3		54
263	C8-C9	72		2		0						2		9
264	C6-C5	65			1	0						1		27
265	B19-B18	91	1			0						3		45
266	B28-B27	20				0						1		9
267	B32-C5	149	2			0						4		63
268	C5-C3	17				0								
269	C20-C4	92	1			0						3		45
270	C4-C2	20				0						1		9
271	B41-B40	141	2			0						3		63
272	B45-B46	193	3			0						5		81
273	C1-C3	24	1			0						1		9
274	C3-C	71				0	2					3		45
275	C12-C11	37	1			0						2		18
276	C16-C16	41	1			0						2		18
277	C16-C15	49	1			0						2		18
278	C19-C5	42	1			0						2		18
279	C15-C3	25	1			0						1		9
280	C2-C1	46				0	2					3		45
281	C1-B26	92				0	2					3		27
282	B35-B15	177				0	2					6		81
283	D25-D21	71	1			0						2		54
284	B27-B21	45	1			0						3		18
285	B21-B23	48	1			0						3		18
286	B24-B23	69	1			0						3		27
287	B23-B22	91	1			0						3		36
288	B22-B19	40	1			0						3		18
289	D21-D19	118	0			0						6		54
290	B19-B18	29	1			0						3		18
291	B21-B16	37	1			0						3		27
292	B21-B18	107	1			0						6		72
293	B15-B17	42	1			0						3		18
294	B24-B17	146	1			0						3		54
295	B17-B15	40	1			0						3		18
296	B24-B15	68	1			0						3		27
297	B25-B15	174	0			0						6		81
298	B15-B13	96			1	0						3	1	18

Sl. No	Line &c.	Length of Sewer Line	No. of Man Holes										No. of Lamp Holes	No. of Vent. Shafts	150 mm Dia Connecting Pipe
			300 mm Dia	350 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	450 mm Dia	500 mm Dia	900 mm Dia	1200 mm Dia				
			M	M	No	No.	No	No.	No.	No	No.		No.	No.	M
	3		4	5	6	7	8	9	10	11	12		13	14	15
															18
29	B15-B14	46													27
30	J14-B7	50													28
31	B12-B7	47	2												27
32	B7-J5	8													18
33	B7-B6	37	2												14
34	B6-B5	35													14
35	B10-B5	37	2												15
36	B5-B4	45													18
37	B4-B4	47	2												9
38	B4-B3	28													9
39	B3-B2	20	1												12
40	B2-B1	154													6
41	B1-B1	33													12
42	B1B1-B2A	181													15
43	[illegible]	27													12
44	A2-A5	49	2												18
45	A5-A4	27	1												9
46	A4-A3	27	1												9
47	A3-A	30													12
48	A-S	34													12
	S1-S2-S3-D/A	15													6435
	-	4730	245	47	46	12	39	9	21	2	3		317	11	
119	A30-A29-A27	22	1										4		9
120	A27-A26-A25	23	1										4		9
121	A7-A6	32	2												18
122	A38-A40	22	2										2	1	18
123	A40-A39	24											6		24
124	A51-A7	139	6												
125	A11-A5	17	1										1		9
126	A5-A6	122	5										6		54
127	A5-A12	30	2										2		18
128	A43-A49	27	1										3		9
129	A49-A50	152	7										6		51
130	A50-A42	150	7												72
131	A42-A45	13	1										1		
132	A2-A55	104	5										5		42
133	A55-A53	43	2										2		18
134	A54-A51	27	1												9

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For Consultants Pvt Ltd

Sr. No.	Line No.	Length of Sewer Line	No. of Man Holes									No. of Lamp Holes	No. of Ventilators	150 mm dia Diameter Pipe
			200 mm dia	250 mm dia	300 mm dia	350 mm dia	400 mm dia	450 mm dia	500 mm dia	600 mm dia	700 mm dia			
			No	No	No	No	No.	No.	No.	No.	No.	No	No	M
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
334	A45-A57	7												
335	A9-A10	57	2									2		8
336	A44-A44	77	2									4		16
337	A37-A45	21	2									2		8
338	C1-B16	20	2									2		8
339	A46-A45	62	2									2		27
340	A43-A44	67	2									1		27
341	[illegible]	317	11									10		59
342	[illegible]													
343	B37-B47	121	6									6		34
344	B27-B15	80	5									5		25
345	B15-B1	67	4									2	1	27
346	B7-B5	140	8									4		25
347	B1-B4	80	3									4		27
348	B6-B8	97	3	1								1		27
349	B4-B14	122	6									6		32
350	B8-B9	96	3									3		27
351	B13-B13	317	6									5		27
352	B29-B31	70	1									1		9
353	B12-B11	47	2									2		8
354	B11-B10	76	2									2		18
355	B3-B2	109	3									5		45
356	B3-B10	169	3									6		72
357	B1-B3	49		2								3		18
358	B2L2-B3B1	163		4								4		42
359	B3F1-B1B12	66			3							1		27
360	[illegible]	33	2									2		18
35	A31-B13	104	6									5	1	54
362	B30-B2B12 B2B12-B1B1	23			1							1	1	9
363	B1-B4	44	2									2		18
364	B4-B5	14	1									1		9
365	B5-B6	20	1									1		9
366	B1-A1	18		2								2		18
367	A1-A2	52		5								5		45
368	D21-D7	84		1								1	1	35
369	D25-D7	71	4									4		36
370	D3-D21	29			1							1		9
371	D21-D22	154			8							8		72
372	D3-D22	71	2									2		18
373	D4-D3	67			2							2		18

Appurtenances of Waste Water Collection System

Sl. No.	Line No.	Length of Sewer Line	No. of Man Holes									No. of Lamp Holes	No. of Vent Shafts	150 mm Dia Connecting Pipe
			200 mm Dia	250 mm Dia	300 mm Dia	350 mm Dia	400 mm Dia	450mm Dia	500 mm Dia	600 mm Dia	700 mm Dia			
			M.	M.	No.	No.	No.	No.	No.	No.	No.	No.	No.	M.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	-											0		0
374	A13-A12	3										1		27
375	A13-A12	33	1									1		27
376	A12-A11	34	1									2		63
377	A11-A1	34	2									1		27
378	A1-A2	55	3									2		18
379	A2-A2	30	2									1		27
380	D1-A2	32	2									1	1	27
381	A2-D2	62	3									6		54
382	D2-D19	138	6									6		54
383	D19-D18	129		6										
	-											7		63
384	D2-D18	165	2									2		18
385	D6-D18	42	3											
	-											3		27
386	D18-D17	58			3							7		63
387	D4-84D17	158	7									4		36
388	84D17-83B5	75			4									
	-											2		18
389	83B2-83B3	30	2									3		27
390	B3-B4	34	3									3		27
391	B6-B4	62	3									4	1	36
392	B4-B5	80	4									10		90
393	B5-83B5	206	10											
	-											4		36
394	83B5-83B22	84			4							2		18
395	B22-B21	35	2									1		9
396	B21-B19	18			1							3		27
397	B19-B27	33			2									
398	B27-B17	14												
399	B17-B14	53			1							2	1	18
400	B14-B13	39			2							1		9
401	83B13-83B12	16			1									
	-													
402	83D12-83C10	213			11							11		99
403	C11-C10	76	4									4		36
404	83C10-83C7	55						2				3		27
	-													
405	C13-C6	215	11									11		99
406	83C6-83C7	73	4									4		36
	-													
407	83C7-83C8	31								0	2	2		18
408	83C12-83C8	147	7									7		63
	-													
409	83C8-STP1	15								0	1	1		9
		25226	1042	118	128	66	39	4	28	11	8	1383	38	12461

For Ky Consultants Pvt Ltd

(Director)

DESIGN STATEMENT OF RECYCLING

Revised Layout of Treated Waste Water

Sr No.	Name of Water Pipe line	Length	Outer Diameter of Water Pipe Line	Net Water Demand in Area from Recycled Water Supply	Design of Pipe Line								Length of pipe					No of Sluice Valves				
					No Water Demand			Total Water Demand	Used Loss per M	Total Head Loss	Head Loss Progressive	Terminal Head	110 mm OD	160 mm OD	210 mm OD	280 mm OD	315 mm OD	110 mm OD	160 mm OD	210 mm OD	280 mm OD	315 mm OD
					Self	Previous	Total	20 LPHD														
		m	mm	CMD	MLD	MLD	MLD	LPM	MM	MLD	MLD	MLD	m	m	m	m	m	Nos.	Nos.	Nos.	Nos.	Nos.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	STP-BS18	20	250	0	0.00	666.88	666.88	1428.91	0.0018	0.036	0.036	24.96	0	0	0	20	0	0	0	1	0	0
	-																	0	0	0	0	0
2	BS18-C12	157	160	44854	46.64	0.00	46.64	97.56	0.0011	0.168	0.204	24.80	157	0	0	0	0	1	0	0	0	0
3	C8-C9	21	250	1996	2.00	627.04	629.04	1731.79	0.0016	0.048	0.051	24.92	0	0	0	21	0	0	0	0	1	0
	-																	0	0	0	0	0
4	C9-C6	71	160	1488	1.82	90.21	92.03	96.87	0.0005	0.036	0.122	24.88	71	0	0	0	0	1	0	0	0	0
5	C6-C3	225	160	10211	30.21	0.00	30.21	62.04	0.0005	0.107	0.229	24.77	225	0	0	0	0	1	0	0	0	0
	-																	0	0	0	0	0
6	C3-C10	67	200	2484	2.85	622.96	904.84	1560.70	0.0043	0.280	0.351	24.61	0	0	67	0	0	0	0	1	0	0
7	C10-C11	36	160	4728	4.73	0.00	4.73	9.85	0.0010	0.001	0.352	24.43	36	0	0	0	0	1	0	0	0	0
8	C10-BS2	214	200	12134	17.11	580.00	597.10	1245.11	0.0041	0.879	1.231	23.73	0	0	214	0	0	0	0	1	0	0
	-																	0	0	0	0	0
	-																	0	0	0	0	0
9	BS2-BS3	15	200	950	0.72	223.57	224.29	467.42	0.0007	0.010	1.240	23.73	0	0	15	0	0	0	0	1	0	0
10	BS3-BS4	39	160	2595	2.99	206.54	209.53	436.77	0.0027	0.105	1.334	23.63	0	39	0	0	0	0	1	0	0	0
11	BS4-BS5	55	160	3592	2.59	217.05	220.55	459.91	0.0026	0.144	1.478	23.50	0	55	0	0	0	0	1	0	0	0
12	BS5-BS6	14	160	915	0.27	220.02	220.29	459.33	0.0026	0.036	1.514	23.47	0	14	0	0	0	0	1	0	0	0
13	BS6-BS7	59	160	3856	3.84	212.67	216.51	451.94	0.0026	0.153	1.670	23.33	0	59	0	0	0	0	1	0	0	0
14	BS7-BS8	18	160	2368	2.09	210.29	212.37	443.07	0.0025	0.044	1.714	23.28	0	18	0	0	0	0	1	0	0	0
15	BS8-BS9	46	160	481	0.44	206.8	210.29	438.10	0.0021	0.096	1.806	23.26	0	46	0	0	0	0	1	0	0	0
16	BS9-BS5	84	160	2787	2.09	206.83	208.87	437.10	0.0024	0.201	2.001	23.00	0	84	0	0	0	0	1	0	0	0
	-																	0	0	0	0	0
17	BS5-BS5	306	160	13751	13.73	12.98	26.71	55.65	0.0001	0.078	2.079	22.92	306	0	0	0	0	1	0	0	0	0
18	BS-B4	46	160	2678	2.65	10.31	12.96	27.05	0.0001	0.009	2.088	22.91	46	0	0	0	0	1	0	0	0	0
19	B4-B4	71	160	6953	6.77	0.00	6.75	14.07	0.0000	0.002	2.090	22.91	71	0	0	0	0	1	0	0	0	0
20	B4-B4	53	160	1922	1.83	1.67	3.50	7.30	0.0000	0.000	2.090	22.91	53	0	0	0	0	1	0	0	0	0
21	B3-B3	38	160	1650	1.62	0.00	1.62	3.40	0.0000	0.000	2.090	22.91	38	0	0	0	0	1	0	0	0	0
	-																	0	0	0	0	0
	SECTOR 54																	0	0	0	0	0
22	BS#5-B4017	55	160	3852	2.47	177.63	180.11	375.23	0.0018	0.132	2.112	22.80	0	71	0	0	0	0	1	0	0	0
23	B4017-B4	337	160	13778	13.78	0.00	13.78	28.70	0.0001	0.033	2.145	22.83	337	0	0	0	0	0	0	0	0	0
24	B17-B15	53	160	2592	2.59	161.27	163.86	341.37	0.0015	0.080	2.225	22.79	0	53	0	0	0	0	1	0	0	0
	-																	0	0	0	0	0
25	B28-B9	48	160	3055	3.05	3.00	3.05	6.36	0.0000	0.000	2.231	22.79	48	0	0	0	0	0	0	0	0	0
26	B28-B5	140	160	13507	13.51	0.00	13.51	28.14	0.0001	0.015	2.228	22.77	140	0	0	0	0	1	0	0	0	0
																		0	0	0	0	0

Sr.No.	Name of Water Pipe line	Length	Dia of Water Pipe line	Net Water Demand to meet from Recycled Water Supply	Design of Pipe Line: Net Water Demand								Length of pipe					Nos. Sluice Valves				
					Self	Previous	Total	Total Water Demand	Head Loss per M	Total Head Loss	Grad Line Progressive	Terminal Head	110 mm old	160 mm old	210 mm old	360 mm old	510 mm old	110 mm old	160 mm old	210 mm old	260mm old	310 mm old
		M	Mm	Litres	KLD	KLD	KLD	KLD	Mtr	Mtr	Mtr	Mtr	M	M	M	M	M	Nos.	Nos.	Nos.	Nos.	Nos.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
27	D13-D19	113	200	8139	8.14	82.22	90.36	108.22	0.0039	0.447	2.660	22.35	113	0	0	0	0	1	0	0	0	0
28	D19-D20	36	110	6476	6.47	0.00	6.48	12.96	0.0040	0.002	2.651	22.35	36	0	0	0	0	1	0	0	0	0
29	D20-D8	172	200	42014	42.01	36.78	78.80	184.16	0.0026	0.229	2.879	22.03	172	0	0	0	0	1	0	0	0	0
30	D1-A2	67	200	2984	2.98	64.09	66.78	75.69	0.0017	0.042	3.021	21.98	67	0	0	0	0	1	0	0	0	0
31	A2-D1	39	110	1939	1.94	0.00	1.94	1.94	0.0000	0.000	3.021	21.98	39	0	0	0	0	1	0	0	0	0
32	A2-A3	37	200	3141	3.14	0.00	3.14	6.94	0.0000	0.000	3.021	21.98	37	0	0	0	0	1	0	0	0	0
33	A1-A4	93	200	3617	3.84	28.75	32.61	61.68	0.0005	0.024	3.045	21.95	93	0	0	0	0	1	0	0	0	0
34	A4-A13	141	110	8766	8.80	16.97	25.78	87.46	0.0001	0.020	3.065	21.93	141	0	0	0	0	1	0	0	0	0
35	A13-D12	59	200	11909	12.00	4.97	16.97	55.39	0.0002	0.009	3.104	21.93	59	0	0	0	0	1	0	0	0	0
36	A13-A15	53	110	3338	3.34	0.00	3.37	3.65	0.0010	0.001	3.104	21.93	53	0	0	0	0	1	0	0	0	0
37	A15-A16	4	110	1681	1.68	0.00	1.68	2.40	0.0002	0.000	3.104	21.93	4	0	0	0	0	1	0	0	0	0
																		0	0	0	0	0
38	D15-D22	46	110	1911	1.91	49.49	51.00	106.25	0.0011	0.048	2.272	22.73	46	0	0	0	0	1	0	0	0	0
39	D22-D5	20	200	3689	3.69	0.00	3.69	7.37	0.0000	0.000	2.271	22.73	20	0	0	0	0	1	0	0	0	0
40	D20-D21	160	200	11.38	26.01	31.78	43.89	95.54	0.0010	0.163	2.435	22.56	160	0	0	0	0	1	0	0	0	0
41	D21-D7	29	110	755	0.75	30.97	31.72	65.09	0.0005	0.015	2.450	22.55	29	0	0	0	0	1	0	0	0	0
42	D6-A11	87	200	6127	6.12	0.00	6.13	12.77	0.0005	0.002	2.452	22.55	87	0	0	0	0	1	0	0	0	0
43	D7-D23	93	110	2540	2.54	22.30	24.84	51.75	0.0003	0.029	2.479	22.52	93	0	0	0	0	1	0	0	0	0
44	D23-A7	95	200	8021	8.02	16.08	22.30	46.46	0.0003	0.026	2.505	22.50	95	0	0	0	0	1	0	0	0	0
45	A7-B1	47	110	2705	2.70	12.05	14.08	29.35	0.0001	0.005	2.510	22.49	47	0	0	0	0	1	0	0	0	0
46	B1-B2	20	110	2445	2.44	9.61	12.05	25.11	0.0001	0.002	2.512	22.49	20	0	0	0	0	1	0	0	0	0
47	B2-B3	46	110	6852	6.85	2.09	8.49	14.36	0.0010	0.001	2.513	22.49	46	0	0	0	0	1	0	0	0	0
48	B4B2-B4B3	33	110	2717	2.72	0.00	2.72	5.66	0.0002	0.000	2.512	22.49	33	0	0	0	0	1	0	0	0	0
																		0	0	0	0	0
																		0	0	0	0	0
49	B12-B13	34	200	1846	1.84	359.00	360.84	751.71	0.0019	0.039	1.278	21.72	0	0	34	0	0	0	0	1	0	0
																		0	0	0	0	0
50	B13-A21	169	110	17391	17.39	0.00	17.39	37.27	0.0002	0.039	1.317	21.69	169	0	0	0	0	1	0	0	0	0
																		0	0	0	0	0
51	D12-D1	67	200	3922	1.92	339.19	341.11	710.63	0.0009	0.064	1.421	21.85	0	67	0	0	0	0	1	0	0	0
																		0	0	0	0	0
52	D1-A21	177	200	21051	20.99	144.01	165.34	350.72	0.0016	0.304	2.175	21.82	0	117	0	0	0	0	1	0	0	0
																		0	0	0	0	0
53	D1-D9	102	200	17.07	17.14	153.71	170.84	355.03	0.0016	0.266	1.938	21.96	0	102	0	0	0	0	1	0	0	0
54	B5-B10	58	150	6000	6.07	147.64	153.71	320.92	0.0013	0.089	2.005	21.80	0	58	0	0	0	0	1	0	0	0
																		0	0	0	0	0
55	B20-B2	169	200	20037	20.04	8.44	28.77	59.84	0.0004	0.051	2.056	21.92	169	0	0	0	0	1	0	0	0	0
56	D2-D3	109	200	8106	8.11	0.00	8.13	17.27	0.0010	0.008	2.041	21.92	109	0	0	0	0	1	0	0	0	0
																		0	0	0	0	0

Sheet No. 2

by Consultants Ltd.

Sr.No.	Name of Water Pipe line	Length	Owner Division of Water Pipe line	% Water Demand to meet from Recycled Water Supply	Design of Pipe Line						Length of pipe						No. of Sluice Valves				
					Net Water Demand			Total Water Demand	Sheet Loss per KM	Total Head Loss	Head Loss Progressive	Normal Head	110 mm dia	160 mm dia	210 mm dia	260 mm dia	310 mm dia	110 mm dia	160 mm dia	210 mm dia	260 mm dia	310 mm dia
					Self	Previous	Total	20 HRS														
		m	Km	KLDs	KLD	KLD	KLD	LPM	M/Km	Mtr	Mtr	Mtr	m	m	m	m	m	No.	No.	No.	No.	No.
1	-	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	-																	0	0	0	0	0
89	A1-A51	109	109	78924	9.06	3.91	23.89	48.27	0.0068	0.040	2.935	22.05	109	0	0	0	0	1	0	0	0	0
90	A51-A40	33	101	801	0.89	3.00	3.90	8.12	0.0004	0.000	2.935	22.05	33	0	0	0	0	1	0	0	0	0
91	A3-A10	28	100	2001	2.00	0.00	2.00	6.25	0.0004	0.000	2.935	22.04	28	0	0	0	0	1	0	0	0	0
	-																	0	0	0	0	0
	-	6925		665176.47									5479	1119	320	50	0	69	16	5	2	0
92	A102-A	55	500	6000	8.41	1473.49	1481.89	3887.27	0.0031	0.165	0.468	24.83	0	0	0	0	55	0	0	0	0	1
	A40-A1-B2-																	0	0	0	0	0
93	A-B5-A2	35	250	14015	5.41	477.20	485.60	1041.64	0.0026	0.018	0.186	24.81	0	0	0	19	0	0	0	0	0	0
	-																	0	0	0	0	0
94	B5A2-B5A1	19	100	6675	6.97	10.92	17.89	37.27	0.0002	0.004	0.193	24.81	38	0	0	0	0	1	0	0	0	0
95	B4-A5	37	100	1080	4.08	0.25	10.92	22.75	0.0001	0.007	0.200	24.80	37	0	0	0	0	1	0	0	0	0
96	A5-A6	54	100	8538	6.74	0.00	6.74	14.00	0.0001	0.001	0.201	24.80	54	0	0	0	0	1	0	0	0	0
	-																	0	0	0	0	0
97	A5-A1	52	200	780	0.79	458.52	459.31	956.89	0.0025	0.126	0.554	24.69	0	0	52	0	0	0	0	1	0	0
98	A1-B1	155	200	14779	14.77	443.75	458.52	955.23	0.0025	0.388	0.942	24.30	0	0	155	0	0	0	0	1	0	0
99	B1-B2	35	200	3365	3.41	412.23	415.65	904.18	0.0024	0.085	1.028	24.23	0	0	35	0	0	0	0	1	0	0
100	B2-B3	155	200	12552	12.55	432.98	445.53	923.60	0.0024	0.365	1.393	23.87	0	0	155	0	0	0	0	1	0	0
101	B3-B4	10	100	2146	2.15	0.06	2.21	5.10	0.0003	0.003	1.173	23.87	10	0	0	0	0	1	0	0	0	0
102	B5-B7	28	200	1570	1.57	428.27	429.84	895.72	0.0023	0.062	1.191	23.81	0	0	28	0	0	0	0	1	0	0
103	B4-B9	61	100	3636	3.64	0.00	3.64	7.59	0.0003	0.001	1.199	23.80	61	0	0	0	0	1	0	0	0	0
104	B4-B8	49	200	1918	1.66	422.88	424.53	881.71	0.0022	0.106	1.301	23.70	0	0	49	0	0	0	0	1	0	0
105	A5-A10	21	100	6647	6.37	0.00	6.37	13.26	0.0010	0.001	1.201	23.70	21	0	0	0	0	1	0	0	0	0
106	B6-B6	35	200	1000	1.16	415.42	416.52	867.74	0.0021	0.073	1.275	23.63	0	0	35	0	0	0	0	1	0	0
107	B6-B11	44	100	6011	6.01	0.00	6.01	12.39	0.0009	0.001	1.276	23.63	44	0	0	0	0	1	0	0	0	0
108	B6-B7	67	200	3590	3.70	407.68	409.38	851.87	0.0020	0.130	1.504	23.50	0	0	67	0	0	0	0	1	0	0
109	B7-B12	30	100	3836	3.84	0.00	3.84	7.99	0.0003	0.001	1.505	23.50	30	0	0	0	0	1	0	0	0	0
110	B7-B13	50	100	6848	6.83	396.39	403.24	840.08	0.0020	0.101	1.605	23.39	0	50	0	0	0	0	1	0	0	0
111	B14-B15	45	100	1442	1.44	394.95	396.39	825.82	0.0018	0.079	2.254	22.75	0	45	0	0	0	0	1	0	0	0
	-																	0	0	0	0	0
	-																	0	0	0	0	0
112	B15-B16	378	150	25317	7.52	191.84	199.36	407.01	0.0031	0.373	2.627	22.37	0	378	0	0	0	0	1	0	0	0
113	B16-C1	67	150	3467	3.47	174.38	177.85	370.21	0.0028	0.139	2.766	22.25	0	67	0	0	0	0	1	0	0	0
114	C1-C2	40	150	1097	1.07	173.29	174.36	363.29	0.0027	0.068	2.815	22.19	0	40	0	0	0	0	1	0	0	0
	-																	0	0	0	0	0
115	C2-C15	25	100	595	0.61	22.85	90.84	64.25	0.0005	0.012	2.829	22.17	25	0	0	0	0	1	0	0	0	0
116	C15-C19	46	100	7825	7.52	0.00	7.52	15.65	0.0002	0.002	2.827	22.17	46	0	0	0	0	1	0	0	0	0
117	C15-C16	86	200	1723	1.72	17.60	23.32	46.97	0.0003	0.011	2.839	22.16	62	0	0	0	0	1	0	0	0	0
118	C15-C13	36	100	4282	4.28	0.00	4.28	8.92	0.0006	0.002	2.829	22.16	36	0	0	0	0	1	0	0	0	0

Sheet No 2

Length of Pile

Design of Pile Cap

Reinforcement Details

Checked by

Date

Sheet No. 2

Length of Pile

Design of Pile Cap

Design of Pile Cap

Length of span

Section of Right Line

Vertical Shear Stress

Node	Name of Node	Length of Pipe	Pipe Dia	New Water Demand to meet from Proposed Source Supply	Design of Pipe Line: Node Flow Details: Self	Previous	Total	Total Water Demand	Head Loss per Mt	Total Head Loss	Ground Level: Progressive	Ground Level: Actual	Length of pipe: 100	90	80	75	63	50	Sluice Valves: 100	90	80	75	63
		m	mm	Litres	KLD	KLD	KLD	LPM	Mtr	Mtr	Mtr	Mtr	m	m	m	m	m	m	No.	No.	No.	No.	No.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
236	J30- J29	65	100	0	0.00	0.00	0.00	0.00	0.0000	0.000	2.508	22.09	107	0	0	0	0	0	0	0	0	0	0
240	J30- J31	40	150	103.2	18.54	60.01	78.55	139.05	0.0009	0.015	2.523	22.08	0	40	0	0	0	0	0	0	0	0	0
24	R41- 455	26	100	2420	2.42	0.00	2.42	4.04	0.0001	0.003	2.523	22.08	26	0	0	0	0	0	0	0	0	0	0
242	31 - 232	3	80	340	0.34	77.33	77.67	129.45	0.0008	0.001	2.527	22.08	0	3	0	0	0	0	0	0	0	0	0
243	R33- R43	104	100	11635	11.64	0.00	11.64	24.26	0.0001	0.008	2.535	22.07	104	0	0	0	0	0	0	0	0	0	0
244	R32 R35	50	80	5152	5.15	46.39	51.55	85.92	0.0013	0.051	2.578	22.02	50	0	0	0	0	0	0	0	0	0	0
245	235- 027	27	100	7952	7.95	4.00	7.95	13.61	0.0010	0.021	2.599	22.01	27	0	0	0	0	0	0	0	0	0	0
246	R35- R36	5	100	378	0.38	32.10	32.54	67.09	0.0005	0.002	2.601	22.02	5	0	0	0	0	0	0	0	0	0	0
247	035- 031	17	100	4536	4.54	0.00	8.08	17.41	0.0001	0.003	2.603	22.01	17	0	0	0	0	0	0	0	0	0	0
248	035- R27	50	100	3629	3.61	39.15	27.79	49.56	0.0005	0.025	2.991	22.01	50	0	0	0	0	0	0	0	0	0	0
249	027- R28	107	100	3624	3.62	0.00	8.02	21.20	0.0000	0.000	2.603	22.00	107	0	0	0	0	0	0	0	0	0	0
250	027- 026	60	100	3957	3.92	9.57	11.22	24.20	0.0001	0.006	2.609	22.00	60	0	0	0	0	0	0	0	0	0	0
251	R2 R22	103	100	3168	3.17	0.00	9.57	28.91	0.0001	0.006	2.614	22.00	103	0	0	0	0	0	0	0	0	0	0
252	028	110	200	15203	15.20	281.28	296.48	493.93	0.0004	0.044	2.540	22.46	0	0	0	0	110	0	0	0	0	0	0
253	J33 R29	53	100	2128	2.13	4.82	6.38	14.12	0.0000	0.002	2.541	22.44	53	0	0	0	0	0	0	0	0	0	0
254	032-R43	90	100	4851	4.85	0.00	4.85	9.69	0.0000	0.001	2.542	22.10	90	0	0	0	0	0	0	0	0	0	0
255	038- 039	57	250	3914	3.91	277.44	280.80	585.00	0.0002	0.010	2.552	22.44	0	0	0	0	57	0	0	0	0	1	0
256	037-037	30	250	1614	1.61	275.85	277.46	578.05	0.0003	0.010	2.579	22.34	0	0	0	0	30	0	0	0	0	0	0
257	037-038	130	100	10251	10.25	7.49	25.74	49.47	0.0002	0.012	2.612	22.39	129	0	0	0	0	0	0	0	0	0	0
258	R38-R41	41	100	1965	1.97	0.00	1.97	4.09	0.0000	0.000	2.612	22.39	41	0	0	0	0	0	0	0	0	0	0
259	R36-R40	33	100	3294	3.29	5.13	8.51	17.91	0.0000	0.000	2.613	22.39	33	0	0	0	0	0	0	0	0	0	0
260	736-734	48	200	2420	2.42	0.00	3.63	7.15	0.0000	0.000	2.614	22.39	48	0	0	0	0	0	0	0	0	0	0
261	R37-R2FR	42	200	3960	3.96	349.44	352.11	524.22	0.0006	0.026	2.604	22.50	0	0	0	42	0	0	0	0	0	0	0
262	R2FR R2FL	39	100	4855	4.84	0.00	4.86	10.17	0.0000	0.001	2.605	22.49	39	0	0	0	0	0	0	0	0	0	0
263	R2FR- FF	96	200	1855	1.85	242.57	244.50	504.50	0.0008	0.072	2.659	22.34	0	0	96	0	0	0	0	0	0	0	0
264	FF-R20	70	100	8791	8.79	0.00	8.79	18.12	0.0000	0.003	2.659	22.34	70	0	0	0	0	0	0	0	0	0	0
265	FF-R21	38	100	2240	2.24	0.00	2.24	4.62	0.0000	0.000	2.659	22.31	38	0	0	0	0	0	0	0	0	0	0
266	FF- F8	150	200	32269	32.27	218.38	251.64	482.59	0.0007	0.092	2.746	22.25	0	0	0	150	0	0	0	0	0	0	0
267	26-R23	59	100	5371	5.37	10.60	15.97	29.11	0.0001	0.006	2.705	22.25	59	0	0	0	0	0	0	0	0	0	0
268	R23 R21	106	100	10709	10.71	0.00	10.90	22.06	0.0001	0.007	2.762	22.24	106	0	0	0	0	0	0	0	0	0	0
269	R5-R21	45	100	7441	7.44	0.84	8.21	9.01	0.0000	0.001	2.718	22.25	45	0	0	0	0	0	0	0	0	0	0

Recycling of Treated Wastewater

Node No.	Name of Water Pipe line	Length	Diameter of Water Pipe line	Net Water Demand to meet from Recycled Water Supply	Hydraulic Pipe Line								Length of pipe					No of Sluice Valve				
					Net Water Demand			Total Water Demand	Head Loss per 1M	Total Head Loss	Head Pipe Progressive	Terminal Head	110 mm dia	160 mm old	210 mm old	250 mm old	315 mm old	110 mm old	160 mm old	210 mm old	250 mm old	315 mm old
		m	mm	l/hrs	Net KLD	Previous KLD	Total KLD	LPM	Mtr	Mtr	Mtr	Mtr	Nos	Nos	Nos	Nos	Nos	Nos.	Nos.	Nos.	Nos.	Nos.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
271	P31-P32	12	110	504	0.04	0.00	0.04	1.84	0.0000	0.000	2.749	22.25	10	0	0	0	2	1	0	0	0	0
																		0	0	0	0	0
33	P	90	250	2721	3.14	37.24	40.38	1678.92	0.0435	3.920	2.757	22.20	0	0	90	0	2	0	0	0	1	0
																		0	0	0	0	0
272	P32-P33	19	200	2659	2.77	4.05	7.83	1151.08	0.0000	0.001	2.749	22.20	19	0	0	0	0	1	0	0	0	0
273	P33-P34	31	200	6652	6.05	0.00	6.05	1257.69	0.0000	0.002	2.800	22.20	31	0	0	0	0	1	0	0	0	0
																		0	0	0	0	0
274	P3 - P	24	150	2632	2.35	176.85	179.21	3741.40	0.0078	0.187	2.936	22.15	0	25	0	0	0	0	1	0	0	0
275	P - P5	9	150	877	0.82	172.07	172.88	3608.90	0.0077	0.070	3.006	22.15	0	8	0	0	0	0	0	0	0	0
																		0	0	0	0	0
276	P5-P6	91	100	17159	4.78	0.00	4.78	9.15	0.0000	0.000	2.855	22.15	91	0	0	0	0	1	0	0	0	0
277	P5-P15	115	100	18899	19.00	0.00	19.00	39.56	0.0000	0.000	2.855	22.15	115	0	0	0	0	1	0	0	0	0
278	P6-P7	34	150	3626	3.20	149.40	152.60	318.10	0.0018	0.062	2.926	22.07	0	34	0	0	0	0	0	0	0	0
																		0	0	0	0	0
279	P8-P30	255	350	37552	35.41	28.72	48.34	91.26	0.0001	0.024	2.959	22.05	0	255	0	0	0	0	1	0	0	0
280	P10-P13	84	150	1475	3.48	30.31	33.79	63.66	0.0001	0.003	2.954	22.05	0	84	0	0	0	0	1	0	0	0
281	P11-P11	52	150	5487	5.11	22.91	27.91	57.32	0.0001	0.004	2.971	22.05	52	0	0	0	0	0	1	0	0	0
282	P12-P18	18	100	1767	1.67	21.24	22.91	47.72	0.0003	0.004	2.976	22.05	18	0	0	0	0	0	1	0	0	0
283	P18-P19	24	100	2645	2.65	0.00	2.64	5.5	0.0000	0.000	2.977	22.05	24	0	0	0	0	0	1	0	0	0
284	P13-P11	102	100	10096	10.10	0.01	10.20	19.75	0.0002	0.002	2.987	22.00	102	0	0	0	0	0	1	0	0	0
																		0	0	0	0	0
285	P2- P1	57	300	6891	6.65	99.33	90.29	2.1.17	0.0047	0.269	2.194	21.81	57	0	0	0	0	0	0	0	0	0
286	P1-P7	68	200	22840	22.85	0.00	22.86	47.65	0.0003	0.028	3.347	21.96	168	0	0	0	0	0	0	0	0	0
287	P1- P27	55	200	3508	3.50	71.19	70.49	150.50	0.0021	0.146	3.341	21.68	55	0	0	0	0	0	0	0	0	0
																		0	0	0	0	0
288	P4- P28	90	100	9751	7.75	3.00	10.77	22.70	0.0001	0.008	3.349	21.68	58	0	0	0	0	1	0	0	0	0
289	P28-P29	22	100	7995	8.00	0.00	8.00	16.66	0.0000	0.001	3.350	21.68	22	0	0	0	0	0	0	0	0	0
																		0	0	0	0	0
290	P7- P8	196	100	20157	27.00	28.11	55.46	115.55	0.0005	0.097	3.626	21.37	196	0	0	0	0	1	0	0	0	0
291	P9-P9	38	100	6726	6.72	0.01	6.72	13.16	0.0000	0.002	3.629	21.37	38	0	0	0	0	0	0	0	0	0
292	P8-P6	64	100	5578	5.58	16.71	22.09	46.04	0.0003	0.017	3.643	21.36	64	0	0	0	0	0	0	0	0	0
293	P6- P5	70	100	1672	6.71	0.00	16.71	34.85	0.0002	0.011	3.654	21.34	70	0	0	0	0	0	0	0	0	0
		13253		4481891.2	1482.89								8756	1730	1541	1570	130	328	39	31	21	5
																		0	0	0	0	0
294	STP-P4824	35	250	11	0.00	966.79	966.79	2036.15	0.0036	0.850	4.050	24.95	0	0	0	35	0	0	0	0	1	0
																		0	0	0	0	0
295	P24-P219	49	200	11971	11.97	611.23	624.60	1303.26	0.0044	0.228	0.268	24.73	0	0	49	0	0	0	0	1	0	0
296	P19-P14	100	200	21195	21.20	599.04	611.25	1272.40	0.0043	0.436	1.076	22.92	0	0	100	0	0	0	0	1	0	0
																		0	0	0	0	0

Steel Line of Treated Waste Water

Node No.	Name of Water Pipe line	Length	Outer Diameter of Water Pipe line	Net Water Demand to meet from Recycled Water Supply	Net Water Demand		Analysis of Pipe Line					Length of pipe					Sluice Valve				
					Self	Pipelines	Total Water Demand	Total Head	Head Loss per 100 m	Total Head Loss	Head Loss Progressive	Total Head	110 mm dia	160 mm dia	210 mm dia	250 mm dia	315 mm dia	110 mm dia	160 mm dia	210 mm dia	250 mm dia	315 mm dia
		m	mm	Litres	KLD	KLD	KLD	m	Mtr	Mtr	m	Mtr	m	m	m	m	m	Nos.	Nos.	Nos.	Nos.	Nos.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18					
	SPC TO JR																	0	0	0	0	0
325	A10-J10	78	200	2506	2.51	302.36	304.87	945.82	0.0012	0.095	2.958	22.99	0	0	73	0	0	0	0	0	0	0
326	A1-A55	137	300	73571	73.57	0.00	73.57	137.46	0.0006	0.186	3.094	22.91	137	0	0	0	0	0	0	0	0	0
327	A1-J27	48	150	3922	1.92	66.36	68.28	141.53	0.0021	0.081	3.089	22.91	58	0	0	0	0	0	0	0	0	0
328	A2-A56	63	200	6720	6.72	57.54	64.26	139.64	0.0027	0.513	3.602	22.40	250	0	0	0	0	0	0	0	0	0
329	A21-A43	97	200	45603	45.60	12.69	58.29	116.65	0.0015	0.145	3.747	22.26	91	0	0	0	0	0	0	0	0	0
330	A43-A52	15	100	375	0.38	12.31	12.69	28.52	0.0001	0.002	3.749	22.25	15	0	0	0	0	0	0	0	0	0
331	A52-A61	76	150	4250	4.25	11.00	4.56	8.62	0.0001	0.004	3.749	22.25	76	0	0	0	0	0	0	0	0	0
332	A61-A62	71	150	2103	2.40	6.55	9.05	19.88	0.0001	0.004	3.749	22.25	71	0	0	0	0	0	0	0	0	0
333	A62-A63	49	200	6650	6.65	0.00	6.65	14.85	0.0000	0.000	3.749	22.25	49	0	0	0	0	0	0	0	0	0
334	A1-A2	57	150	1955	2.93	194.20	197.13	331.55	0.0014	0.042	3.086	22.31	0	57	0	0	0	0	0	0	0	0
335	A2-J2	22	150	2026	3.71	155.59	159.30	326.20	0.0014	0.030	3.120	22.34	0	22	0	0	0	0	0	0	0	0
336	A2-A53	49	150	5040	5.06	150.30	155.36	324.09	0.0014	0.064	3.188	22.61	0	49	0	0	0	0	0	0	0	0
337	A53-J3	103	200	8830	8.83	142.20	151.03	314.35	0.0013	0.134	3.321	23.66	0	103	0	0	0	0	0	0	0	0
338	A53-J3	56	150	6450	6.45	135.57	142.02	291.99	0.0012	0.065	3.386	23.61	0	56	0	0	0	0	0	0	0	0
339	A10-A52	98	150	11296	11.30	32.85	44.15	91.93	0.0020	0.094	2.480	22.52	98	0	0	0	0	0	0	0	0	0
340	A52-A53	102	150	7327	7.33	20.38	27.71	44.44	0.0009	0.052	2.532	22.46	102	0	0	0	0	0	0	0	0	0
341	A53-A54	85	200	5123	5.13	21.20	26.33	51.10	0.0005	0.026	2.559	22.43	85	0	0	0	0	0	0	0	0	0
342	A54-A55	61	100	2603	7.80	16.40	24.20	50.42	0.0007	0.019	2.578	22.41	61	0	0	0	0	0	0	0	0	0
343	A52-A56	101	150	8120	8.11	8.19	16.30	34.16	0.0002	0.006	2.636	22.39	101	0	0	0	0	0	0	0	0	0
344	A56-A57	75	150	2505	2.51	5.74	8.25	17.27	0.0002	0.005	2.641	22.39	75	0	0	0	0	0	0	0	0	0
345	A57-A58	91	150	5734	5.74	0.00	5.74	12.03	0.0002	0.002	2.643	22.38	91	0	0	0	0	0	0	0	0	0
346	A10-A11	98	150	6503	6.57	61.80	95.36	195.93	0.0005	0.049	2.435	22.56	0	98	0	0	0	0	0	0	0	0
347	A11-A59	13	150	2437	2.44	0.00	2.44	5.08	0.0000	0.000	2.435	22.56	13	0	0	0	0	0	0	0	0	0
348	A11-A12	49	150	1565	1.56	81.79	83.35	171.77	0.0003	0.018	2.453	22.55	0	49	0	0	0	0	0	0	0	0
349	A12-A60	36	100	1902	1.90	0.65	2.55	7.22	0.0000	0.000	2.454	22.55	36	0	0	0	0	0	0	0	0	0
350	A20-A21	11	100	1165	1.65	0.00	1.65	3.67	0.0000	0.000	2.454	22.55	11	0	0	0	0	0	0	0	0	0
351	A15-A16	32	150	6151	6.15	21.47	27.62	56.71	0.0007	0.029	2.483	22.52	34	0	0	0	0	0	0	0	0	0
352	A16-A20	29	100	5141	0.24	0.00	0.24	18.21	0.0000	0.000	2.484	22.50	29	0	0	0	0	0	0	0	0	0
353	A16-A17	34	100	2878	3.86	22.27	55.13	115.68	0.0020	0.047	2.530	22.27	26	0	0	0	0	0	0	0	0	0
354	A17-A5	62	100	6279	0.80	55.47	52.27	134.73	0.0015	0.09	2.829	22.16	62	0	0	0	0	0	0	0	0	0
355	A5-A59	123	150	12152	13.65	0.00	13.65	28.08	0.0001	0.015	2.892	22.13	25	0	0	0	0	0	0	0	0	0

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Revised Agenda Item 14

Recycling of Treated Waste Water

Sr. No.	Name of Water Pipe line	Length	Outer Diameter of Water Pipe line	Net Water Demand to meet from Recycled Water Supply	Design of Pipe Line								Length of pipe					No of Sluice Valves				
					Net Water Demand			Total Water Demand	Head Loss per M	Total Head Loss	Head Loss Progressive	Terminal Head	110 mm old	160 mm old	210 mm old	260 mm old	310 mm old	110 mm old	160 mm old	210 mm old	260mm old	310 mm old
					Self	Previous	Total	20 HRS														
		m	mm	Litres	KLD	KLD	KLD	LPH	Mtr	Mtr	Mtr	Mtr	m	m	m	m	m	No.	No.	No.	No.	No.
1	2	3	4	5	6	7	8	9	10	11	12	13	18	19	20	21	22	23	24	25	26	27
	-																	0	0	0	0	0
384	B23-B25	45	160	1630	1.63	206.82	207.85	433.02	0.0023	0.105	2.618	22.38	0	45	0	0	0	0	1	0	0	0
385	B25-A14	109	160	3953	3.49	203.33	206.82	430.88	0.0023	0.254	2.871	22.11	0	109	0	0	0	0	1	0	0	0
	-																	0	0	0	0	0
386	A14-A39	100	160	11250	11.26	5.19	16.95	35.31	0.0002	0.016	2.888	22.11	100	0	0	0	0	1	0	0	0	0
387	A39-A60	78	160	5152	5.15	0.00	5.15	10.82	0.0000	0.000	2.889	22.11	78	0	0	0	0	1	0	0	0	0
	-																	0	0	0	0	0
388	A14-A11	53	160	3972	5.97	180.41	186.38	388.29	0.0138	0.733	3.604	21.40	53	0	0	0	0	1	0	0	0	0
389	A11-A11	17	160	0	0.00	0.00	0.00	0.00	0.0000	0.000	3.604	21.40	17	0	0	0	0	1	0	0	0	0
390	A11-A10	176	160	14314	14.31	166.09	180.41	375.85	0.0130	2.292	5.896	19.10	176	0	0	0	0	1	0	0	0	0
	-																	0	0	0	0	0
391	A10-A13	35	160	4720	4.72	0.00	4.72	9.83	0.0000	0.001	5.897	19.10	35	0	0	0	0	1	0	0	0	0
	-																	0	0	0	0	0
392	A10-A7	56	160	4857	4.86	74.53	79.39	164.99	0.0028	0.159	6.055	18.95	56	0	0	0	0	1	0	0	0	0
393	A7-A7	112	160	10349	10.35	0.00	10.35	21.56	0.0001	0.007	6.062	18.94	112	0	0	0	0	1	0	0	0	0
394	A7-A20	53	160	5441	5.44	0.00	5.44	11.33	0.0000	0.001	6.056	18.94	53	0	0	0	0	1	0	0	0	0
395	A7-A4	55	160	4960	4.96	53.59	58.55	121.98	0.0010	0.056	6.141	18.86	55	0	0	0	0	1	0	0	0	0
396	A4-A8	45	160	3141	3.14	0.00	3.14	6.54	0.0000	0.000	6.141	18.86	45	0	0	0	0	1	0	0	0	0
397	A4-A4	41	160	13905	13.91	0.00	13.91	28.97	0.0001	0.005	6.165	18.85	41	0	0	0	0	1	0	0	0	0
398	A4-A5	193	160	18400	18.40	18.14	36.54	76.13	0.0007	0.131	6.271	18.72	193	0	0	0	0	1	0	0	0	0
399	A5-A2	40	160	18142	18.14	0.00	18.14	37.80	0.0002	0.007	6.279	18.72	40	0	0	0	0	1	0	0	0	0
	-																	0	0	0	0	0
400	A10-A5	174	160	15832	15.83	66.39	82.18	171.21	0.0030	0.528	6.424	18.58	174	0	0	0	0	1	0	0	0	0
	-																	0	0	0	0	0
401	A5-A6	56	160	13548	13.54	19.27	31.81	66.27	0.0005	0.029	6.454	18.55	56	0	0	0	0	1	0	0	0	0
402	A6-A20	53	160	3501	3.50	0.00	3.50	7.29	0.0000	0.000	6.454	18.55	53	0	0	0	0	1	0	0	0	0
403	A6-A3	55	160	12640	12.64	3.13	15.77	32.85	0.0001	0.008	6.461	18.54	55	0	0	0	0	1	0	0	0	0
404	A3-A3	46	160	3126	3.13	0.00	3.13	6.51	0.0000	0.000	6.462	18.54	46	0	0	0	0	1	0	0	0	0
	-																	0	0	0	0	0
405	A9-A12	55	160	12643	12.64	21.89	34.54	71.95	0.0006	0.032	6.497	18.54	53	0	0	0	0	1	0	0	0	0
406	A12-A18	64	160	4891	4.89	0.00	4.89	10.19	0.0000	0.000	6.498	18.54	64	0	0	0	0	1	0	0	0	0
407	A12-A15	53	160	12540	12.54	4.46	17.00	35.42	0.0002	0.009	6.465	18.53	53	0	0	0	0	1	0	0	0	0
408	A15-A16	48	160	2317	2.32	0.00	2.32	4.83	0.0000	0.000	6.466	18.53	48	0	0	0	0	1	0	0	0	0
409	A16A15-	23	160	2145	2.15	0.00	2.15	4.47	0.0000	0.000	6.466	18.53	23	0	0	0	0	1	0	0	0	0
		8047		568791.76									6923	1256	1074	15	0	65	17	11	1	0
		29378		3134559.6									20997	4115	2934	1636	136	295	63	36	28	2

For Ky Consultants Pvt. Ltd.

(Director)

DESIGN STATEMENT OF DRAINAGE

Abstract of Storm Water Drainage				
Size	Length	Avg Depth	Manhole	Vent Shaft
400	21966	10.81	1123	
500	2692	47.45	136	
600	1769	2.39	88	
700	1046	17.75	55	
800	240	78.97	13	30
900	254	231.98	15	
1000	207	2.96	10	
1100	439	3.14	22	
1200	125	3.52	7	

For Ky Consultants Pvt. Ltd.

(Director)

Design Statement of Storm Water Drainage

Sr. No	Line No.	Length	Quantity Storm water run-off material	Quantity of Waste Water generated			Discharge		Velocity	Time	Size of Storm line	Slope		Length of Storm line	Fall	Formation Level		Invert Level	
				SW	Bldg.	Total										Upper end	Lower end	Upper end	Lower end
		M	L	KLD	KLD	KLD	MLD	Cu.m	M/sec	Cu. m	mm			M	M	M	M	M	M
1	2	3	4	5	6	7	8	9	10	11	12	13		14	15	16	17	18	19
30	A3-A5	22	251151	391	0	391	0.39	0.0040	0.62	0.079	400	200	OK	22	0.05	258.821	0.000	254.821	254.675
31	A5-A6	30	337500	532	391	923	1.03	0.0151	0.62	0.079	400	200	OK	30	0.08	0.000	0.000	257.205	254.285
32	A20-A6	41	457950	458	0	458	0.46	0.0063	0.63	0.079	400	200	OK	41	0.06	258.531	0.000	254.121	254.015
34	A6-A5	51	574350	916	1765	2700	2.70	0.0273	0.63	0.079	400	200	OK	51	0.08	0.000	0.000	257.003	253.997
35	A18-A15	25	163725	184	0	184	0.18	0.0031	0.63	0.079	400	200	OK	25	0.04	254.679	254.036	250.679	250.314
36	A16-A15	32	354025	254	0	254	0.25	0.0020	0.63	0.079	400	200	OK	32	0.05	254.604	254.043	250.204	250.218
38	A15-A12	33	371700	916	435	1351	1.35	0.0157	0.63	0.079	400	200	OK	33	0.05	254.985	255.242	250.214	250.145
39	A19-A12	31	409905	410	0	410	0.41	0.0047	0.63	0.079	400	200	OK	31	0.05	254.967	255.242	250.367	250.187
40	A17-A5	30	337500	532	1753	2695	2.70	0.0312	0.63	0.079	400	200	OK	30	0.05	255.242	0.000	250.143	253.063
28	MAIN OUTFALL	30	0	0	27577	27577	27.58	0.3192	0.79	0.099	800	1300	OK	30	0.02	0.000	0.000	-2.562	-2.959
29	B2-A31	66	424905	429	0	429	0.43	0.0050	0.63	0.079	400	200	OK	66	0.09	257.546	257.477	250.146	250.052
30	A34-A33	12	129187	130	0	130	0.13	0.0015	0.63	0.079	400	200	OK	12	0.02	257.486	257.476	250.084	250.067
31	A33-A32	30	282870	282	668	950	0.95	0.0110	0.63	0.079	400	200	OK	30	0.05	257.429	257.241	250.052	250.060
42	A37-A36	14	69946	69	0	69	0.07	0.0008	0.63	0.079	400	200	OK	14	0.02	256.946	256.774	253.344	253.304
43	A35-A35	50	509654	503	69	572	0.57	0.0041	0.63	0.079	400	200	OK	50	0.07	256.734	253.44	253.304	253.139
44	A33-A32	35	514454	319	1522	1841	1.84	0.0190	0.63	0.079	400	200	OK	35	0.06	257.441	256.811	253.139	253.104
45	A49-A31	26	201451	201	0	201	0.20	0.0021	0.63	0.079	400	200	OK	26	0.01	257.816	257.545	256.016	256.358
46	A51-A52	55	505511	306	704	511	0.51	0.0059	0.63	0.079	400	200	OK	55	0.08	257.446	256.811	253.979	253.900
47	A53-A6	44	551455	496	2152	2442	2.44	0.0287	0.63	0.079	400	200	OK	44	0.06	256.811	256.501	253.074	253.011
48	A37-A37	51	259905	245	0	219	0.25	0.0029	0.63	0.079	400	200	OK	51	0.12	257.393	254.645	253.615	253.503
49	A37-A6	12	30101	30	240	270	0.28	0.0033	0.64	0.079	400	200	OK	12	0.02	256.644	256.500	253.525	253.503
50	A6-A5	71	167358	191	3961	2926	2.93	0.0339	0.63	0.079	400	200	OK	71	0.10	256.574	254.327	253.615	254.915
51	A51-A5	25	540000	540	0	540	0.54	0.0063	0.63	0.079	400	200	OK	25	0.04	256.199	256.027	254.799	254.704
52	A17-A5	71	681159	901	2466	4052	4.05	0.0471	0.63	0.079	400	200	OK	71	0.10	256.327	255.367	253.067	253.662

Prepared by Consultant's Ref. No.

Sheet No.

Pvt Ltd

Table

| | | |

Sheet No. 8

Fig. 4

Sheet No.10

Design Weight of Structural Steel

Job No.

Date

Checked by

Prepared by

Length of Member (m)

Unit Weight of Steel = 7850 kg/m³

Remarks

Member No.	Section	Length (m)	Unit Weight (kg/m)	Weight (kg)	Quantity	Total Weight (kg)

Sheet No. 1

Sheet No. 2

Plan of Sewerage & Water Supply

Upper Level

Lower Level

| | | |

Design Statement of Storm Water Drainage

Sr. No	Line No.	Length	Quantity Storm water accumulated	Quantity of Waste Water generated			Discharge		Velocity	Flow	Size of Storm line	Slope		Length of Storm line	Fall	Formation Level		Invert Level		
				Self	Branch	Total										Upper end	Lower end	Upper end	Lower end	
				LLD	KLD	KLD	MLD	Cu.m	M/Sec	Cu.m	mm			M	M	M	M	M	M	M
1	2	3	4	5	6	7	8	9	10	11	12	13		14	15	16	17	18	19	20
396	D21-D22	165	755891	754	2157	2911	2.91	0.0337	0.63	0.079	400	700	OK	165	0.24	228.956	229.196	226.378	226.034	
397	D5-D22	37	253019	253	0	253	0.25	0.0029	0.62	0.079	400	700	OK	37	0.05	228.950	229.000	227.530	227.477	
398	D22-D18	44	101886	102	3164	3266	3.27	0.0378	0.63	0.079	400	700	OK	44	0.06	229.590	229.730	226.034	225.971	225.871
399	A'A'13-A12	9	118423	118	0	118	0.12	0.0014	0.63	0.079	400	700	OK	9	0.01	229.728	229.724	228.228	228.313	
400	A'12-A12	50	295076	295	0	295	0.30	0.0034	0.63	0.079	400	700	OK	50	0.07	229.735	229.724	228.335	228.269	
401	A12-A11	53	913276	913	414	1327	1.33	0.0154	0.63	0.079	400	700	OK	53	0.08	229.724	229.717	228.261	228.188	
402	A11-A1	153	888244	888	1327	2215	2.22	0.0256	0.63	0.079	400	700	OK	153	0.22	229.717	229.688	228.188	227.969	
403	A1-A2	42	331497	331	2215	2547	2.55	0.0295	0.63	0.079	400	700	OK	42	0.06	229.688	229.498	227.969	227.909	
404	A'2-A2	54	472638	473	0	473	0.47	0.0055	0.62	0.079	400	700	OK	54	0.08	229.507	229.495	228.107	228.030	
405	D1-A2	23	223564	223	0	223	0.22	0.0026	0.63	0.079	400	700	OK	23	0.03	229.505	229.495	228.105	228.072	
406	A2-D2	74	232297	232	3243	3475	3.47	0.0402	0.63	0.079	400	700	OK	74	0.11	229.495	229.580	227.909	227.805	
407	D2-D19	110	1511822	1512	3475	4987	4.99	0.0577	0.63	0.079	400	700	OK	110	0.16	229.580	229.755	227.805	227.646	
408	D19-D18	131	1641826	1642	4987	6628	6.63	0.0767	0.63	0.079	400	700	OK	131	0.19	229.755	229.750	227.646	227.559	
409	D5-D18	130	761198	761	0	761	0.76	0.0088	0.63	0.079	400	700	OK	130	0.18	229.777	229.750	228.377	228.102	
410	D6-D18	40	221656	222	0	222	0.22	0.0026	0.63	0.079	400	700	OK	40	0.06	229.760	229.750	228.360	228.302	
411	D18-D17	47	256104	256	10877	11133	11.13	0.1289	0.68	0.134	500	600	OK	47	0.06	229.750	229.740	225.871	225.813	225.713
412	D4-84D17	140	1029871	1030	0	1030	1.03	0.0119	0.63	0.079	400	700	OK	140	0.20	229.773	229.740	228.373	228.173	
413	84D17-OUTFALL	30	166763	167	13163	13330	13.33	0.1437	0.72	0.205	600	900	OK	30	0.03	229.740	229.740	225.713	225.679	
		28738	221792861	221793																

Appurtenances of Storm Water

Sr. No.	Line No.	Length	Storm Pipe Line 400 mm dia Length M	Storm Pipe Line 450 mm dia Length M	Storm Pipe Line 600 mm dia Length M	Storm Pipe Line 700 mm dia Length M	Storm Pipe Line 800 mm dia Length M	Storm Pipe Line 900 mm dia Length M	Storm Pipe Line 1000 mm dia Length M	Storm Pipe Line 1100 mm dia Length M	Storm Pipe Line 1200 mm dia Length M	Nos of Manh. 400 mm dia No	450 mm dia No	600 mm dia No	700 mm dia No	800 mm dia No	900 mm dia No	1000 mm dia No	1100 mm dia No	1200 mm dia No
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	B2B30-B29	29	29									1								
2	B34-B29	30	30									1								
3	B29-B28	71	71									4								
4	B33-B27	97	97									5								
5	B28-B26	81	81									4								
6	B26-B27	98	48									3								
7	B25-B21	158	158									5								
8	B20-B21	96	96									3								
9	B22-B21	36		36								2								
10	A27-B24	78		78								4								
11	A21-A22	70	70									4								
12	A22-B23	26		26								1								
13	B23-B22	29		29								4								
14	A24-B25	86		60																
15	A60-A59	100	100									5								
16	A59-A15	131	131									7								
17	A11-A14	26			26									2						
18	A10-A11	181			181									9						
19	A15-A10	50	50									3								
20	B.A2-B.A5	44	44									2								
21	A5-A6	199	199									10								
22	A6-A7	51	51									3								
23	A7-A8	73	73									3								
24	A8-A9	96	96									3								
25	A20-A7	62	62									2								
26	A7-A3	92	92									4								
27	A3-A10	53		53								3								
28	A5-A10	181				181														

Sheet No:-17

by Consultants Pvt Ltd

Abstract of Joints at Storm Water

S. No.	Line No.	Length	Storm Pipe Line 400 mm Dia	Storm Pipe Line 500 mm Dia	Storm Pipe Line 600 mm Dia	Storm Pipe Line 900 mm Dia	Storm Pipe Line 1000 mm Dia	Storm Pipe Line 1200 mm Dia	Storm Pipe Line 1500 mm Dia	Storm Pipe Line 1800 mm Dia	Storm Pipe Line 2000 mm Dia	No of Joints 400 mm Dia	500 mm Dia	600 mm Dia	900 mm Dia	1000 mm Dia	1200 mm Dia	1500 mm Dia	1800 mm Dia	2000 mm Dia
			Length	Length	Length	Length	Length	Length	Length	Length	Length	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)	(M)
			M	M	M	M	M	M	M	M	M	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	2	3	4	6	8	10	12	14	16	18	20	3	5	20	21	22	23	24	25	26
29	A1-A2	32	32									2								
30	A2-A3	55	55									3								
31	A20-A6	41	41									3								
32	A6-A5	52	52									3								
33	A18-A15	25	25									1								
34	A16-A15	22	22									2								
35	A18-A12	63	63									3								
36	A19-A12	51	51									3								
37	A12-A9	58	58									3								
38	SEA-OUTFALL	90				90									2					
39	A24-A23	90	90									3								
40	A24-A22	42	42									2								
41	A23-A25	50	50									2								
42	A37-A36	14	14									1								
43	A26-A27	90	90									3								
44	A35-A32	55	55									3								
45	A29-A31	26	26									1								
46	A31-A32	33	33									2								
47	A32-A6	44	44									2								
48	A35-A37	84	84									4								
49	A37-A6	12	12									1								
50	A6-A5	71	71									4								
51	A6-A5	25	25									1								
52	A17-A5	71	71									4								

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Appurtenants of Storm Water

Sr. No.	Line No	Length	Storm Pipe Line 450 mm DIA	Storm Pipe Line 500 mm DIA	Storm Pipe Line 600 mm DIA	Storm Pipe Line 700 mm DIA	Storm Pipe Line 800 mm DIA	Storm Pipe Line 900 mm DIA	Storm Pipe Line 1000 mm DIA	Storm Pipe Line 1100 mm DIA	Storm Pipe Line 1200 mm DIA	No. of Manhole: 450mm DIA	500 mm DIA	600 mm DIA	700 mm DIA	800 mm DIA	900 mm DIA	1000 mm DIA	1100 mm DIA	1200 mm DIA
			Length	Length	Length	Length	Length	Length	Length	Length	Length									
		M	M	M	M	M	M	M	M	M	M	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	2	3	4	5	6	7	8	9	10	11	12	18	19	20	21	22	23	24	25	26
53	A16-A17	56	56																	
54	A20-A19	13	13									1								
55	A21-A20	7	7																	
56	A20-A19	71	71									4								
57	A18-A19	78	78									4								
58	A19-A14	27	27																	
59	A14-A15	51	51																	
60	A14-A10	99		99								5								
61	A28-A27	79	79									4								
62	A27-A26	73	73									4								
63	A26-A25	28	28									3								
64	A25-A24	64	64									3								
65	A24-A23	102	102									4								
66	A23-A22	80	80									5								
67	A22-A10	97	97																	
68	A10-A9	67		67																
69	A9-A8	20	20																	
70	A9-A58	97			97															
71	A58-A3	71			71															
72	A3-A2	7			7															
73	A2-A1	56			56															
74	A2-A58-A3	115	115									6								
	A1-A45-	39	39																	
	A2-A45-	10	10									4								
	A7-A69-	79	79																	
	A3-A44-	63	63																	
	A2-A67-	11	11									4								
	A7-A64-	84	81									2								
	A2-A43-	30	30																	

Key Consultants Pvt. Ltd.

Statement of Storm Water

Sr. No.	Line No.	Length	Storm Pipe Line 400 mm Dia	Storm Pipe Line 500 mm Dia	Storm Pipe Line 600 mm Dia	Storm Pipe Line 700 mm Dia	Storm Pipe Line 800 mm Dia	Storm Pipe Line 900 mm Dia	Storm Pipe Line 1000 mm Dia	Storm Pipe Line 1100 mm Dia	Storm Pipe Line 1200 mm Dia	No. of CM Holes								
			Length	Length	Length	Length	Length	Length	Length	Length	Length	450 mm Dia	500 mm Dia	600 mm Dia	700 mm Dia	800 mm Dia	900 mm Dia	1000 mm Dia	1100 mm Dia	1200 mm Dia
		M	M	M	M	M	M	M	M	M	M	No.	No.	No	No.	No.	No.	No.	No.	No.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
75	B2A17-A1	55	55																	
76	B2A1-OUTFALL	30				30														
77	B2D24-D23	41	41																	
78	D23-D3	225	225																	
79	D24-B4	172	172																	
80	A4-B3	97	97																	
81	D3-D2	57	57																	
82	B6-B5	55	55																	
83	B5-B4	68	68																	
84	B4-D5	45	45																	
85	D5-D4	55	55																	
86	B2A13-B13	19	19																	
87	B13-B12	119	119																	
88	B12-A1	206	206																	
89	B1-B2	94	94																	
90	B1-D2	145	145																	
91	D2-D3	94	94																	
92	B5-B12	127		127																
93	B12-D24	44	44																	
94	B2P16	239	239																	
95	B16-D17	70	70																	
96	D17-B13	144	144																	
97	B17-B11	24	24																	
98	B11-D11	90	90																	

Appurtenances Schedule

Sr. No.	Line No.	Length	Storm Pipe Line 400 mm Dia	Storm Pipe Line 500 mm Dia	Storm Pipe Line 600 mm Dia	Storm Pipe Line 700 mm Dia	Storm Pipe Line 800 mm Dia	Storm Pipe Line 900 mm Dia	Storm Pipe Line 1000 mm Dia	Storm Pipe Line 1100 mm Dia	Storm Pipe Line 1200 mm Dia	No of Manhole								
			Length	Length	Length	Length	Length	Length	Length	Length	Length	400 mm Dia	500 mm Dia	600 mm Dia	700 mm Dia	800 mm Dia	900 mm Dia	1000 mm Dia	1100 mm Dia	1200 mm Dia
		M	M	M	M	M	M	M	M	M	M	No	No	No	No	No	No	No.	No.	No.
1	2	3	4	6	8	10	12	14	16	16	16	18	19	20	21	22	23	24	25	26
99	B10 - B12	55	55									3								
100	B13 - B12	140			130									2						
101	B15-B13	88			88									4						
102	B17 - B15	81	81									4								
103	B20-B15	132	132									7								
104	B15-B14	56	56									3								
105	B9-B21	84	84									4								
106	B14-B19	180	180									9								
107	B2B19-	70				70									4					
108	B3B2e-	64	64									3								
109	B2B24-OUTFALL	30				30										2				
110	B3A33-	62	62									3								
111	A32-A31	55	55									3								
112	A31-A34	61	61									2								
113	A33-A34	75	75									3								
114	B3A34-	125	125									5								
115	B3A29-OUTFALL	30	30									2								
116	B2B21-	109	109									5								
117	D22-B27	58	58									2								
118	B38- B25	81	81									4								
119	D27- D26	47	47									2								
120	B24- B26	113	113									5								
121	B26-B25	10	10																	
122	D27- D25	62	62									3								

Appurtenances of Storm Water

S No	Line No.	Length	Storm Pipe Line 400 mm Dia	Storm Pipe Line 500 mm Dia	Storm Pipe Line 600 mm Dia	Storm Pipe Line 700 mm Dia	Storm Pipe Line 800 mm Dia	Storm Pipe Line 900 mm Dia	Storm Pipe Line 1000 mm Dia	Storm Pipe Line 1100 mm Dia	Storm Pipe Line 1200 mm Dia	No. of Manholes								
			Length	Length	Length	Length	Length	Length	Length	Length	Length	400 mm Dia	500 mm Dia	600 mm Dia	700 mm Dia	800 mm Dia	900 mm Dia	1000 mm Dia	1100 mm Dia	1200 mm Dia
			M	M	M	M	M	M	M	M	M	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	2	3	4	5	6	10	12	14	15	16	18	18	19	20	21	22	23	24	25	26
125	R25-R23	68	68									2								
124	R24-R23	105	105									3								
125	R23-R31	6	6																	
126	R33-R31	34	34									2								
127	R31-R9	62	62									3								
128	R9-R10	59	59									3								
129	C14-C7	55	55									3								
130	C7-R34	21	21									1								
131	R35-R32	40	40									2								
132	R32-R10	93	89									3								
133	R10-R11	56		54									2							
134	R12-R11	134	134									3								
135	R11-C1	66		66									3							
136	R35-C1	22	22									1								
137	C1-C21	170		170									9							
138	C21-C21	13	13									1								
139	C21-C26	54			54									3						
140	C26-C26	31			34									3						
141	C24-C42	93			93									5						
142	C43-C43	31	31									2								
143	C43-C42	57	57									3								
144	C42-C44	62			62									3						
145	C44-C45	37			37									2						
146	C45-C26	46			46									3						
147	C26-C25	37	37									2								
148	C26-C25	68			68									3						
149	C25-C27	125			125									6						
150	C45-C7	66			66									3						
151	R2C7-	26			26									1						
152	[illegible]	13	13									1								

Appurtenances of Storm Sewer

Sr. No.	Line No	Length	Storm Pipe Line 400 mm Dia	Storm Pipe Line 500 mm Dia	Storm Pipe Line 600 mm Dia	Storm Pipe Line 700 mm Dia	Storm Pipe Line 800 mm Dia	Storm Pipe Line 900 mm Dia	Storm Pipe Line 1000 mm Dia	Storm Pipe Line 1100 mm Dia	Storm Pipe Line 1200 mm Dia	No of Manhole								
			Length	Length	Length	Length	Length	Length	Length	Length	Length	400 mm Dia	500 mm Dia	600 mm Dia	700 mm Dia	800 mm Dia	900 mm Dia	1000 mm Dia	1100 mm Dia	1200 mm Dia
		M	M	M	M	M	M	M	M	M	M	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.	Nos.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
153	C49-C50	28	28									1								
154	C50-C51	59	59									2								
155	C52-C51	40	40									2								
156	C51-C24	51	51									1								
157	B12-B7	152	152									1								
158	B11-B7	15	15									1								
159	B7-B26-A	87	87									4								
160	C54-C50	109		109									3							
161	C12-C11	144	144									7								
162	C55-C52	93	93									5								
163	C51-C50	57	57									3								
164	C50-C49	72		72									4							
165	B26-C50	122		122									5							
166	B26-B5-B26-A	31			31										3					
167	B20-B18	55	55									2								
168	C8-B18	61			61										3					
169	B21-B20	15	15									1								
170	B2-B20	62			62										3					
171	B2-B1	100	100									5								
172	D6-B1	72	72									2								
173	B1-B3	63	63									3								
174	D5-B1	194	194									10								
175	C22-B8	39	39									2								
176	B8-B7	85	85									4								

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Appurtenances of Storm Water

Sr. No.	Line No.	Length	Storm Pipe Line 400 mm dia Length	Storm Pipe Line 500 mm dia Length	Storm Pipe Line 600 mm dia Length	Storm Pipe Line 700 mm dia Length	Storm Pipe Line 800 mm dia Length	Storm Pipe Line 900 mm dia Length	Storm Pipe Line 1000 mm dia Length	Storm Pipe Line 1200 mm dia Length	Nos of Manhole 400 mm dia No.	500 mm dia No.	600 mm dia No.	700 mm dia No.	800 mm dia No.	900 mm dia No.	1000 mm dia No.	1100 mm dia No.	1200 mm dia No.
		M	M	M	M	M	M	M	M	M	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
177	D7- D1	66	66								3								
178	D9- D7	145	145								7								
179	D1- P2	54		54								3							
180	P14- P2	241	14								7								
181	P3-P4	37		37								2							
182	P10-P18	25	18								1								
183	P18-P16	25	25								1								
184	P15-P16	30	30								2								
185	P16-P13	40	40								2								
186	P14-P15	25	25								1								
187	P15-P9	173	173								9								
188	P3-P1	24		24								1							
189	P12- P4	55	55								3								
190	P4- P5	24			24							1							
191	P21-P20	76	76								4								
192	P20-P5	28	28																
193	P5- P6	67			67							2							
194	P21-P6	51	51																
195	P24-P23	110	110								6								
196	P23- P6	54	54								3								
197	P6- P7	135			135							7							
198	P26- P7	73	73								1								
199	P25- P7	73	28																
200	P7- P8	55			55							3							
201	P1- P8	28	28								1								
202	P8- P27	45			45							2							
203	P34-P36	38	38								2								
204	P36-P35	61	61								3								

Sr. No.	Line No.	Length	Storm Pipe Line 400 mm Dia	Storm Pipe Line 500 mm Dia	Storm Pipe Line 600 mm Dia	Storm Pipe Line 700 mm Dia	Storm Pipe Line 800 mm Dia	Storm Pipe Line 900 mm Dia	Storm Pipe Line 1000 mm Dia	Storm Pipe Line 1100 mm Dia	Storm Pipe Line 1200 mm Dia	No of Manhole: 400 mm Dia	500 mm Dia	600 mm Dia	700 mm Dia	800 mm Dia	900 mm Dia	1000 mm Dia	1100 mm Dia	1200 mm Dia
			Length	Length	Length	Length	Length	Length	Length	Length	Length									
		M	M	M	M	M	M	M	M	M	M	No	No	No	No	No	No	No	No	No
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
205	P26-P27	118	118									2								
206	P27-D22	47				47									1					
207	D22- D18	53				53									1					
208	D18- D35	56	56									2								
209	D35- D38	61	61									2								
210	R2D38-	174				174									9					
211	R2D20-	69							69									3		
212	D24-D23	69	69									3								
213	R2D26-	138							138									6		
214	R2C34-	137	137									7								
215	C36-C58	84	84									4								
216	C40-C58	27	27									1								
217	C38-C52	25	25									1								
218	R2C52-	134	134									7								
219	C53-C52	61	61									4								
220	C52-C16	217	217									11								
221	C21-C54	84	84									4								
222	C54-C20	105	105									5								
223	C20-C18	82	82									4								
224	C18-C16	40	40									2								
225	C16-	85		85									5							
226	R2D26-	48								48										

Pipe Quantities of Storm Water

Sr. No	Line No.	Length	Storm Pipe Line 400 mm dia	Storm Pipe Line 500 mm dia	Storm Pipe Line 600 mm dia	Storm Pipe Line 700 mm dia	Storm Pipe Line 800 mm dia	Storm Pipe Line 900 mm dia	Storm Pipe Line 1000 mm dia	Storm Pipe Line 1100 mm dia	Storm Pipe Line 1200 mm dia	No of Manhole						100 mm dia	1100 mm dia	1200 mm dia
			Length	Length	Length	Length	Length	Length	Length	Length	Length	400 mm dia	500 mm dia	600 mm dia	700 mm dia	800 mm dia	900 mm dia			
			M.	M	M	M	M.	M	M.	M	M	No	No	No	No	No.	No.	No.	No.	No.
1	2	3	4	6	8	10	12	14	16	16	18	19	20	21	22	23	24	25	26	
227	D27-D28	220								220									11	
228	D28- D29	130								110									6	
229	D25- D29	77	77									4								
230	D29-	61								61									3	
231	82D3-	50	50									2								
232	D2-D6	76	76									4								
233	D5-D6	22	22									1								
234	D6-D7	70	70									4								
235	D8-D7	112	112									6								
236	D7-D11	56	56									2								
237	D11-D11	83	83									4								
238	D13- D15	66	66									3								
239	D15- D16	83	83									3								
240	D18- D16	28	28									1								
241	D16-D10	56	56									2								
242	D19- D17	24	24									2								
243	D13- D17	65	65									3								
244	82D17-	20		20									1							
245	82D20-	57		57									3							
246	D24- D25	99	99									3								
247	D25- D52	70		70									4							
248	D3- D32	32									32									1
249	82D30-	65									65									2
250	82D36-	39	39									2								
251	82D35-OUTFALL	30									30									1
252	85C14-	43	43									2								
253	C21-C11	45	45									2								
254	C11-C10	55	55									3								

Appendix C of Storm Water

Sr No	Line No.	Length	Storm Pipe Line 400 mm Dia	Storm Pipe Line 500 mm Dia	Storm Pipe Line 600 mm Dia	Storm Pipe Line 700 mm Dia	Storm Pipe Line 800 mm Dia	Storm Pipe Line 900 mm Dia	Storm Pipe Line 1000 mm Dia	Storm Pipe Line 1100 mm Dia	Storm Pipe Line 1200 mm Dia	No of Manhole								
			Length	Length	Length	Length	Length	Length	Length	Length	Length	400 mm Dia	500 mm Dia	600 mm Dia	700 mm Dia	800 mm Dia	900 mm Dia	1000 mm Dia	1100 mm Dia	1200 mm Dia
		M	M	M	M	M	M	M	M	M	M	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	2	3	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38
255	C17-C10	87	87									2								
256	C14-C10	77	77									2								
257	C10-C9	58	58									3								
258	C7-C9	72	72									4								
259	C9-C6	47	47									2								
260	C7-C6	85	85									3								
261	C6-C5	74	74									4								
262	B59-B48	90	90									5								
263	B48-B37	49	49									2								
264	B37-C5	105	105									5								
265	C5-C4	27	27									1								
266	C26-C4	104	104									6								
267	C4-C2	57	57									3								
268	B41-B40	133	133									7								
269	B42-B40	246	246									13								
270	B40-C2	51	51									2								
271	C17-C16	45	45									2								
272	C16-C15	42	42									2								
273	C15-C15	48	48									2								
274	C19-C15	51	51									3								
275	C15-C2	21	21									2								
276	C2-C1	30		30									2							
277	C1-B36	60		60									1							
278	B33- B34	15	15									1								
279	B34- B35	37	37									2								
280	B35- B36	39	39									2								
281	B36-B35	196		196									9							

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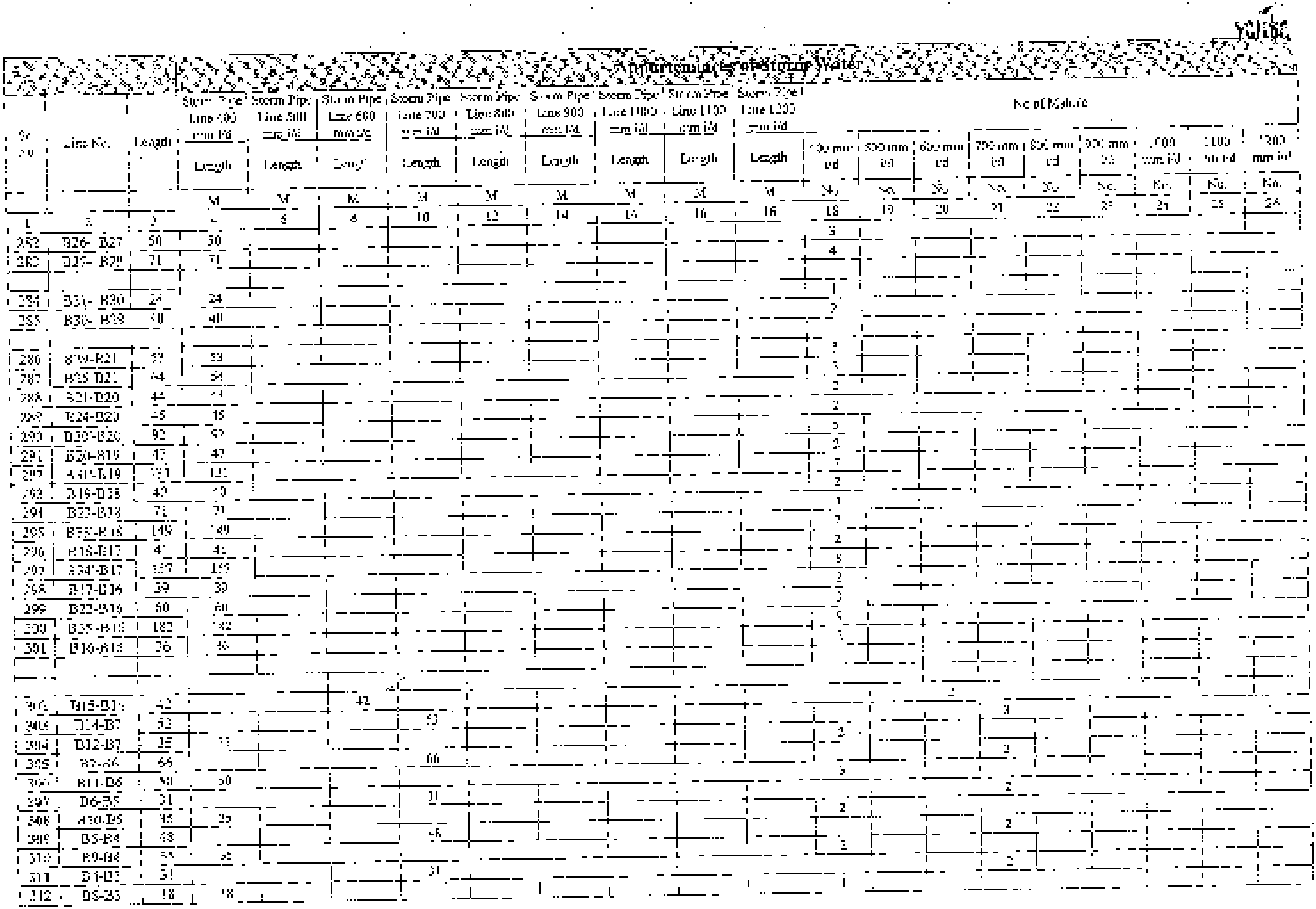

Sheet No.-28

Kv Consultants Pvt Ltd

Quantities of Storm Water

Sr. No.	Line No.	Length	Storm Pipe Line 600 mm Dia	Storm Pipe Line 500 mm Dia	Storm Pipe Line 600 mm Dia	Storm Pipe Line 700 mm Dia	Storm Pipe Line 800 mm Dia	Storm Pipe Line 900 mm Dia	Storm Pipe Line 1000 mm Dia	Storm Pipe Line 1100 mm Dia	Storm Pipe Line 1200 mm Dia	Manhole/Masonry								
			Length	Length	Length	Length	Length	Length	Length	Length	Length	400 mm Dia (a)	500 mm Dia (b)	600 mm Dia (c)	900 mm Dia (d)	800 mm Dia (e)	900 mm Dia (f)	1000 mm Dia (g)	1100 mm Dia (h)	1200 mm Dia (i)
			M	M	M	M	M	M	M	M	M	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
313	D3-D2	167				167									8					
314	D2-D1	17				17									1					
315	A6-A5	40	40									2								
316	A5-A4	97	97									5								
317	A4-A3	52	52									3								
318	A3-A2	64	64									3								
319	A2-A1	39	39									2								
320	BSA1-BSA1	154	154									8								
321	MH1-OUTFALL	50				50									2					
322	A1-A2	6	6									1								
323	A38-A38	23	23									2								
324	A38-A40	37	37									2								
325	A39-A31	26	26									1								
326	A31-A41	140	140									7								
327	A7-A7	34	34									2								
328	A7-A21	30	30									2								
329	A41-E6	15	15									1								
330	E6-E6	111	111									6								
331	E6-A42	37	37									2								
332	A38-A39	26	26									1								
333	A39-A30	102	102									5								
334	A 31-A43	156	156									8								
335	A42-A36	16		16										1						
336	A6-A36	82	82									4								
337	A36-A43	40		40										2						
338	A38-A42	46	46									2								

Annexure-I Cost of Cutting Water

Sr. No.	Line No.	Length	Storm Pipe Line 400 mm Dia	Storm Pipe Line 500 mm Dia	Storm Pipe Line 600 mm Dia	Storm Pipe Line 700 mm Dia	Storm Pipe Line 800 mm Dia	Storm Pipe Line 900 mm Dia	Storm Pipe Line 1000 mm Dia	Storm Pipe Line 1200 mm Dia	No of Manhole 400 mm Dia	500 mm Dia	600 mm Dia	700 mm Dia	800 mm Dia	900 mm Dia	1000 mm Dia	1100 mm Dia	1200 mm Dia
			Length	Length	Length	Length	Length	Length	Length	Length	Nos	Nos	Nos	Nos	Nos	Nos	Nos	Nos	Nos
		M	M	M	M	M	M	M	M	M									
	3	5	6	8	10	12	14	16	18	20	14	19	20	21	22	23	24	25	26
336	A42-A37	10	10																
340	A37-A44	46	46																
341	A34-A45	91	91																
342	A48-A15	57	57																
343	A42-A16	44	44																
344	E..-A16	48	48																
345	A16-A45	71	71																
346	A45-E12	208		208															
347	B3B10-	110	110																
348	B17-B15	81	81																
349	B15-B1	65	65																
350	B5-B2	107	107																
351	B2-B4	49	49																
352	B16-B3	75	75																
353	B4-B14	315	315																
354	B14-B14	55	55																
355	B13-B13	102	102																
356	B13-B12	39	39																
357	B12-B11	43	43																
358	B11-B10	33	33																
359	B8-B10	37	37																
360	B2-B10	160		160															
361	B10-2	113	113																
362	B2-B1	40		40															
363	A41-B1	167	167																
364	B8-F1	125	125																
365	B2B3-	35		35															
366	B5-F12-	18			18														
367	B3C13-C6	180	180																
368	C6-L2	58	58																

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S. No.	Line Sec.	Length	Storm Pipe Line 400 mm (d)	Storm Pipe Line 500 mm (d)	Storm Pipe Line 600 mm (d)	Storm Pipe Line 700 mm (d)	Storm Pipe Line 800 mm (d)	Storm Pipe Line 900 mm (d)	Storm Pipe Line 1000 mm (d)	Storm Pipe Line 1100 mm (d)	Storm Pipe Line 1200 mm (d)	No of Manhole								
			Length	Length	Length	Length	Length	Length	Length	Length	Length	400 mm (d)	500 mm (d)	600 mm (d)	700 mm (d)	800 mm (d)	900 mm (d)	1000 mm (d)	1100 mm (d)	1200 mm (d)
		M	M	M	M	M	M	M	M	M	M	No	No	No	No	No	No	No	No	No
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
369	C12-C9	117	117									6								
370	C8-C7	23	23									1								
371	C7-C10	80		80									4							
372	C11-C10	61	61									3								
373	C10-S3B13	215		215								11								
374	B8B-A2	23					23								1					
375	B13-B14	43					43								2					
376	B14-B17	55						55								3				
377	B17-B20	11						11								1				
378	B20-B19	52						52								2				
379	B19-B21	41						41								2				
380	B21-B22	14						14								1				
381	B18-S3-	51						51								3				
382	B7BA-B8BS	22	22									1								
383	B3-B4	55	55									3								
384	B6-B4	57	57									3								
385	B4-B5	85	85									4								
386	B5-S3B5	244	244									12								
387	S3B5-C11B4A11	30						30								2				
388	B1B3-B1B2	40	40									2								
389	B4-B2	29	29									1								
390	B2-B1	21	21									1								
391	B1-A2	39	39									2								
392	A2-D23	93	93									4								
393	D23-D9	74	74									4								
394	D23-D7	75	75									4								
395	D7-D21	23	23									1								

Appurtenances of Storm Wa...

Sr. No	Line No.	Length	Storm Pipe Line 400 mm Dia	Storm Pipe Line 500 mm Dia	Storm Pipe Line 600 mm Dia	Storm Pipe Line 700 mm Dia	Storm Pipe Line 800 mm Dia	Storm Pipe Line 900 mm Dia	Storm Pipe Line 1000 mm Dia	Storm Pipe Line 1100 mm Dia	Storm Pipe Line 1200 mm Dia	No of Manhole								
			Length	Length	Length	Length	Length	Length	Length	Length	Length	400 mm Dia	500 mm Dia	600 mm Dia	700 mm Dia	800 mm Dia	900 mm Dia	1000 mm Dia	1100 mm Dia	1200 mm Dia
			M	M	M	M	M	M	M	M	M	No.	No.	No.	No.	No.	No.	No.	No.	No.
1	2	3	4	6	8	10	12	14	14	16	16	18	19	20	21	22	23	24	25	26
396	D21-D22	165	165									8								
397	D5-D22	37	37									2								
398	D22-D18	44	44									2								
399	SMH3-A12	9	9																	
400	A12-A11	50	50									3								
401	A12-A11	53	53									4								
402	A11-A1	153	153									8								
403	A1-A2	42	42									2								
404	A2-A3	54	54									3								
405	D1-A2	23	23									1								
406	A2-D2	74	74									4								
407	D2-D19	110	110									6								
408	D19-D18	131	131									7								
409	D5-D18	130	130									7								
410	D6-D18	40	40									2								
411	D18-D17	47		47									2							
412	D4-SMH17	140	140									7								
413	SMH17-OUTFALL	30			30									2						
		28738	21966	2692	1769	1046	240	254	207	439	135	1123	136	88	55	13	15	10	22	7

For Ivy Consultants Pvt. Ltd.

(Director)