Directorate of Town & Country Planning, Haryana
Ayojna Bhawan, Sector-18, Chandigarh, web site tcpharyana.gov.in
Phone: 0172-2549349; e-mail: tcphry@gmail.com

Regd.

To

M/s Parsvnath Developers Ltd
C/o 6th Floor, Arunachal Building,
19, Bara Khamba Road,
New Delhi-110001

Memo No. LC-1000/1498-JE (S) 2011/ 4893 Dated: 15-04-11

Sub: **Approval of Service Plan/Estimate in respect of licence no 36 of 2010 dated 07.05.2010 for setting up of a Residential Plotted Colony over an area measuring 118.188 acres in the revenue estate of village Bohar, Distt. Rohtak. – M/s Parsvnath Developers Ltd**

Ref :- Your application dated 13.08.2010 on the above cited subject.

The service plan /estimates in respect of above said licence has been received from HUDA. You are requested to submit an additional Bank Guarantee of Rs. 322.37 lac on account of IDWC.

It has also noticed that Rs. 2227.4942 lac is outstanding on account of EDC and Rs. 775.8873 lac is outstanding on account of IDC charges as on 04.04.2011. You are therefore requested to submit above said Bank Guarantee and deposit the outstanding dues alongwith interest up to date to enable this office to take further action in the matter.

This demand is without prejudice of the final decision on the show cause notice issued vide memo no 18077 on 29.12.2010

(R.P. Singh)
District Town Planner (HQ)
O/o Director General, Town & Country Planning
Haryana, Chandigarh

Services Plan & Estimates

ROHTAK 118.188 ACRES – TOWNSHIP

PARSVNATH DEVELOPERS LTD
PARSVNATH METRO TOWER
NEAR SHAHDARA METRO
STATION, SHAHDARA, DELHI

PROJECT REPORT / ESTIMATES FOR PROVIDING INTERNAL SERVICES, e.g. WATER SUPPLY, SEWERAGE, S.W. DRAINAGE ETC. IN RESPECT OF PARASVNATH CITY MEASURING 118.188 ACRES, ROHTAK

Introduction:-

Parsvnath City, Rohtak is a residential colony in Village Bohar, Sector 33-A, Rohtak being developed by M/s Parsvnath Developers Ltd., and its associate companies. The Rohtak town is located on Delhi-Hissar G.T road (National High Way No. 10)

The services scheme for this area is as follows:-

1. **Water Supply:-**

i) **Source:-**

The present source of water supply is Tube wells, as the under ground water in the area is sweet and fit for human consumption. The water is available at a reasonable depth. The average yield of Tube-well with 60' – 80' strainer will be about 5000 Gallons per hour. The recharging of Under Ground Water table in this belt is stated to be good. However, still we shall resort to Rain Water Harvesting systems to keep the recharging system. The number of Tube wells required for the above area for present requirement has been worked out to 9 Nos. and the Tube wells will be bored in tune with growth of demand to avoid absolence of the Tube wells. The ultimate requirement of Tube wells includes provision of 10 % stand bye. It is proposed to drill 3 Nos. Tube wells which is 30 % of total water supply requirement till HUDA water supply is available since ultimate source of water supply is from canal water filtration scheme.

ii) **Design:**

The scheme has been designed for a population of 11516 persons. The rate of water supply per head per day has been

assumed as 155.25 litres (135 + 15 % uncounted water supply) for domestic use. In addition to above, necessary provision for water for commercial area, community building, parks etc. have been taken in to account for calculating the maximum number of Tube wells required.

iii) **Pumping Chamber and Pumping Machinery:**

Provision for adequate pumping chamber and pumping machinery have been made along with provision for stand-bye generator.

iv) **Over Head Service Reservoir:**

One RCC over head service reservoir of 500 KL capacity with 30 M staging height up to bottom slab stand provided in the scheme.

v) **Under Ground Storage**

Under Ground storage provision has been made for 1200 KL in three compartments near the OHSR, which caters for the present and as well as fire fighting requirement. The water for domestic water compartment shall over flow from the fire compartment of 200 KL so that the water in the fire compartment also always remain fresh.

vi) **Boosting Station**

The boosting station is being planned near OHSR catering to the above requirement.

vii) **Distribution System**

The distribution system for this development area has been designed to supply @ 155.25 Litre/head/day with 2 ½ times the average rate of flow on Hazan William formula with C-100.

Necessary provision of laying CI pipe Class 'LA' along with valves and specials has been made in the estimates. The minimum terminal head at any point in this system will be about 17.00 meters so that it can serve the 2 ½ stories construction envisaged in the plan. Minimum pipe diameters for distribution are kept as 100mm dia.

2. **Sewerage:-**

The sewer lines have been designed for 3 times average DWF relation to Water Supply demand and assuming that 75 % of the domestic water supply shall find its way into the proposed sewer. S.W./RCC pipe sewers have been proposed/designed to run half full and 3/4th full. The sewers have been designed on 2.50 ft. per second velocity i.e. self cleansing velocity. Necessary provisions for laying S.W. pipes, RCC pipes etc., manholes etc. has been made in this estimates.

3. **Storm Water Drainage:-**

The storm water drain is being designed to carry 1/4" rain fall per hour. Also suitable provisions are contemplated in our scheme to ensure better recharging of Under Ground Water Table in the area. RCC Hume pipe drain with minimum 400mm dia is proposed in this area.

4. **Roads:-**

The road in the colony are being planned such that minimum width of road provided is 12 M carrier road leading to higher width of roads. The road shall be premixed 1" (25mm) bituminous layer over 4 ½" average (11cm) water bound macadam over 6" (15cm) thick strong soling over compacted earth.

5. **Street Lighting:-**

The provision has been made on lump sum basis.

6. **Horticulture:-**

The usual provision for road side plantation of trees with tree guards has been made for all roads. The parks will also be developed by providing lawns etc.

7. **Specifications:-**

The work will be carried out strictly in accordance with the PWD specification, latest addition applicable in Haryana State.

8. **Rates:-**

Estimates for providing services in this pocket have been prepared on the recent market rates.

9. **Cost:-**

The total cost of development works in this Project Phase one including various P.H. & B & R Services works out to Rs. 3195.95 lacs. which includes 3 % contingency and P.E. charges and 49 % Departmental charges, price escalation, unforeseen action charges also.

The cost per gross acre for this phase works out to Rs. 27.04 lacs./acre which covers the provision of services like water supply, sewerage, storm water drainage, roads, street lighting and plantations including plantations maintenance thereof as well as future expansion whatsoever indicated.

PARSVNATH CITY ROHTAK TOWN (118.188 ACRES)

FINAL ABSTRACT OF COST

1.	Sub Work No. 1	Water Supply	Rs.	502.13 lacs.
2.	Sub Work No. II	Sewerage	Rs.	335.60 lacs.
3.	Sub Work No. III	Storm Drainage	Rs.	277.66 lacs.
4.	Sub Work No. IV	Road and Foot –path	Rs.	505.00 lacs.
5.	Sub Work No. V	Street lighting	Rs.	126.97 lacs.
6.	Sub Work No. VI	Horticulture	Rs.	130.95 lacs.
7.	Sub Work No. VII	Maintenance of Services for 10 years (i.e resurfacing of roads After 1st 5 years & 2nd Phase i.e. 10 years Mtc. (as per HUDA norms)	Rs.	1317.64 lacs
			Rs.	3195.95 lacs.

Cost per Acres = 3195.95/118.188 = Rs. 27.04 lacs/acre

For Parsvnath Developers Ltd.

(B. B. WADHWA)
Sr. General Manager

Executive Engineer
HUDA Divn. No. 1, ROHTAK

Estimate checked for Rs 3195.95 lacs

Superintending Engineer,
H.U.D.A. CIRCLE
ROHTAK

PARSVNATH CITY ROHTAK TOWN (118.188 ACRES)

FINAL ABSTRACT OF COST

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For Parsvnath Developers Ltd.

(B. B. WADHWA)
Sr. General Manager

PARSVNATH CITY ROHTAK TOWN (118.188 ACRES)

WATER SUPPLY ABSTRACT OF COST

Sub Head No. I	Head Works	Rs.	138.05 lacs.
Sub Head No. II	Pumping Machinery	Rs.	37.75 lacs.
Sub Head No. III	Distribution System	Rs.	151.38 lacs.
	Total	Rs.	327.18 lacs.
	Add 3 % contingencies & P.E. charges	Rs.	9.82 lacs.
		Rs.	337.00 lacs.
	Add 49 % Departmental Charges, price escalation, Unforeseen items, admn. Charges	Rs.	165.13 lacs.
		Rs.	502.13 lacs.

C.O. to Final Abstract of Cost

PARSVNATH CITY ROHTAK TOWN (118.188 ACRES)

WATER SUPPLY DESIGN CALCULATION

Requirement of Water

a)	No. of Plots	853 Nos.
	Population @ 13.50 persons per plot = 853 x 13.50	11516 persons
	Daily requirement @ 155.25 (135 + 15 % uncounted W/s) Lit./Head/day = 11516 x 155.25	1786.86 KL
	Say	1800 KL
b)	Additional Requirement for Community/commercials	
	i) Commercial area 4.39 Acre @ 25 KL/day :- 4.39 x 25	109.75 KL
	ii) High School 1 No. @ 150 KL each	150.00 KL
	iii) Primary School 2 No. @ 50KL/day	100.00 KL
	iv) Nursery School 4 Nos. @ 10 KL/day	40.00 KL
	v) Dispensary 1 No. @ 50 KL each.	50.00 KL
	vi) Community centre 1 No. @ 50 KL each.	50.00 KL
		499.75 KL
	Say	500.00 KL
c)	Area under U.D. use 4.85 Acres @ 25 KL/acre/day	121.25 KL
	Say	121.00 KL
d)	Area under Nursing Home 2 No. @ 50 KL each.	100.00 KL
e)	Area under parks 6.06 Acres @ 25 KL/acre/day	124.25 KL
	Say	124.00 KL
f) i)	Cretch 1 NO. @ 10 KL	10.00 KL

ii) Religious Building 1 No. 10 KL — 10.00 KL

iii) Clinic 2 No. @ 10 KL each. — 20.00 KL

iv) Taxi Stand 1 NO. @ 100 KL each — 100.00 KL

140.00 KL

g) Area under Roads
Assuming 10 % of area under Roads
i.e. 118.188 x 10/100 = 8.42 Acres

Required @ 5 KL/acre/day = 11.82 x 5 = 59.10 KL
Say 60 KL

Total requirement per day = a + b + c + d + e + f + g
=(1800 + 500 + 121 + 100 + 124 + 140 + 60) = 2845 KL
Say 2900 KL

A) Tube wells:-

Total daily requirement = 2900 KL

Assuming working Hours of Tube wells = 16 Hours

Assuming discharge/hour of each tube well = 22.70 KL/Hour

No. of Tube wells required = 2900 / 16 x 22.7 = 7.98 Nos.

Add 10 % Stand bye = 0.79 Nos.

8.77 Nos.

Say 9 Nos.

(30 % of 9 Nos.) 2.70 Nos.

Say 3 Nos.

It is proposed to provide 3 Nos. Tube wells to cater the present requirement.

C) **Pumping Machinery for Tube wells:-**

Average spring level = 25.00 M

Average fall in spring level = 3.05 M

Depression head = 6.10 M

Friction loss in main = 2.50 M

36.65 M

Say 40 M

$$BHP = \frac{22700 \times 40 \times 1}{60 \times 60 \times 75 \times 0.60} = 5.60 \text{ BHP} \quad \text{Say } 7.5 \text{ BHP}$$

D) **Overhead Service Reservoir:-**

Daily requirement for domestic use
= A + B + C + D
(1800 + 500 + 121 + 100) = 2521 KL
Say 2500 KL

Taking 6 hours storage = 2500 x 6 /24 = 625 KL

However, it is proposed to provide an OHSR of capacity 625 KL which cater a lot of further expansion also. The balance capacity (625 – 500 = 125 KL) will be added in the capacity of U.G.T.

E) **Underground Tank:-**

Water requirement for domestic use	=	2500.00 KL/day
Capacity of underground tanks taking 8 hours storage 2500 x 8/24	=	833.33 KL
Add balance capacity of OHT	=	125.00 KL
For Fire Fighting purpose	=	200.00 KL
		1158.00 KL

However, it is proposed to provide Under Ground Tank of capacity 1200KL (2,63,736 gallons) which also includes 200 KL capacity for Fire fighting purposes.

This tank will have three compartments, one for fire and the other two for domestic use. The water first enters in the Fire compartment, then over flows to the domestic use compartments so that the water in the Fire compartment shall always remain fresh.

F) **Boosting Station – Pumping Machinery:**

Daily requirement for Domestic use = 2500 KL

Add balance capacity of OHT = 125 KL

2625 KL

Assuming 8 hours running 2 pumps (with one stand bye)

Discharge/hour = 2625 / 2 x 8 = 164.0 KL/hour

Head of Pump

i) Suction lift = 4 M

ii) Friction loss in Main & specials = 4 M

iii) Clear Head = 50 M

58 M

Say 60 M

$$\text{BHP of Motor} = \frac{164000 \times 60 \times 1}{60 \times 60 \times 75 \times 0.60} = 60.74 \text{ BHP}$$

Say 60 BHP

It is proposed to install 2 Nos. centrifugal pumping set delivering 164 KL of water per hour against head of 60 Meters. One Pumping set be installed to act as stand bye set.

G) **Gen Set**

Pump 2 Nos. 60 HP = 120 HP

Tube well = 30 HP

Lighting = 10 HP

160 HP

or 160 x 0.746 x 1.25 = 149.2 = 150 KVA

Say 150 KVA

H) **Design of Rising Main from HUDA Main Water Supply line to UGT**

Sr. No.	Name of line	Daily Water Supply Demand	1.5 times of daily demand	Length	Size in mm	Friction loss per 1000 M	Total loss of head
1.	HUDA W/S Main to UGT	2900 KL	4350 KL 956043 gallons	70 M	300mm	2.10 M	0.15 M

PARSVNATH CITY ROHTAK TOWN (118.188 ACRES)

Sub Work No. I — **Water Supply**

Sub Head No. 1 — Head works

1.	Boring and installing 21" i/d tube-wells with reverse/direct rotary rig complete with pipe and strainer to depth of about 80 m complete.		
	3 Nos. @ Rs. 4,50,000.00 each.	Rs.	13.50 lacs.
2.	Construction of pumping chamber as per standard design of PWD/HUDA.		
	Size 4.90 x 4.25 3 Nos. @ 1,75,000/each	Rs.	5.25 lacs.
3.	Construction of boundary wall, gate around the tube-wells site and water works etc.		
	Water works 1 No. @ 200000/each.	Rs.	2.00 lacs.
	Tube wells 2 Nos. @ 100000/each.	Rs.	2.00 lacs.
4.	Provision of Footpaths hedges and lawns as required at tube well site.		
	2 Nos. @ Rs. 0.50 lac each Tube well	Rs.	1.00 lacs.
	Water works site		
	1 No. @ Rs. 1.00 lac each.	Rs.	1.00 lacs.
5.	Construction of OHSR of following capacity including cost of stair case, inlet outlet, overflow, scour pipe and valves etc. complete in all respect of		
	110000 gallons capacity with 30 M staging height.	Rs.	50.00 lacs.
6.	Constructing boosting chambers of suitable size along with under ground tank of capacity 1200 KL pumping machinery and generating set etc. complete in all respect.		

	Details of Boosting Station		
	i) Construction of Boosting Chamber 40' x 15' @ 1500.00 per sft.	Rs.	9.00 lacs.
	ii) UGT 1200 KL (263726 gallons) capacity including 200 KL for fire fighting in three compartments. 1200 KL @ 2500.00 per KL	Rs.	30.00 lacs.
		Rs.	39.00 lacs.
7.	Provision for carriage of materials and other unforseen items	Rs.	1.00 lacs.
8.	Provision for Staff Quarter for Mtc.		
	1 No. 350 sft. @ Rs. 3.50 lacs. each.	Rs.	3.50 lacs.
	1 No. 440 sft. @ Rs. 4.40 lacs. each.	Rs.	4.40 lacs.
	2 No. 770 sft. @ Rs. 7.70 lacs. each.	Rs.	15.40 lacs.
	Total	Rs.	138.05 lacs.

PARSVNATH CITY ROHTAK TOWN (118.188 ACRES)

Sub Work No. I — **Water Supply**

Sub Head No. 2 — **Pumping Machinery**

1.	Providing and installing electricity driven or submersible pumping set capable of delivering about 22.7 KL water per hour against a total head of 40 M complete with motor and other accessories. 3 Nos. @ Rs. 2,00,000.00 each.	Rs. 6.00 lacs.
2.	Provision for cheap pressure type chlorination plant complete. 3 Nos. @ Rs. 50,000.00 each.	Rs. 1.50 lacs.
3.	Provision for making foundations and erection of Pumping machinery 3 Nos. @ Rs. 25,000.00 each.	Rs. 0.75 lacs.
4.	Provision for pipes, valves and specials inside the pump chamber. 3 Nos. L.S.	Rs. 2.00 lacs.
6.	Provision for electric services connection including electric fitting for tube wells chamber complete L.S. including cost of transformer)	Rs. 3.00 lacs.
6.	Providing and installing centrifugal boosting pumping set, capable of delivering water at 60 M head complete in all respect. 3 Nos. @ Rs. 300000.00	Rs. 9.00 lacs.
7.	Provision for Gen. Set 150 KVA	Rs. 15.00 lacs.
8.	Provision for carriage of material and unforseen item L.S.	Rs. 0.50 lacs.
		Rs. 37.75 lacs.

PARSVNATH CITY ROHTAK TOWN (118.188 ACRES)

Sub Work No. I — **Water Supply**

Sub Head No. 3 — Distribution system/ Rising Mains

1.	Providing, laying, jointing and testing UPVC/CI pipes including cost of excavation complete as per ISI marked.	
	100mm i/d 4875 M @ Rs. 850.00 per M	41,43,750.00
	150mm i/d 3545 M @ Rs. 1350.00 per M	47,85,750.00
	200mm i/d 280 M @ Rs. 1700.00 per M	4,76,000.00
	250mm i/d 1030 M @ Rs. 2650.00 per M	27,29,500.00
	300mm i/d 60 M @ Rs. 3000.00 per M	1,80,000.00
	350mm i/d 220 M @ Rs. 3500.00 per M	7,70,000.00
		130,85,000.00
2.	Providing and fixing sluice valves including cost of brick masonry chamber complete in all respect.	
	100mm i/d 30 Nos. @ Rs.10000.00/each.	3,00,000.00
	150mm i/d 19 Nos. @ Rs.12000.00/each.	2,28,000.00
	200mm i/d 3 Nos. @ Rs. 15000.00/each.	45,000.00
	250mm i/d 4 Nos. @ Rs. 18000.00/each.	72,000.00
	300mm i/d 1 No. @ Rs. 20000.00/each.	20,000.00
	350mm i/d 1 No. @ Rs. 25000.00/each.	25,000.00
		6,90,000.00
3.	Providing and fixing Air Valves and Scour valves including cost of brick masonry chamber complete.	
	10 Nos. @ Rs. 7500.00 each.	75,000.00

4.	Providing and fixing fire hydrants complete with masonry chambers. 50 Nos. @ Rs. 7500.00 each.	3,75,000.00
5.	Providing and fixing indicating plates for sluice valves air valves and fire hydrants. 118 Nos. @ Rs. 600.00 each.	70,800.00
6.	Provision for carriage of material L.S.	2,00,000.00
7.	Provision for cutting of roads and making good to be its original conditions L.S.	2,00,000.00
8.	Provision for rising main from T.W. No. I & II to UGT and 3rd distribution system T.W. 3 Nos. @ 40 Mtr. each. = 120 Mtr. 150mm i/d 120 Mtr. @ Rs. 1350.00 per Mtr.	1,62,000.00
9.	Provision for rising main from HUDA line to UGT 300mm i/d 70 Mtr. @ Rs. 3000.00 per Mtr.	2,10,000.00
10.	Providing & fixing Sluice valve 300mm i/d 1 No. @ Rs. 20000.00	20,000.00
11.	Providing making connection with HUDA L.S.	50,000.00
		151,37,800.00
		151.38 lacs.

MATERIAL STATEMENT OF PARASVNATH CITY ROHTAK

Sr. No.	Name of line	Size wise length in Mtr.					
		100mm	150mm	200mm	250mm	300mm	350mm
1	OHT-A						110
2	A-A1						110
3	A1-A2		150				
4	A1-B					60	
5	B-B1		40				
6	B1-B2		80				
7	B1-B3		60				
8	B3-B4		80				
9	B3-B5		60				
10	B5-B6	80					
11	B5-B7		50				
12	B7-B8	80					
13	B7-B9		60				
14	B9-B10	70					
15	B9-B11	120					
16	B-C				280		
17	C-C1		130				
18	C1-C2	60					
19	C1-C3		60				
20	C3-D6		160				
21	C3-D7	200					
22	C-D				390		
23	D-D1		140				
24	D1-D2		200				
25	D1-D3		120				
26	D3-D4	100					
27	D3-D5		60				
28	D5-D2	120					
29	D5-D6		70				
30	D6-D7	20					

Sr. No.	Name of line	Size wise length in Mtr.					
		100mm	150mm	200mm	250mm	300mm	350mm
31	D6-D8		50				
32	D8-D9	20					
33	D8-D10	170					
34	D-E			30			
35	E-E1		330				
36	E1-E2	60					
37	E2-E3	50					
38	E3-E4	20					
39	E3-E5	80					
40	E-F		40				
41	F-E1	290					
42	F-G		60				
43	G-E2	290					
44	G-H		60				
45	H-H1	40					
46	H-J		180				
47	J-J1	115					
48	J-K		40				
49	K-E4	75					
50	K-L		160				
51	L-L1	110					
52	L1-L2	40					
53	L1-N1	60					
54	L-M		50				
55	M-M1	70					
56	M-N		20				
57	N-N1	110					
58	N-O		60				
59	O-P	140					
60	O-O1	80					
61	A-Q				200		

Sr. No.	Name of line	Size wise length in Mtr.					
		100mm	150mm	200mm	250mm	300mm	350mm
62	Q-a			60			
63	a-a1	40					
64	a-b			60			
65	b-l	150					
66	b-c		50				
67	c-m	150					
68	c-d		50				
69	d-n	150					
70	d-e		50				
71	e-p	150					
72	e-f		60				
73	f-f1		50				
74	f1-q	110					
75	f1-r	160					
76	f-g		50				
77	g-g1	160					
78	g-h		60				
79	h-h1	50					
80	h-j	170					
81	Q-R				160		
82	R-k		40				
83	k-k1	40					
84	k-l		60				
85	l-m		50				
86	m-n		50				
87	n-o		30				
88	o-o1	120					
89	o-p	20					
90	p-q	60					
91	q-r	50					
92	R-S			90			

Sr. No.	Name of line	Size wise length in Mtr.					
		100mm	150mm	200mm	250mm	300mm	350mm
93	S-T1	140					
94	T1-U1	30					
95	S-T			40			
96	T-T1	90					
97	T1-T2	100					
98	T-U		35				
99	U-U1		90				
100	U1-U2	110					
101	U-V		20				
102	V-W		230				
103	V-V1	70					
104	V1-V2	60					
105	V1-V3	25					
	Total	**4875**	**3545**	**280**	**1030**	**60**	**220**

PARSVNATH CITY ROHTAK TOWN (118.188 ACRES)

Sub Work No. II **Sewerage**

1.	Providing, lowering, jointing, cutting salt glazed stone ware pipes and specials into trenches, including cost of excavation, bed concrete, cost of manholes etc. complete in all respects.		
	S.W. Pipe		
	i) 200mm i/d		
	Avg. depth upto 2.0 M 5045 M @ Rs. 1225.00 per mtr.	Rs.	61,80,125.00
	Avg. depth 2.0 M to 4.0 M 2210 M @ Rs. 1350.00 per mtr.	Rs.	29,83,500.00
	ii) 250mm i/d Avg. depth 2 M to 4 M BGL 70 Mtr. @ Rs. 1550.00 per Mtr.	Rs.	1,08,500.00
	iii) 300mm i/d		
	Avg. depth 2 M to 4 M 960 M @ Rs. 1625.00 per Mtr.	Rs.	15,60,000.00
	iii) 400mm i/d Avg. depth 2 M to 4 M 600 M @ Rs. 1700.00 per Mtr.	Rs.	10 ,20,000.00
	Avg. depth 4 M to 6 M 350 M @ Rs. 1900.00 per Mtr.	Rs.	6,65,000.00
	iv) 500mm i/d Avg. depth 4 M to 6 M 200 M @ Rs. 2600.00 per Mtr.	Rs.	5,20,000.00
		Rs.	130,36,625.00
2.	Provision for providing oblique junction L.S.	Rs.	50,000.00
3.	Provision for temporary timbering etc. L.S.	Rs.	80,000.00

4.	Provision for providing and fixing vent shafts at suitable places as per P.H. requirements L.S.	Rs.	3,00,000.00
5.	Provision for STP disposal arrangement till HUDA sewer laid	Rs.	80,00,000.00
6.	Provision for cutting of roads and carriage for materials etc. and other unforseen charges L.S.	Rs.	50,000.00
7.	Provision for making connection with HUDA (L.S.)	Rs.	50,000.00
	Total	Rs.	218,66,625.00
		Rs.	218.67 lacs.
	Add 3 % contingencies and P.E. charges	Rs.	6.56 lacs.
		Rs.	225.23 lacs.
	Add 49 % departmental charges, price escalation, unforeseen items and administration charges	Rs.	110.36 lacs.
		Rs.	335.60 lacs.

C.O. to Final Abstract of Cost

PARSVNATH CITY ROHTAK

MATERIAL STATEMENT SEWERAGE SCHEME

Sr. No. as per Statement	Name of Sewer line	Length in Mtr.	Depth wise length in Mtr.		
			Upto 2 M	2 M to 4 M	4 M to 6 M
A) 200mm i/d					
1	A-B	180	180		
2	B1-B	160	160		
3	B2-B	20	20		
4	B-C	60		60	
5	C1-C	20	20		
6	C-D	160		160	
7	D1-D	60	60		
8	D-J	95		95	
9	E1-E	170	170		
10	E2-E	90	90		
11	E-F	140		140	
12	F1-F	190	190		
13	F-G	120		120	
14	H1-H2	110	110		
15	H3-H2	140	140		
17	H5-H4	80	80		
19	H7-H8	60	60		
20	H9-H8	50	50		
21	H8-H6	110	110		

Sr. No. as per Statement	Name of Sewer line	Length in Mtr.	Depth wise length in Mtr.		
			Upto 2 M	2 M to 4 M	4 M to 6 M
23	G3/1-G3	70	70		
25	G1-G2	120	120		
27	G5-G4	45	45		
29	G7-G6	280	280		
31	G9-G10	90	90		
32	G10-G8	360		360	
34	G12-G11	270	270		
40	K1-K2	110	110		
41	K3-K2	80	80		
42	K2-K4	60	60		
43	K5-K4	90	90		
44	K4-K6	50		50	
45	K7-K6	90	90		
46	K6-K8	70		70	
47	K9-K8	90	90		
48	K8-K10	70		70	
49	K11-K10	90	90		
50	K10-K12	60		60	
51	K13-K12	180	180		
52	K12-Z	60		60	
53	L-M	170	170		

Sr. No. as per Statement	Name of Sewer line	Length in Mtr.	Depth wise length in Mtr.		
			Upto 2 M	2 M to 4 M	4 M to 6 M
54	M1-M	100	100		
55	M-N	40		40	
56	N1-N2	150	150		
57	N3-N2	40	40		
58	N2-N4	80		80	
59	N5-N4	160	160		
60	N4-N	50		50	
61	N-O	60		60	
62	O1-O	140	140		
63	O-P	60		60	
64	P1-P2	160	160		
65	P2-P	150		150	
66	P-Q	60		60	
67	Q1-Q	140	140		
68	Q-R	50		50	
69	R1-R	225		225	
71	S1-S	40	40		
75	T-U	220	220		
76	U1-U2	60	60		
77	U3-U2	30	30		
78	U2-U	90	90		
79	U-V	20		20	

Sr. No. as per Statement	Name of Sewer line	Length in Mtr.	Depth wise length in Mtr.		
			Upto 2 M	2 M to 4 M	4 M to 6 M
80	V1-V	80	80		
81	V-W	40		40	
82	W1-W	100	100		
83	W2-W	80	80		
84	W-X	30		30	
85	X1-X2	180	180		
86	X2-X	100		100	
	Total	**7255**	**5045**	**2210**	**0**
B) 250mm i/d					
16	H2-H4	30		30	
18	H4-H6	40		40	
	Total	**70**	**0**	**70**	**0**
C) 300mm i/d					
22	H6-G3	170		170	
24	G3-G2	60		60	
26	G2-G4	180		180	
28	G4-G6	70		70	
30	G6-G8	50		50	
33	G8-G11	50		50	
35	G11-G	50		50	
70	R-S	60		60	
72	S-Y	50		50	

Sr. No. as per Statement	Name of Sewer line	Length in Mtr.	Depth wise length in Mtr.		
			Upto 2 M	2 M to 4 M	4 M to 6 M
87	X-Y	220		220	
	Total	**960**	**0**	**960**	**0**
D) 400mm i/d					
36	G-J	300		300	
37	J-Z1	240			240
73	Y-Z	300		300	
74	Z-Z1	110			110
	Total	**950**	**0**	**600**	**350**
E) 500mm i/d					
38	Z1-STP	40			40
39	STP- Huda Sewer	160			160
	Total	**200**	**0**	**0**	**200**

PARSVNATH CITY ROHTAK TOWN (118.188 ACRES)

Sub Work No. III — **S. W. Drainage**

1.	Providing, lowering, jointing, cutting RCC NP2 pipes and specials into trenches including cost of excavation, cost of manholes, ventilating chamber etc. complete in all respects.		
	400mm i/d		
	Avg. depth upto 2 M 7190 M @ Rs. 1700.00 per RM	Rs.	122,23,000.00
	Av. Depth 2 M to 4 M 1190 M @ Rs. 1900.00 per RM	Rs.	22,61,000.00
	600mm i/d		
	Avg. depth 2 M to 4 M 1480 M @ Rs. 2100.00 per M	Rs.	31,08,000.00
		Rs.	175,92,000.00
2.	Provision for Road gullies L.S.	Rs.	3,00,000.00
3.	Provision for lighting, watching and temporary diversion of traffic L.S	Rs.	50,000.00
4.	Provision for cutting the roads and carriage of materials etc. and other unforseen items L.S.	Rs.	1,00,000.00
5.	Provision for connection with HUDA	Rs.	50,000.00
		Rs.	180,92,000.00
		Rs.	180.92 lacs.
	Add 3 % contingencies & P.E. charges	Rs.	5.43 lacs.
		Rs.	186.35 lacs.
	Add 49 % P.W.D. charges	Rs.	91.31 lacs.
		Rs.	277.66 lacs.

C.O. to Final Abstract of Cost

PARASVNATH CITY ROHTAK

MATERIAL STATEMENT OF STORM WATER DRAIN

Sr. No.	Name of Drain	Length in Mtr.	Depth wise length of drain		
			Upto 2 M	From 2 M to 4 M	From 4 M to 6 M
1	**2**	**3**	**4**	**5**	6
A) 400mm i/d					
1	A-B	225	225		
2	B1-B2	60	60		
3	B3-B2	30	30		
4	B2-B	90	90		
5	B-C	20	20		
6	C1-C	200	200		
7	C-D	30	30		
8	D1-D2	40	40		
9	D3-D2	20	20		
10	D2-D	90	90		
11	D-E	20	20		
12	E1-E	80	80		
13	E-F	40	40		
14	F1-F	110	110		
16	G-H	200	200		
17	H1-H	110	110		
18	H-J	70	70		
19	J1-J	120	120		
21	K1-K	40	40		
23	L1-L	160	160		
24	L2-L	40	40		
25	L-M	70	70		
26	M1-M	110	110		
27	M-N	80	80		
28	N1-N	140	140		

Sr. No.	Name of Drain	Length in Mtr.	Depth wise length of drain		
			Upto 2 M	From 2 M to 4 M	From 4 M to 6 M
1	2	3	4	5	6
29	N-O	60	60		
30	O1-O	140	140		
32	P1-P	140	140		
34	Q1-Q	140	140		
36	R1-R	40	40		
38	S1-S	40	40		
40	T1-T	160	160		
41	T2-T	150	150		
42	T3-T	20	20		
43	T-U	50	50		
44	U1-U2	60	60		
45	U3-U2	40	40		
46	U2-U	220	220		
47	U4-U	20	20		
49	V1-V	80	80		
51	W1-W	90	90		
53	X1-X	170	170		
55	a-b	110	110		
56	b1-b	60	60		
57	b-c	60	60		
58	c1-c	80	80		
59	c-d	50	50		
60	d1-d	80	80		
61	d-e	65	65		
62	e1-e	80	80		
63	e-f	60	60		
64	f1-f	80	80		
65	f-k1	50	50		

Sr. No.	Name of Drain	Length in Mtr.	Depth wise length of drain		
			Upto 2 M	From 2 M to 4 M	From 4 M to 6 M
1	2	3	4	5	6
66	k3-k	180	180		
70	g1-g2	130	130		
71	g3-g2	80	80		
72	g2-g4	30	30		
73	g5-g6	50	50		
74	g7-g6	40	40		
75	g6-g4	60	60		
76	g4-g8	180	180		
77	g9-g8	40	40		
78	g8-g10	60	60		
79	g11-g10	320	320		
81	g13-g12	320	320		
83	g15-g14	260	260		
85	l3-l2	50	50		
86	l1-l2	100	100		
87	l2-l	50	50		
88	l4-l	80	80		
89	l-m	20	20		
90	m1-m2	110	110		
91	m3-m2	50	50		
92	m2-m	100	100		
93	m-n	50	50		
94	n1-n	110	110		
95	n2-n	130	130		
	Total	**7190**	**7190**	**0**	**0**
B) 500mm i/d					
15	F-MAIN DRAIN	60	60		

Sr. No.	Name of Drain	Length in Mtr.	Depth wise length of drain		
			Upto 2 M	From 2 M to 4 M	From 4 M to 6 M
1	**2**	**3**	**4**	**5**	6
20	J-K	200	200		
22	K-MAIN DRAIN	50	50		
31	O-P	60	60		
33	P-Q	50	50		
35	Q-R	60	60		
37	R-S	70	70		
39	S-DRAIN	20	20		
48	U-V	70	70		
50	V-W	50	50		
52	W-X	110	110		
54	X-j	150	150		
80	g10-g12	100	100		
82	g12-g14	50	50		
84	g14-j	40	40		
96	n-main drain	50	50		
	Total	**1190**	**1190**	**0**	**0**
C) 600mm i/d					
67	j-k1	1330		1330	
68	k1-k	50		50	
69	k-main drain	100		100	
	Total	**1480**	**0**	**1480**	**0**

PARSVNATH CITY ROHTAK TOWN (118.188 ACRES)

ESTIMATE OF ROAD UPTO PREMIX CARPET

Sub Work No. IV

Road upto premix carpet

Width of Road	Length of Road (in Mtrs.)	Metalled Width (Mtrs.)	Area in Sq. M.
A	B	C	B x C
12 M Wide	7870	5.50	43285.00
15 M Wide	150	7.00	1050.00
24 M Wide	1095	14.00	15330.00
			59665.00
		Add 5 % curves	2983.00
			62648.00
		Say	63000 Sqm.

Abstract of Cost

1. Provision for leveling – earth filling / cutting as per site conditions. Area 118.188 Acres @ Rs. 70000.00 per Acre — Rs. 82,73,160.00

2. a) Preparation of sub grade by excavating to an average depth upto 10" dressing of camber and consolidation with road roller including making undulating etc.

   b) Supplying and stacking of stone ballast 3" to 4" gauge @ 50 CFT/100 sq. ft. or road surface.

   c) Laying stone ballast 6" thick and consolidating with road roller complete.

   d) Supplying and stacking of stone ballast 1 ½" to 2" gauge @ 33 cft.100 sq. ft. of road surface.

   e) Supplying and stacking of Moorum (Red Bajri) @ 6 ½ sft./100 sft. Of road surface.

	f) Providing and laying 250mm GSB with 50mm thick B.M. on 15 M road and 250mm GSB with 75mm thick BM on 24 M wide Road		
	g) Laying of wearing coat of 4 ½" and consolidation with binding material complete 63000 sq. m. @ Rs. 200.00 per sqm.	Rs.	126,00,000.00
3.	Provision of Kerb and Channel of concrete (1: 1 ½:3) M – 20 as per standard design. 12 M wide road :- 7870 x 2 = 15740 M 15 M & 24 M wide road 9060 M 2[(150 + 4(1095)] **24800 M** Add 5 % curves 1240 M 26040 M 26040 M @ Rs. 350.00 per M	Rs.	91,14,000.00
4.	Provision of 1" thick premix carpet as per PWD specifications with mechanical pavers 63000 sq. m. @ Rs. 150.00 per sq. m.	Rs.	94,50,000.00
5.	Provision for cement concrete pavement along 18 M road with Pre-cast tiles of cement concrete 1: 1 ½:3 15 & 24 M M wide :- 1245 x 2.4 = 2988 sqm. 2988 sq. m. @ Rs. 350.00 per sqm.	Rs.	10,45,800.00
6.	Provision of guide maps	Rs.	1,00,000.00
7.	Provision for demarcation Burjees – L.S.	Rs.	2,80,000.00
8.	Provision for Traffic Lights – L.S.	Rs.	1,50,000.00
9.	Provision for carriage of material and unforseen items - L.S.	Rs.	70,000.00
10.	Provision for plot Indicator Board - L.S.	Rs.	70,000.00
	Total	Rs.	328,79,800.00
		Rs.	328.80 lacs.
	Add 3 % contingencies	Rs.	9.86 lacs.
		Rs.	338.66 lacs.
	Add 49 % Departmental charges, price escalation and unforeseen items & admn.	Rs.	165.95 lacs.
		Rs.	504.61 lacs.
		Rs.	505.00 lacs.

PARSVNATH CITY ROHTAK TOWN (118.188 ACRES)

ROAD LENGTHS

S. No.	Road No.	Road Length in Meters			Remarks
		12 M Wide	15 M Wide	24 M Wide	
1	1	210			
2	2	80			
3	3	80			
4	4	80			
5	5	110			
6	6	130			
7	7	120			
8	8	--	150		
9	9	25			
10	10	25			
11	11	80			
12	12	370			
13.	13	120			
14	14	40			
15	15	140			
16	16	140			
17	17	140			
18	18	140			
19	19	320			
20	20	110			
21	21	50			
22	22	100			
23	23	40			
24	24	150			
25	25	330			
26	26	30			
27	27	110			

28	28	80			
29	29	80			
30	30	80			
31	31	60			
32	32	100			
33	33	280			
34	34			800	
35	35			45	
36	36	300			
37	37	270			
38	38	270			
39	39	270			
40	40	200			
41	41	110			
42	42	90			
43	43	130			
44	44	70			
45	45	180			
46	46	30			
47	47	80			
48	48			180	
49	49	120			
50	50	120			
51	51	80			
52	52	120			
53	53			70	
54	54	120			
55	55	190			
56	56	230			
57	57	100			
58	58	40			
59	59	50			

60	60	40			
61	61	60			
62	62	270			
63	63	190			
64	64	190			
	Total	7870	150	1095	

PARSVNATH CITY ROHTAK TOWN (118.188 ACRES)

Estimate for Provision of Street Lighting

Sub Work No. V — Street Lighting

1.	Providing street lighting on roads as per standard specifications complete in all respect.		
	Area = 118.188 Acres 118.188 Acres @ Rs. 70,000.00 per Acres	Rs.	82,73,160.00
	Add 3 % Contingency Charges & P.E. Charges	Rs.	2,48,195.00
		Rs.	85,21,355.00
	Add 49 % Departmental charges, price escalation and unforeseen items & Admn. charges	Rs.	41,75,464.00
		Rs.	126,96,819.00
		Say Rs.	126.97 lacs.

C.O. to Final Abstract of Cost

PARSVNATH CITY ROHTAK TOWN (118.188 ACRES)

Sub Work No. VI — Horticulture

1. Development of Lawn Area

a) Trenching the ordinary soil upto depth of 60cm including removal and packing of serviceable material and disposing at a lead of 50 M and making up the trenched area to proper level by filling with earth mixed with manure before and after flooding trench with water including cost of imported earth and manure.
b) Rough dressing of trenched area.
c) Grassing with "doob grass" including watering and maintenance of lawns free from weeds and fit for moving in rows 7.50 cm in either direction including for hedges and grill and barred wire fencing around park and green belts (as per HUDA norms)
Area 118.188 Acres @ 70000.00 — Rs. 82,73,160.00

2. Planting of trees with tree guards on roads at 40' intervals

12 M wide Road 7870 x 1 = 7870 RM
15 & 24 M wide Road 1245 x 2 = 2490 RM
10360 RM

Trees @ 12 M c/c 10360 / 12 = 863.33
Say 863.00

Cost of One Tree

Excavation	Rs. 20.00 each.
Manure	Rs. 30.00 each.
Tree Plants	Rs. 50.00 each.
Tree Guards	Rs. 200.00 each.
	Rs. 300.00 each.

863 trees @ Rs. 300.00 each. — Rs. 2,58,900.00

Rs. 85,32,060.00

Add 3 % Contingency & P.E. Charges — Rs. 2,55,962.00

Rs. 87,88,023.00

Add 49 % departmental charges, price escalcation, unforeseen items & admn. Charges. — Rs. 43,06,131.00

Rs. 130,94,153.00
Say 130.95 lacs.

C.O. to Final Abstract of Cost

PARSVNATH CITY ROHTAK TOWN (118.188 ACRES)

Sub Work No. VII

MTC. CHARGES AND RESURFACING OF ROADS

1	Provision for maintenance charges for water Supply, Sewerage, Storm water drainage, Roads, street light, Horticulture etc. complete Including operation and establishment Charges as per HUDA norms after completion 118.188 Acres @ 3.00 lacs per acre	Rs. 354.564 lacs
2	Provision for resurfacing of roads after first Five years of maintenance i.e. 100 mm thick With 25 mm thick premix carpet with seal Coat with mechanical paver 63000 sq.m @ Rs. 350/- per sq.mtr.	Rs. 220.50 lacs
3	Provision for resurfacing of roads after 10 Years of Maintenance i.e. 25mm thick Premix Carpet with seal coat with Mechanical paver 63000 sq. mt. @ Rs. 450/- Per sq. mt.	Rs. 283.50 lacs
		Rs. 858.64 lacs
	Add: 3% contingencies & P.E Charges	Rs. 25.76 lacs
		Rs. 884.32 lacs
	Add: 49% Deptt. Price escalation & Unforeseen charges	Rs. 433.32 lacs
		Rs.1317.64 lacs

C.O to final abstract of cost

TERMINAL HEAD STATEMENT OF PARASVNATH CITY ROHTAK

S. No.	Name of pipe line	No. of Plots			Population @ 13.5 person /plot	Requirement in KL @ 155.25 (135 + 15%) ltrs. Per head per day	Requirement from community building		Requirement in KL from parks pockets etc.		U.D. Area		Total Requirement in K.L.	Total Requirement in K.L. @ 2.5 times	Total discharge in gallons	Proposed size of pipe line in mm	Length of pipe line in M	Loss of Head in 1000 M	Total loss of Head in Mtrs.	Hydraulic level			Terminal Head available	Remarks
		Self	Branch	Total			Self	Total	Area in Acres	Req. @ 25 KL per acre	Area	Discharge								Upper end	lower end	Ground level at lower end		
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
1	OHT-A	-	853	853	11516	1787.86		740	6.06	151.50	4.85	121.25	2800.61	7001.52	1538795	350	110	6.90	0.76	245.40	244.64	220.40	24.24	G.L. at OHT = 220.40
2	A-A1	-	844	844	11394	1768.92		740	6.06	151.50	4.85	121.25	2781.67	6954.17	1528388	350	110	6.90	0.76	244.64	243.88	220.70	23.18	Terminal Head = 25.00
3	A1-A2	9		9	122	18.94	50	50		0.00	0.15	3.75	72.69	181.73	39940	150	150	0.44	0.07	243.88	243.81	220.50	23.31	Hydraulic level
4	A1-B	-	396	396	5346	829.97		230	3.22	80.50	4.00	100.00	1240.47	3101.17	681574	300	60	1.72	0.10	243.88	243.78	220.38	23.40	at OHT = 245.40
5	B-B1	2	86	88	1188	184.44		20	0.40	10.00	0.88	22.00	236.44	591.09	129910	150	40	2.06	0.08	243.78	243.70	220.38	23.32	
6	B1-B2	7		7	95	14.75	10	10		0.00	0.36	9.00	33.75	84.37	18543	150	80	0.44	0.04	243.70	243.66	220.40	23.26	
7	B1-B3	3	76	79	1067	165.65	10	10		0.00	0.52	13.00	188.65	471.63	103655	150	60	1.62	0.10	243.70	243.60	220.55	23.05	
8	B3-B4	9		9	122	18.94			0.35	8.75			27.69	69.23	15215	150	80	0.44	0.04	243.60	243.56	220.55	23.01	
9	B3-B5	5	62	67	905	140.50				0.00	0.52	13.00	153.50	383.75	84341	150	60	1.03	0.06	243.60	243.54	220.60	22.94	
10	B5-B6	14		14	189	29.34				0.00			29.34	73.36	16122	100	80	0.62	0.05	243.54	243.49	220.60	22.89	
11	B5-B7	4	44	48	648	100.60				0.00	0.52	13.00	113.60	284.01	62419	150	50	0.71	0.04	243.54	243.50	220.65	22.85	
12	B7-B8	16		16	216	33.53				0.00			33.53	83.84	18425	100	80	0.62	0.05	243.50	243.45	220.65	22.80	
13	B7-B9	4	24	28	378	58.68				0.00	0.52	13.00	71.68	179.21	39387	150	60	0.44	0.03	243.50	243.47	220.65	22.82	
14	B9-B10	11		11	149	23.13				0.00	0.10	2.50	25.63	64.08	14084	100	70	0.62	0.04	243.47	243.43	220.65	22.78	
15	B9-B11	13		13	176	27.32				0.00	0.42	10.50	37.82	94.56	20782	100	120	0.94	0.11	243.47	243.36	220.70	22.66	
16	B-C		308	308	4158	645.53	84	200	3.22	80.50	3.41	85.25	1011.28	2528.20	555648	250	280	2.64	0.74	243.78	243.04	220.30	22.74	
17	C-C1	3	64	67	905	140.50			0.15	3.75			144.25	360.63	79259	150	130	0.86	0.11	243.04	242.93	220.38	22.55	
18	C1-C2	3		3	41	6.37				0.00			6.37	15.91	3497	100	60	0.62	0.04	242.93	242.89	220.40	22.49	
19	C1-C3	5	56	61	824	127.93			0.07	1.75			129.68	324.19	71250	150	60	0.71	0.04	242.93	242.89	220.38	22.51	
20	C3-D6	27		27	365	56.67				0.00			56.67	141.67	31135	150	160	1.32	0.21	242.89	242.68	220.36	22.32	

S. No.	Name of pipe line	No. of Plots			Population @ 13.5 person /plot	Requirement in KL @ 155.25 (135 + 15%) ltrs. Per head per day	Requirement from community building		Requirement in KL from parks pockets etc.		U.D. Area		Total Requirement in K.L.	Total Requirement in K.L. @ 2.5 times	Total discharge in gallons	Proposed size of pipe line in mm	Length of pipe line in M	Loss of Head in 1000 M	Total loss of Head in Mtrs.	Hydraulic level			Terminal Head available	Remarks
		Self	Branch	Total			Self	Total	Area in Acres	Req. @ 25 KL per acre	Area	Discharge								Upper end	lower end	Ground level at lower end		
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
21	C3-D7	29		29	392	60.86				0.00			60.86	152.15	33438	100	200	1.32	0.26	242.89	242.63	220.36	22.27	
22	C-D		241	241	3254	505.18		116	2.72	68.00	3.41	85.25	774.43	1936.08	425512	250	390	1.68	0.66	243.04	242.38	220.30	22.08	
23	D-D1	6	89	95	1283	199.19			1.62	40.50			239.69	599.21	131695	150	140	2.06	0.29	242.38	242.09	220.33	21.76	
24	D1-D2	10		10	135	20.96			1.4	35.00			55.96	139.90	30747	150	200	1.32	0.26	242.09	241.83	220.40	21.43	
25	D1-D3	8	71	79	1067	165.65				0.00			165.65	414.13	91017	150	120	0.57	0.07	242.09	242.02	220.35	21.67	
26	D3-D4	18		18	243	37.73				0.00			37.73	94.31	20728	100	100	0.62	0.06	242.02	241.96	220.40	21.56	
27	D3-D5	9	44	53	716	111.16				0.00			111.16	277.90	61076	150	60	0.57	0.03	242.02	241.99	220.35	21.64	
28	D5-D2	16		16	216	33.53				0.00			33.53	83.84	18425	100	120	0.62	0.07	241.99	241.92	220.35	21.57	
29	D5-D6		28	28	378	58.68				0.00			58.68	146.71	32244	150	70	0.44	0.03	241.99	241.96	220.36	21.60	
30	D6-D7	4		4	54	8.38				0.00			8.38	20.96	4606	100	20	0.62	0.01	241.96	241.95	220.36	21.59	
31	D6-D8		24	33	446	69.24				0.00			50.30	125.75	27637	150	50	0.44	0.02	241.96	241.94	220.76	21.18	
32	D8-D9	4		4	54	8.38				0.00			8.38	20.96	4606	100	20	0.62	0.01	241.94	241.93	220.76	21.17	
33	D8-D10	20		20	270	41.92				0.00			41.92	104.79	23032	100	170	0.62	0.11	241.94	241.83	220.45	21.38	
34	D-E	146	-	146	1971	306.00		116	1.31	32.75	2.85	71.25	526.00	1314.99	289009	200	30	2.18	0.07	242.38	242.31	220.33	21.98	
35	E-E1	13	9	22	297	46.11	60	60	0.1	2.50	1.51	37.75	146.36	365.90	80417	150	330	0.86	0.28	242.31	242.03	220.40	21.63	
36	E1-E2	4	5	9	122	18.94				0.00	0.51	12.75	31.69	79.23	17412	100	60	0.62	0.04	242.03	241.99	220.40	21.59	
37	E2-E3	3	2	5	68	10.56				0.00	0.51	12.75	23.31	58.27	12806	100	50	0.62	0.03	241.99	241.96	220.30	21.66	
38	E3-E4			0	0	0.00				0.00	0.32	8.00	8.00	20.00	4396	100	20	0.62	0.01	241.96	241.95	220.30	21.65	
39	E3-E5	2	-	2	27	4.19				0.00			4.19	10.48	2303	100	80	0.62	0.05	241.96	241.91	220.40	21.51	
40	E-F		124	124	1674	259.89	8	56		0.00	1.34	33.50	349.39	873.47	191972	150	40	4.35	0.17	242.31	242.14	220.30	21.84	
41	F-E1	27	-	27	365	56.67				0.00			56.67	141.67	31135	100	290	1.32	0.38	242.14	241.76	220.40	21.36	
42	F-G		97	97	1310	203.38	8	48	1.21	30.25	1.34	33.50	315.13	787.82	173147	150	60	3.71	0.22	242.14	241.92	220.36	21.56	

S. No.	Name of pipe line	No. of Plots			Population @ 13.5 person /plot	Requirement in KL @ 155.25 (135 + 15%) ltrs. Per head per day	Requirement from community building		Requirement in KL from parks pockets etc.		U.D. Area		Total Requirement in K.L.	Total Requirement in K.L. @ 2.5 times	Total discharge in gallons	Proposed size of pipe line in mm	Length of pipe line in M	Loss of Head in 1000 M	Total loss of Head in Mtrs.	Hydraulic level			Terminal Head available	Remarks
		Self	Branch	Total			Self	Total	Area in Acres	Req. @ 25 KL per acre	Area	Discharge								Upper end	lower end	Ground level at lower end		
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
43	G-E2	27	-	27	365	56.67				0.00			56.67	141.67	31135	100	290	1.32	0.38	241.92	241.54	220.30	21.24	
44	G-H		70	70	945	146.71	9	40		0.00	1.34	33.50	220.21	550.53	120995	150	60	2.06	0.12	241.92	241.80	220.40	21.40	
45	H-H1		-	0	0	0.00	10	10	1.21	30.25			40.25	100.63	22115	100	40	0.62	0.02	241.80	241.78	220.30	21.48	
46	H-J	20	50	70	945	146.71		21	1.21	30.25	1.34	33.50	231.46	578.65	127176	150	180	2.06	0.37	241.80	241.43	220.38	21.05	
47	J-J1	8		8	108	16.77				0.00	0.24	6.00	22.77	56.92	12509	100	115	0.62	0.07	241.43	241.36	220.38	20.98	
48	J-K	2	40	42	567	88.03		21	1.21	30.25	0.77	19.25	158.53	396.32	87103	150	40	1.03	0.04	241.43	241.39	220.38	21.01	
49	K-E4	4		4	54	8.38				0.00			8.38	20.96	4606	100	75	0.62	0.05	241.39	241.34	220.40	20.94	
50	K-L	9	27	36	486	75.45		21	1.15	28.75	0.77	19.25	144.45	361.13	79369	150	160	0.86	0.14	241.39	241.25	220.68	20.57	
51	L-L1	4	10	14	189	29.34				0.00	0.56	14.00	43.34	108.36	23814	100	110	0.62	0.07	241.25	241.18	220.60	20.58	
52	L1-L2	5		5	68	10.56				0.00	0.13	3.25	13.81	34.52	7586	100	40	0.62	0.02	241.18	241.16	220.50	20.66	
53	L1-N1	5		5	68	10.56				0.00			10.56	26.39	5801	100	60	0.62	0.04	241.18	241.14	220.50	20.64	
54	L-M		13	13	176	27.32		21	0.06	1.50			49.82	124.56	27376	150	50	0.44	0.02	241.25	241.23	220.68	20.55	
55	M-M1	8		8	108	16.77				0.00			16.77	41.92	9213	100	70	0.62	0.04	241.23	241.19	220.70	20.49	
56	M-N		5	5	68	10.56		21	0.06	1.50			33.06	82.64	18163	150	20	0.44	0.01	241.23	241.22	220.50	20.72	
57	N-N1			0	0	0.00							0.00	0.00	0	100	110	Connecting line						
58	N-O		5	5	68	10.56		21	0.06	1.50			33.06	82.64	18163	150	60	0.44	0.03	241.22	241.19	220.70	20.49	
59	O-P			0	0	0.00	21	21		0.00			21.00	52.50	11538	100	140	0.62	0.09	241.19	241.10	220.50	20.60	
60	O-O1	5		5	68	10.56				0.00			10.56	26.39	5801	100	80	0.62	0.05	241.19	241.14	220.69	20.45	
61	A-Q		445	445	6008	932.74		470	2.08	52.00	0.70	17.50	1472.24	3680.61	808923	250	200	5.10	1.02	244.64	243.62	220.70	22.92	
62	Q-a	5	196	201	2714	421.35			0.58	14.50			435.85	1089.62	239477	200	60	1.62	0.10	244.62	244.52	220.72	23.80	
63	a-a1	6		6	81	12.58				0.00			12.58	31.44	6909	100	40	0.62	0.02	244.52	244.50	220.72	23.78	
64	a-b	6	184	190	2565	398.22			0.58	14.50			412.72	1031.79	226767	200	60	1.43	0.09	244.52	244.43	220.72	23.71	

S. No.	Name of pipe line	No. of Plots			Population @ 13.5 person /plot	Requirement in KL @ 155.25 (135 + 15%) ltrs. Per head per day	Requirement from community building		Requirement in KL from parks pockets etc.		U.D. Area		Total Requirement in K.L.	Total Requirement in K.L. @ 2.5 times	Total discharge in gallons	Proposed size of pipe line in mm	Length of pipe line in M	Loss of Head in 1000 M	Total loss of Head in Mtrs.	Hydraulic level			Terminal Head available	Remarks
		Self	Branch	Total			Self	Total	Area in Acres	Req. @ 25 KL per acre	Area	Discharge								Upper end	lower end	Ground level at lower end		
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
65	b-l	28		28	378	58.68				0.00			58.68	146.71	32244	100	150	1.32	0.20	243.43	243.23	220.78	22.45	
66	b-c	7	149	156	2106	326.96			0.58	14.50			341.46	853.64	187613	150	50	4.35	0.22	243.43	243.21	220.74	22.47	
67	c-m	19		19	257	39.90			0.4	10.00			49.90	124.75	27417	100	150	0.94	0.14	243.21	243.07	220.78	22.29	
68	c-d	3	127	130	1755	272.46			0.18	4.50			276.96	692.41	152178	150	50	3.10	0.16	243.21	243.05	220.76	22.29	
69	d-n	14		14	189	29.34				0.00			29.34	73.36	16122	100	150	0.62	0.09	243.05	242.96	220.68	22.28	
70	d-e	3	110	113	1526	236.91			0.18	4.50			241.41	603.53	132644	150	50	2.06	0.10	243.05	242.95	220.78	22.17	
71	e-p	20		20	270	41.92				0.00			41.92	104.79	23032	100	150	0.62	0.09	242.95	242.86	220.68	22.18	
72	e-f	3	87	90	1215	188.63			0.18	4.50			193.13	482.82	106115	150	60	1.62	0.10	242.95	242.85	220.76	22.09	
73	f-f1	4	32	36	486	75.45				0.00			75.45	188.63	41457	150	50	0.44	0.02	242.85	242.83	220.76	22.07	
74	f1-q	10		10	135	20.96				0.00			20.96	52.40	11516	100	110	0.62	0.07	242.83	242.76	220.68	22.08	
75	f1-r	22		22	297	46.11				0.00			46.11	115.27	25335	100	160	0.94	0.15	242.83	242.68	220.68	22.00	
76	f-g	5	46	51	689	106.97			0.18	4.50			111.47	278.67	61246	150	50	0.57	0.03	242.85	242.82	220.81	22.01	
77	g-g1	13		13	176	27.32				0.00			27.32	68.31	15013	100	160	0.62	0.10	242.82	242.72	220.90	21.82	
78	g-h	6	27	33	446	69.24			0.18	4.50			73.74	184.35	40517	150	60	0.57	0.03	242.82	242.79	220.88	21.91	
79	h-h1	6		6	81	12.58				0.00			12.58	31.44	6909	100	50	0.62	0.03	242.79	242.76	220.88	21.88	
80	h-j	21		21	284	44.09				0.00			44.09	110.23	24226	100	170	0.94	0.16	242.79	242.63	220.90	21.73	
81	Q-R	3	244	247	3335	517.76		370	1	25.00	0.70	17.50	930.26	2325.65	511131	250	160	2.29	0.37	243.62	243.25	220.50	22.75	
82	R-k		31	31	419	65.05	210	210		0.00			275.05	687.62	151126	150	40	3.10	0.12	243.25	243.13	220.78	22.35	
83	k-k1	7		7	95	14.75				0.00			14.75	36.87	8104	100	40	0.62	0.02	243.13	243.11	220.78	22.33	
84	k-l		24	24	324	50.30	210	210		0.00			260.30	650.75	143022	150	60	2.56	0.15	243.13	242.98	220.78	22.20	
85	l-m		24	24	324	50.30	210	210		0.00			260.30	650.75	143022	150	50	2.56	0.13	242.98	242.85	220.78	22.07	
86	m-n		24	24	324	50.30	210	210		0.00			260.30	650.75	143022	150	50	2.56	0.13	242.85	242.72	220.78	21.94	

S. No.	Name of pipe line	No. of Plots			Population @ 13.5 person /plot	Requirement in KL @ 155.25 (135 + 15%) ltrs. Per head per day	Requirement from community building		Requirement in KL from parks pockets etc.		U.D. Area		Total Requirement in K.L.	Total Requirement in K.L. @ 2.5 times	Total discharge in gallons	Proposed size of pipe line in mm	Length of pipe line in M	Loss of Head in 1000 M	Total loss of Head in Mtrs.	Hydraulic level			Terminal Head available	Remarks
		Self	Branch	Total			Self	Total	Area in Acres	Req. @ 25 KL per acre	Area	Discharge								Upper end	lower end	Ground level at lower end		
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
87	n-o		24	24	324	50.30				0.00			50.30	125.75	27638	150	30	0.44	0.01	242.72	242.71	220.68	22.03	
88	o-o1	24		24	324	50.30				0.00			50.30	125.75	27638	100	120	0.94	0.11	242.71	242.60	220.70	21.90	connecting line
89	o-p			0	0	0.00				0.00			0.00	0.00	0	100	20	0.62	0.01	242.71	242.70	220.68	22.02	
90	p-q			0	0	0.00				0.00			0.00	0.00	0	100	60	0.62	0.04	242.70	242.66	220.68	21.98	
91	q-r			0	0	0.00				0.00			0.00	0.00	0	100	50	0.62	0.03	242.66	242.63	220.68	21.95	
92	R-S	3	213	216	2916	452.71	100	160	1.02	25.50	0.70	15.00	653.21	1633.02	358906	200	90	3.43	0.31	243.25	242.94	220.50	22.44	
93	S-T1	23		23	311	48.28			1.02	25.50	0.70	15.00	88.78	221.96	48782	100	140	3.39	0.47	242.94	242.47	220.68	21.79	
94	T1-U1			0	0	0.00				0.00	0.70	15.00	15.00	37.50	8242	100	30	0.62	0.02	242.47	242.45	220.69	21.76	
95	S-T		190	190	2565	398.22		60		0.00			458.22	1145.54	251767	200	40	1.84	0.07	242.94	242.87	220.68	22.19	
96	T-T1	40		40	540	83.84				0.00			83.84	209.59	46063	100	90	2.23	0.20	242.87	242.67	220.68	21.99	
97	T1-T2	15		15	203	31.52	60	60		0.00			91.52	228.79	50283	100	100	3.39	0.34	242.67	242.33	220.70	21.63	
98	T-U		135	135	1823	283.02				0.00			283.02	707.55	155506	150	35	3.10	0.11	242.87	242.76	220.68	22.08	
99	U-U1	40	26	66	891	138.33				0.00			138.33	345.82	76004	150	90	0.86	0.08	242.76	242.68	220.69	21.99	
100	U1-U2	26		26	351	54.49				0.00	0.70	15.00	69.49	173.73	38183	100	110	1.74	0.19	242.68	242.49	220.70	21.79	
101	U-V		69	69	932	144.69				0.00			144.69	361.73	79502	150	20	0.71	0.01	242.76	242.75	220.68	22.07	
102	V-W	46		46	621	96.41				0.00			96.41	241.03	52973	150	230	0.44	0.10	242.75	242.65	220.70	21.95	
103	V-V1		23	23	311	48.28				0.00			48.28	120.71	26529	100	70	0.94	0.07	242.75	242.68	220.70	21.98	
104	V1-V2	10		10	135	20.96				0.00			20.96	52.40	11516	100	60	0.62	0.04	242.68	242.64	220.70	21.94	
105	V1-V3	5		5	68	10.56				0.00			10.56	26.39	5801	100	25	0.62	0.02	242.68	242.66	220.70	21.96	

PARSVNATH CITY ROHTAK

Design of sewerage scheme

Sr. No.	Name of Sewer line	No. of plots to be served			Population @ 13.5 persons per plot	Discharge @ 155.25 litre/H/day in KL	Discharge of community building (in KL)		Discharge in Un-determine area in KL	Total discharge in KL	Peak discharge in cusec @ 75% of 3 times DWF	Proposed size of sewer line	Velocity in ft./sec.	Design discharge	Length in Mtr.	Gradient	Fall	Ground level		Invert level			Depth		Average depth
		Self	Branch	Total			Self	Total										Upper end	Lower end	Upper end	Lower end		Upper end	Lower end	
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
1	A-B	20	-	20	270	41.918				41.918	0.04	200	2.50	0.44	180	1/225	0.80	220.45	220.38	219.25	218.45		1.20	1.93	1.57
2	B1-B	29		29	392	60.858				60.858	0.06	200	2.50	0.44	160	1/225	0.71	220.40	220.38	219.20	218.49		1.20	1.89	1.55
3	B2-B	4		4	54	8.384				8.384	0.01	200	2.50	0.44	20	1/225	0.09	220.38	220.38	219.18	219.09		1.20	1.29	1.24
4	B-C		53	53	716	111.159				111.159	0.10	200	2.50	0.44	60	1/225	0.27	220.38	220.36	218.45	218.18		1.93	2.18	2.06
5	C1-C	4		4	54	8.384				8.384	0.01	200	2.50	0.44	20	1/225	0.09	220.36	220.36	219.16	219.07		1.20	1.29	1.25
6	C-D	32	57	89	1202	186.611				186.611	0.17	200	2.50	0.44	160	1/225	0.71	220.36	220.38	218.18	217.47		2.18	2.91	2.55
7	D1-D	4		4	54	8.384				8.384	0.01	200	2.50	0.44	60	1/225	0.27	220.40	220.38	219.20	218.93		1.20	1.45	1.33
8	D-J	2	93	95	1283	199.186				199.186	0.18	200	2.50	0.44	95	1/225	0.42	220.38	220.38	217.47	217.05		2.91	3.33	3.12
9	E1-E	26		26	351	54.493				54.493	0.06	200	2.50	0.44	170	1/225	0.76	220.40	220.35	219.20	218.44		1.20	1.91	1.56
10	E2-E	17		17	230	35.708				35.708	0.03	200	2.50	0.44	90	1/225	0.40	220.40	220.35	219.20	218.80		1.20	1.55	1.38
11	E-F	9	43	52	702	108.986				108.986	0.10	200	2.50	0.44	140	1/225	0.62	220.35	220.33	218.44	217.82		1.91	2.51	2.21
12	F1-F	9		9	122	18.941				18.941	0.02	200	2.50	0.44	190	1/225	0.84	220.40	220.33	219.20	218.36		1.20	1.97	1.59
13	F-G	6	61	67	905	140.501				140.501	0.13	200	2.50	0.44	120	1/225	0.53	220.33	220.30	217.82	217.29	216.68	2.51	3.01	2.76
14	H1-H2	7		7	95	14.749				14.749	0.01	200	2.50	0.44	110	1/225	0.49	220.69	220.70	219.49	219.00		1.20	1.70	1.45
15	H3-H2	4		4	54	8.384		21.000		29.384	0.03	200	2.50	0.44	140	1/225	0.62	220.50	220.70	219.30	218.68	218.65	1.20	2.02	1.61
16	H2-H4		11	11	149	23.132		25.000		48.132	0.04	250	2.50	0.68	30	1/305	0.10	220.70	220.68	218.65	218.55		2.05	2.13	2.09
17	H5-H4	8		8	108	16.767			5.000	21.767	0.02	200	2.50	0.44	80	1/225	0.36	220.70	220.68	219.50	219.14		1.20	1.54	1.37
18	H4-H6		19	19	257	39.899		21.000	3.000	63.899	0.06	250	2.50	0.68	40	1/305	0.13	220.68	220.68	218.55	218.42	218.37	2.13	2.26	2.19
19	H7-H8	6		6	81	12.575			3.000	15.575	0.01	200	2.50	0.44	60	1/225	0.27	220.50	220.50	219.30	219.03		1.20	1.47	1.33

Sr. No.	Name of Sewer line	No. of plots to be served			Population @ 13.5 persons per plot	Discharge @ 155.25 litre/H/day in KL	Discharge of community building (in KL)		Discharge in Un-determine area in KL	Total discharge in KL	Peak discharge in cusec @ 75% of 3 times DWF	Proposed size of sewer line	Velocity in ft./sec.	Design discharge	Length in Mtr.	Gradient	Fall	Ground level		Invert level			Depth		Average depth
		Self	Branch	Total			Self	Total										Upper end	Lower end	Upper end	Lower end		Upper end	Lower end	
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
20	H9-H8	4		4	54	8.384				8.384	0.01	200	2.50	0.44	50	1/225	0.22	220.50	220.50	219.30	219.08		1.20	1.42	1.31
21	H8-H6		10	10	135	20.959			14.000	34.959	0.03	200	2.50	0.44	110	1/225	0.49	220.50	220.68	219.03	218.54		1.47	2.14	1.81
22	H6-G3	9	29	38	513	79.643		21.000	14.000	114.643	0.09	300	2.50	0.98	170	1/385	0.44	220.68	220.38	218.37	217.93		2.31	2.45	2.38
23	G3/1-G3	4		4	54	8.384			5.000	13.384	0.01	200	2.50	0.44	70	1/225	0.31	220.40	220.38	219.20	218.89		1.20	1.49	1.35
24	G3-G2	2	42	44	594	92.219		21.000	19.000	132.219	0.12	300	2.50	0.98	60	1/385	0.16	220.40	220.38	217.93	217.77		2.47	2.61	2.54
25	G1-G2	8		8	108	16.767			6.000	22.767	0.02	200	2.50	0.44	120	1/225	0.53	220.68	220.38	219.48	218.95		1.20	1.43	1.32
26	G2-G4	20	52	72	972	150.903		21.000	33.000	204.903	0.17	300	2.50	0.98	180	1/385	0.47	220.38	220.30	217.77	217.30		2.61	3.00	2.80
27	G5-G4			0	0	0.000	10.000	31.000		31.000	0.01	200	2.50	0.44	45	1/225	0.20	220.30	220.30	219.10	218.90		1.20	1.40	1.30
28	G4-G6		72	72	972	150.903	10.000	41.000	38.000	229.903	0.21	300	2.50	0.98	70	1/385	0.18	220.30	220.23	217.30	217.12		3.00	3.11	3.05
29	G7-G6	27		27	365	56.666				56.666	0.05	200	2.50	0.44	280	1/305	1.24	220.40	220.36	219.20	217.96		1.20	2.40	1.80
30	G6-G8		99	99	1337	207.569	8.000	43.000	38.000	288.569	0.26	300	2.50	0.98	50	1/385	0.13	220.36	220.33	217.12	216.99		3.24	3.34	3.29
31	G9-G10	7		7	95	14.749			8.000	22.749	0.02	200	2.50	0.44	90	1/225	0.40	220.40	220.40	219.20	218.80		1.20	1.60	1.40
32	G10-G8	27	7	34	459	71.260			8.000	79.260	0.07	200	2.50	0.44	360	1/225	1.60	220.40	220.33	218.80	217.20	216.99	1.60	3.13	2.36
33	G8-G11		133	133	1796	278.829	7.000	56.000	46.000	380.829	0.35	300	2.50	0.98	50	1/385	0.13	220.33	220.33	216.99	216.86		3.34	3.47	3.41
34	G12-G11	13		13	176	27.324	60.000	116.000	25.000	168.324	0.15	200	2.50	0.44	270	1/225	1.20	220.40	220.33	219.20	218.00		1.20	2.33	1.77
35	G11-G		146	146	1971	305.998		116.000	71.000	492.998	0.45	300	2.50	0.98	50	1/385	0.13	220.33	220.38	216.86	216.73	216.68	3.47	3.65	3.56
36	G-J		213	213	2876	446.499		116.000	85.000	647.499	0.59	400	2.50	1.74	300	1/570	0.53	220.30	220.38	216.68	216.15		3.62	4.23	3.93
37	J-Z1		308	308	4158	645.530	84.000	200.000	85.000	930.530	0.85	400	2.50	1.74	240	1/570	0.42	220.38	220.38	216.15	215.73	215.55	4.23	4.65	4.44
38	Z1-STP		853	853	11516	1787.859		740.000	130.000	2657.859	2.43	500	2.82	3.74	40	1/760	0.05	220.38	220.38	215.55	215.50		4.83	4.88	4.85
39	STP-Huda Sewer		853	853	11516	1787.859		740.000	130.000	2657.859	2.43	500	2.82	3.74	160	1/760	0.21	220.38	220.72	215.50	215.29		4.88	5.43	5.16
40	K1-K2	13		13	176	27.324			11.000	38.324	0.04	200	2.50	0.44	110	1/225	0.49	220.70	220.66	219.50	219.01		1.20	1.65	1.43

Sr. No.	Name of Sewer line	No. of plots to be served			Population @ 13.5 persons per plot	Discharge @ 155.25 litre/H/day in KL	Discharge of community building (in KL)		Discharge in Un-determine area in KL	Total discharge in KL	Peak discharge in cusec @ 75% of 3 times DWF	Proposed size of sewer line	Velocity in ft./sec.	Design discharge	Length in Mtr.	Gradient	Fall	Ground level		Invert level			Depth		Average depth
		Self	Branch	Total			Self	Total										Upper end	Lower end	Upper end	Lower end		Upper end	Lower end	
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
41	K3-K2	11		11	149	23.132			11.000	34.132	0.03	200	2.50	0.44	80	1/225	0.36	220.66	220.66	219.46	219.10		1.20	1.56	1.38
42	K2-K4	5	24	29	392	60.858			14.000	74.858	0.07	200	2.50	0.44	60	1/225	0.27	220.66	220.65	219.01	218.74		1.65	1.91	1.78
43	K5-K4	16		16	216	33.534				33.534	0.03	200	2.50	0.44	90	1/225	0.40	220.66	220.65	219.46	219.06		1.20	1.59	1.40
44	K4-K6	4	45	49	662	102.776			14.000	116.776	0.11	200	2.50	0.44	50	1/225	0.22	220.65	220.65	218.74	218.52		1.91	2.13	2.02
45	K7-K6	14		14	189	29.342				29.342	0.03	200	2.50	0.44	90	1/225	0.40	220.65	220.65	219.45	219.05		1.20	1.60	1.40
46	K6-K8	5	63	68	918	142.520			14.000	156.520	0.14	200	2.50	0.44	70	1/225	0.31	220.65	220.66	218.52	218.21		2.13	2.45	2.29
47	K9-K8	9		9	122	18.941				18.941	0.02	200	2.50	0.44	90	1/225	0.40	220.40	220.66	219.20	218.80		1.20	1.86	1.53
48	K8-K10	2	77	79	1067	165.652			14.000	179.652	0.16	200	2.50	0.44	70	1/225	0.31	220.66	220.38	217.21	216.90		3.45	3.48	3.46
49	K11-K10	9		9	122	18.941			9.000	27.941	0.03	200	2.50	0.44	90	1/225	0.40	220.50	220.38	219.30	218.90		1.20	1.48	1.34
50	K10-K12		88	88	1188	184.437		20.000	23.000	227.437	0.21	200	2.50	0.44	60	1/225	0.27	220.38	220.70	217.90	217.63		2.48	3.07	2.77
51	K13-K12	9		9	122	18.941	50.000	70.000	4.000	92.941	0.09	200	2.50	0.44	180	1/225	0.80	220.50	220.70	219.30	218.50		1.20	2.20	1.70
52	K12-Z		97	97	1310	203.378		70.000	27.000	300.378	0.28	200	2.50	0.44	60	1/225	0.27	220.70	220.70	217.63	217.36	216.50	3.07	3.34	3.21
53	L-M	22		22	297	46.109				46.109	0.04	200	2.50	0.44	170	1/225	0.76	220.68	220.76	219.48	218.72		1.20	2.04	1.62
54	M1-M	16		16	216	33.534				33.534	0.03	200	2.50	0.44	100	1/225	0.44	220.68	220.76	219.48	219.04		1.20	1.72	1.46
55	M-N	5	38	43	581	90.200				90.200	0.08	200	2.50	0.44	40	1/225	0.18	220.76	220.78	218.72	218.54		2.04	2.24	2.14
56	N1-N2	20		20	270	41.918				41.918	0.04	200	2.50	0.44	150	1/225	0.67	220.90	220.88	219.70	219.03		1.20	1.85	1.53
57	N3-N2	6		6	81	12.575				12.575	0.01	200	2.50	0.44	40	1/225	0.18	220.88	220.88	219.68	219.50		1.20	1.38	1.29
58	N2-N4	7	26	33	446	69.242				69.242	0.06	200	2.50	0.44	80	1/225	0.36	220.88	220.88	219.03	218.67		1.85	2.21	2.03
59	N5-N4	13		13	176	27.324				27.324	0.02	200	2.50	0.44	160	1/225	0.71	220.90	220.81	219.70	218.99		1.20	1.82	1.51
60	N4-N	6	46	52	702	108.986				108.986	0.10	200	2.50	0.44	50	1/225	0.22	220.81	220.78	218.67	218.45		2.14	2.33	2.24
61	N-O	3	95	98	1323	205.396				205.396	0.19	200	2.50	0.44	60	1/225	0.27	220.78	220.78	218.45	218.18		2.33	2.60	2.47

Sr. No.	Name of Sewer line	No. of plots to be served			Population @ 13.5 persons per plot	Discharge @ 155.25 litre/H/day in KL	Discharge of community building (in KL)		Discharge in Un-determine area in KL	Total discharge in KL	Peak discharge in cusec @ 75% of 3 times DWF	Proposed size of sewer line	Velocity in ft./sec.	Design discharge	Length in Mtr.	Gradient	Fall	Ground level		Invert level			Depth		Average depth
		Self	Branch	Total			Self	Total										Upper end	Lower end	Upper end	Lower end		Upper end	Lower end	
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
62	O1-O	14		14	189	29.342				29.342	0.03	200	2.50	0.44	140	1/225	0.62	220.68	220.78	219.48	218.86		1.20	1.92	1.56
63	O-P	2	112	114	1539	238.930				238.930	0.22	200	2.50	0.44	60	1/225	0.27	220.78	220.78	218.18	217.91		2.60	2.87	2.74
64	P1-P2	24		24	324	50.301				50.301	0.28	200	2.50	0.44	160	1/225	0.71	220.70	220.68	219.50	218.79		1.20	1.89	1.55
65	P2-P	14	24	38	513	79.643				79.643	0.07	200	2.50	0.44	150	1/225	0.67	220.68	220.78	218.79	218.12	217.91	1.89	2.66	2.28
66	P-Q	4	152	156	2106	326.957				326.957	0.30	200	2.50	0.44	60	1/225	0.27	220.76	220.78	217.91	217.64		2.85	3.14	3.00
67	Q1-Q	19		19	257	39.899				39.899	0.04	200	2.50	0.44	140	1/225	0.62	220.78	220.78	219.58	218.96		1.20	1.82	1.51
68	Q-R	5	175	180	2430	377.258				377.258	0.34	200	2.50	0.44	50	1/225	0.22	220.78	220.72	217.64	217.42	217.37	3.14	3.30	3.22
69	R1-R	35		35	473	73.433	210.000	210.000	5.000	288.433	0.26	200	2.50	0.44	225	1/225	1.00	220.78	220.72	219.08	218.08	217.37	1.70	2.64	2.17
70	R-S	6	215	221	2984	463.266		210.000	5.000	678.266	0.62	300	2.50	0.98	60	1/385	0.16	220.72	220.72	217.37	217.21		3.35	3.51	3.43
71	S1-S	6		6	81	12.575				12.575	0.01	200	2.50	0.44	40	1/225	0.18	220.72	220.72	219.52	219.34		1.20	1.38	1.29
72	S-Y	5	227	232	3132	486.243		210.000	5.000	701.243	0.64	300	2.50	0.98	50	1/385	0.13	220.72	220.72	217.21	217.08	217.03	3.51	3.64	3.57
73	Y-Z		448	448	6048	938.952	100.000	470.000	23.000	1431.952	1.31	400	2.50	1.74	300	1/570	0.53	220.72	220.72	217.03	216.50		3.69	4.22	3.96
74	Z-Z1		545	545	7358	1142.330		540.000	45.000	1727.330	1.58	400	2.50	1.74	110	1/570	0.19	220.72	220.38	216.50	216.31	215.55	4.22	4.07	4.15
75	T-U	46		46	621	96.410				96.410	0.09	200	2.50	0.44	220	1/225	0.98	220.70	220.68	219.50	218.52		1.20	2.16	1.68
76	U1-U2		5	5	68	10.557				10.557	0.01	200	2.50	0.44	60	1/225	0.27	220.70	220.70	219.50	219.23		1.20	1.47	1.33
77	U3-U2	10		10	135	20.959				20.959	0.02	200	2.50	0.44	30	1/225	0.13	220.70	220.70	219.50	219.37		1.20	1.33	1.26
78	U2-U	8	15	23	311	48.283				48.283	0.04	200	2.50	0.44	90	1/225	0.40	220.70	220.68	219.23	218.83	218.52	1.47	1.85	1.66
79	U-V		69	69	932	144.693				144.693	0.13	200	2.50	0.44	20	1/225	0.09	220.68	220.68	218.52	218.43		2.16	2.25	2.21
80	V1-V	40		40	540	83.835				83.835	0.08	200	2.50	0.44	80	1/225	0.36	220.68	220.68	219.48	219.12		1.20	1.56	1.38
81	V-W		109	109	1472	228.528				228.528	0.20	200	2.50	0.44	40	1/225	0.18	220.68	220.68	218.43	218.25		2.25	2.43	2.34
82	W1-W	40		40	540	83.835				83.835	0.08	200	2.50	0.44	100	1/225	0.44	220.68	220.68	219.48	219.04		1.20	1.64	1.42

Sr. No.	Name of Sewer line	No. of plots to be served			Population @ 13.5 persons per plot	Discharge @ 155.25 litre/H/day in KL	Discharge of community building (in KL)		Discharge in Un-determine area in KL	Total discharge in KL	Peak discharge in cusec @ 75% of 3 times DWF	Proposed size of sewer line	Velocity in ft./sec.	Design discharge	Length in Mtr.	Gradient	Fall	Ground level		Invert level			Depth		Average depth
		Self	Branch	Total			Self	Total										Upper end	Lower end	Upper end	Lower end		Upper end	Lower end	
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
83	W2-W	15		15	203	31.516	60.000	60.000		91.516	0.08	200	2.50	0.44	80	1/225	0.36	220.70	220.68	219.50	219.14		1.20	1.54	1.37
84	W-X		169	169	2282	354.281		60.000		414.281	0.38	200	2.50	0.44	30	1/225	0.13	220.68	220.70	218.25	218.12	218.07	2.43	2.58	2.51
85	X1-X2	26		26	351	54.493			18.000	72.493	0.07	200	2.50	0.44	180	1/225	0.80	220.70	220.68	219.50	218.70		1.20	1.98	1.59
86	X2-X	23	26	49	662	102.776			18.000	120.776	0.11	200	2.50	0.44	100	1/225	0.44	220.68	220.70	218.70	218.26	218.07	1.98	2.44	2.21
87	X-Y	3	213	216	2916	452.709	100.000	160.000	18.000	630.709	0.58	300	2.50	0.98	220	1/385	0.57	220.70	220.72	218.07	217.50	217.03	2.63	3.22	2.93

PARASVNATH CITY ROHTAK

DESIGN OF RCC PIPE STORM WATER DRAIN

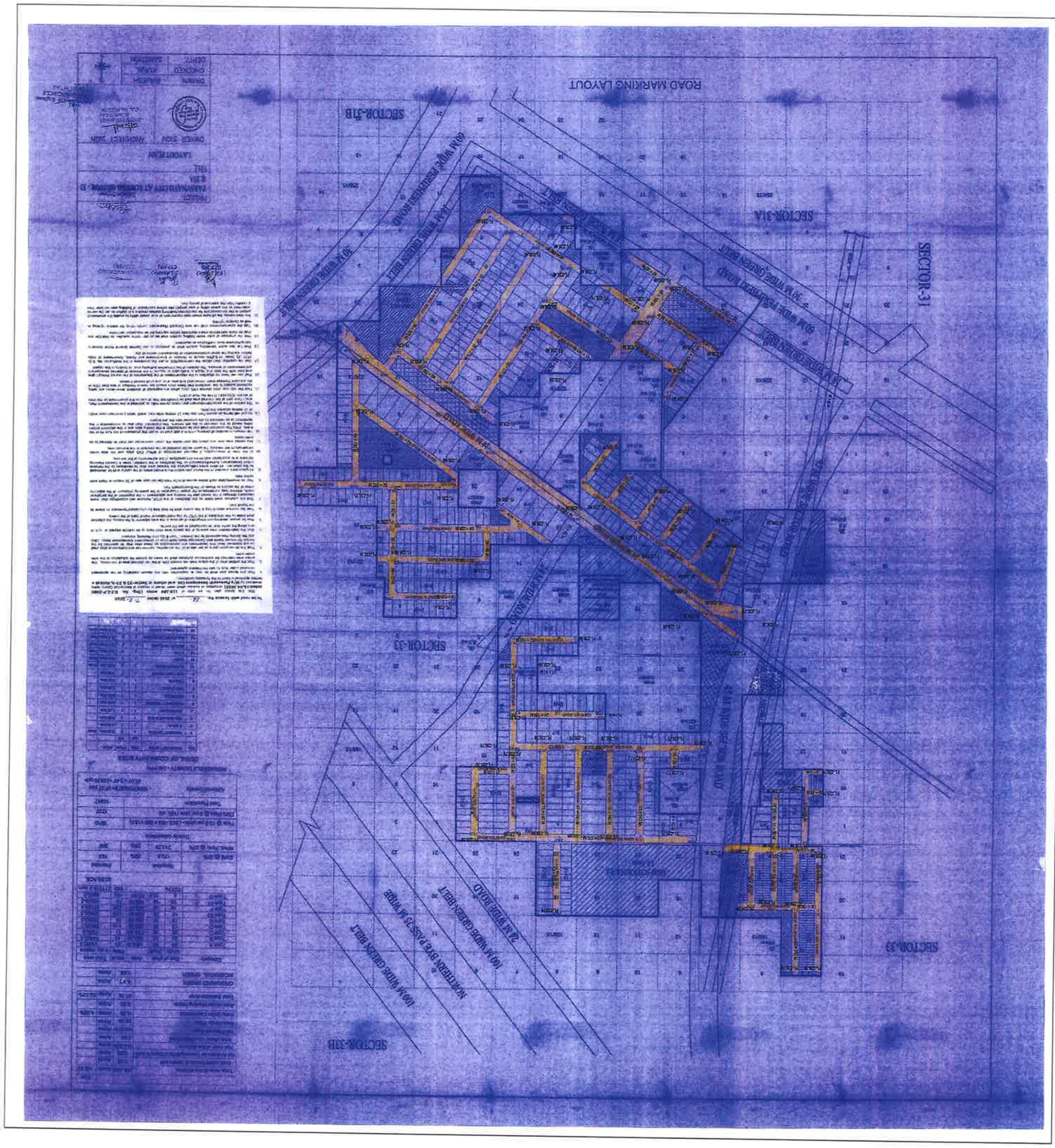
S. No.	Name of Drain	Area to be served (in Acres)			Discharge IN CUSEC @ 1/4" Rain fall in cusec	Proposed size of drain in mm	Design Velocity in fit. Per second	Design discharge in cusec	Length of drain in Mtr.	Gradient	Fall	Ground level		Invert level			Depth		Average
		Self	Branch	Total								Upper end	Lower end	Upper end	Lower end		Upper end	Lower end	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		17	18	19
1	A-B	1.60		1.60	0.40	400	2.50	3.48	225	1/570	0.40	220.70	220.65	219.30	218.90		1.40	1.75	1.57
2	B1-B2	0.40		0.40	0.10	400	2.50	3.48	60	1/570	0.11	220.70	220.70	219.30	219.19	219.14	1.40	1.51	1.45
3	B3-B2	0.50		0.50	0.13	400	2.50	3.48	30	1/570	0.05	220.70	220.70	219.19	219.14		1.51	1.56	1.54
4	B2-B	1.20	0.90	2.10	0.53	400	2.50	3.48	90	1/570	0.16	220.70	220.65	219.14	218.98	218.90	1.56	1.67	1.62
5	B-C	0.10	3.70	3.80	0.96	400	2.50	3.48	20	1/570	0.04	220.65	220.65	218.90	218.86		1.75	1.79	1.77
6	C1-C	2.00		2.00	0.50	400	2.50	3.48	200	1/570	0.35	220.70	220.65	219.30	218.95	218.86	1.40	1.70	1.55
7	C-D	0.20	5.80	6.00	1.51	400	2.50	3.48	30	1/570	0.05	220.65	220.65	218.86	218.81		1.79	1.84	1.82
8	D1-D2	0.25		0.25	0.06	400	2.50	3.48	40	1/570	0.07	220.70	220.68	219.30	219.23		1.40	1.45	1.42
9	D3-D2	0.15		0.15	0.04	400	2.50	3.48	20	1/570	0.04	220.68	220.68	219.28	219.24	219.23	1.40	1.44	1.42
10	D2-D	0.90	0.40	1.30	0.33	400	2.50	3.48	90	1/570	0.16	220.68	220.65	219.23	219.07	218.81	1.45	1.58	1.52
11	D-E	0.10	7.30	7.40	1.86	400	2.50	3.48	20	1/570	0.04	220.65	220.65	218.81	218.77		1.84	1.88	1.86
12	E1-E	1.40		1.40	0.35	400	2.50	3.48	80	1/570	0.14	220.70	220.60	219.30	219.16	218.77	1.40	1.44	1.42
13	E-F	0.20	8.80	9.00	2.27	400	2.50	3.48	40	1/570	0.07	220.65	220.60	218.77	218.70		1.88	1.90	1.89
14	F1-F	1.70		1.70	0.43	400	2.50	3.48	110	1/570	0.19	220.70	220.60	219.30	219.11	218.70	1.40	1.49	1.44
15	F-MAIN DRAIN	0.15	10.70	10.85	2.73	500	2.50	5.47	60	1/760	0.08	220.60	220.50	218.70	218.62		1.90	1.88	1.89
16	G-H	2.20		2.20	0.55	400	2.50	3.48	200	1/570	0.35	220.70	220.80	219.30	218.95		1.40	1.85	1.62
17	H1-H	2.80		2.80	0.71	400	2.50	3.48	110	1/570	0.19	220.70	220.80	219.30	219.11	218.95	1.40	1.69	1.54
18	H-J	0.20	5.00	5.20	1.31	400	2.50	3.48	70	1/570	0.12	220.80	220.78	218.95	218.83		1.85	1.95	1.90
19	J1-J	1.35		1.35	0.34	400	2.50	3.48	120	1/570	0.21	220.70	220.78	219.30	219.09	218.83	1.40	1.69	1.54
20	J-K	6.00	6.55	12.55	3.16	500	2.50	5.47	200	1/760	0.26	220.78	220.60	218.83	218.57		1.95	2.03	1.99

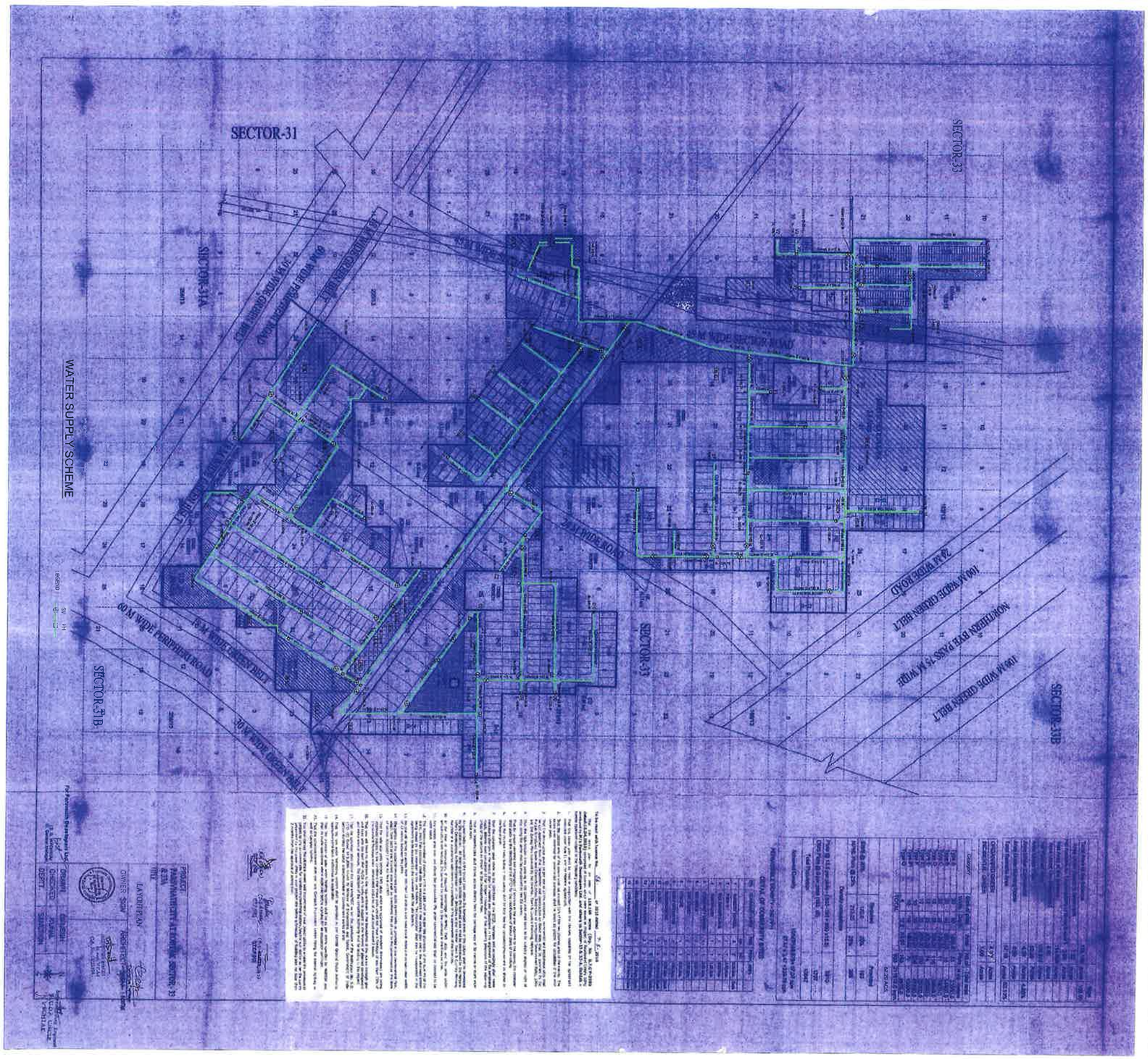
S. No.	Name of Drain	Area to be served (in Acres)			Discharge IN CUSEC @ 1/4" Rain fall in cusec	Proposed size of drain in mm	Design Velocity in fit. Per second	Design discharge in cusec	Length of drain in Mtr.	Gradient	Fall	Ground level		Invert level			Depth		Average
		Self	Branch	Total								Upper end	Lower end	Upper end	Lower end		Upper end	Lower end	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		17	18	19
21	K1-K	0.50		0.50	0.13	400	2.50	3.48	40	1/570	0.07	220.60	220.60	219.20	219.13	218.57	1.40	1.47	1.44
22	K-MAIN DRAIN	0.40	13.05	13.45	3.39	500	2.50	5.47	50	1/760	0.07	220.60	220.50	218.57	218.50		2.03	2.00	2.02
23	L1-L	2.20		2.20	0.55	400	2.50	3.48	160	1/570	0.28	220.90	220.88	219.50	219.22		1.40	1.66	1.53
24	L2-L	0.50		0.50	0.13	400	2.50	3.48	40	1/570	0.07	220.88	220.88	219.48	219.41	219.22	1.40	1.47	1.44
25	L-M	0.70	2.70	3.40	0.86	400	2.50	3.48	70	1/570	0.12	220.88	220.85	219.22	219.10		1.66	1.75	1.71
26	M1-M	1.65		1.65	0.42	400	2.50	3.48	110	1/570	0.19	220.90	220.75	219.50	219.31	219.10	1.40	1.44	1.42
27	M-N	0.90	5.05	5.95	1.50	400	2.50	3.48	80	1/570	0.14	220.75	220.78	219.10	218.96		1.65	1.82	1.74
28	N1-N	2.80		2.80	0.71	400	2.50	3.48	140	1/570	0.25	220.80	220.78	219.40	219.15	218.96	1.40	1.63	1.52
29	N-O	0.50	8.75	9.25	2.33	400	2.50	3.48	60	1/570	0.11	220.80	220.76	218.96	218.85		1.84	1.91	1.88
30	O1-O	2.80		2.80	0.71	400	2.50	3.48	140	1/570	0.25	220.78	220.76	219.38	219.13	218.85	1.40	1.63	1.52
31	O-P	0.45	12.05	12.50	3.15	500	2.50	5.47	60	1/760	0.08	220.76	220.76	218.85	218.77		1.91	1.99	1.95
32	P1-P	1.70		1.70	0.43	400	2.50	3.48	140	1/570	0.25	220.78	220.76	219.38	219.13	218.77	1.40	1.63	1.52
33	P-Q	0.25	14.20	14.45	3.64	500	2.50	5.47	50	1/760	0.07	220.76	220.72	218.77	218.70		1.99	2.02	2.00
34	Q1-Q	1.70		1.70	0.43	400	2.50	3.48	140	1/570	0.25	220.75	220.72	219.35	219.10	218.70	1.40	1.62	1.51
35	Q-R	0.50	16.15	16.65	4.20	500	2.50	5.47	60	1/760	0.08	220.72	220.72	218.70	218.62		2.02	2.10	2.06
36	R1-R	0.20		0.20	0.05	400	2.50	3.48	40	1/570	0.07	220.72	220.72	219.32	219.25	218.62	1.40	1.47	1.44
37	R-S	0.50	16.85	17.35	4.37	500	2.50	5.47	70	1/760	0.09	220.72	220.70	218.62	218.53		2.10	2.17	2.13
38	S1-S	0.20		0.20	0.05	400	2.50	3.48	40	1/570	0.07	220.70	220.70	219.30	219.23	218.53	1.40	1.47	1.43
39	S-DRAIN		17.55	17.55	4.42	500	2.50	5.47	20	1/760	0.03	220.70	220.70	218.53	218.50		2.17	2.20	2.18
40	T1-T	2.00		2.00	0.50	400	2.50	3.48	160	1/570	0.28	220.45	220.38	219.05	218.77		1.40	1.61	1.50
41	T2-T	2.85		2.85	0.72	400	2.50	3.48	150	1/570	0.26	220.49	220.38	219.09	218.83	218.77	1.40	1.55	1.47
42	T3-T	0.20		0.20	0.05	400	2.50	3.48	20	1/570	0.04	220.38	220.38	218.98	218.94	218.77	1.40	1.44	1.42

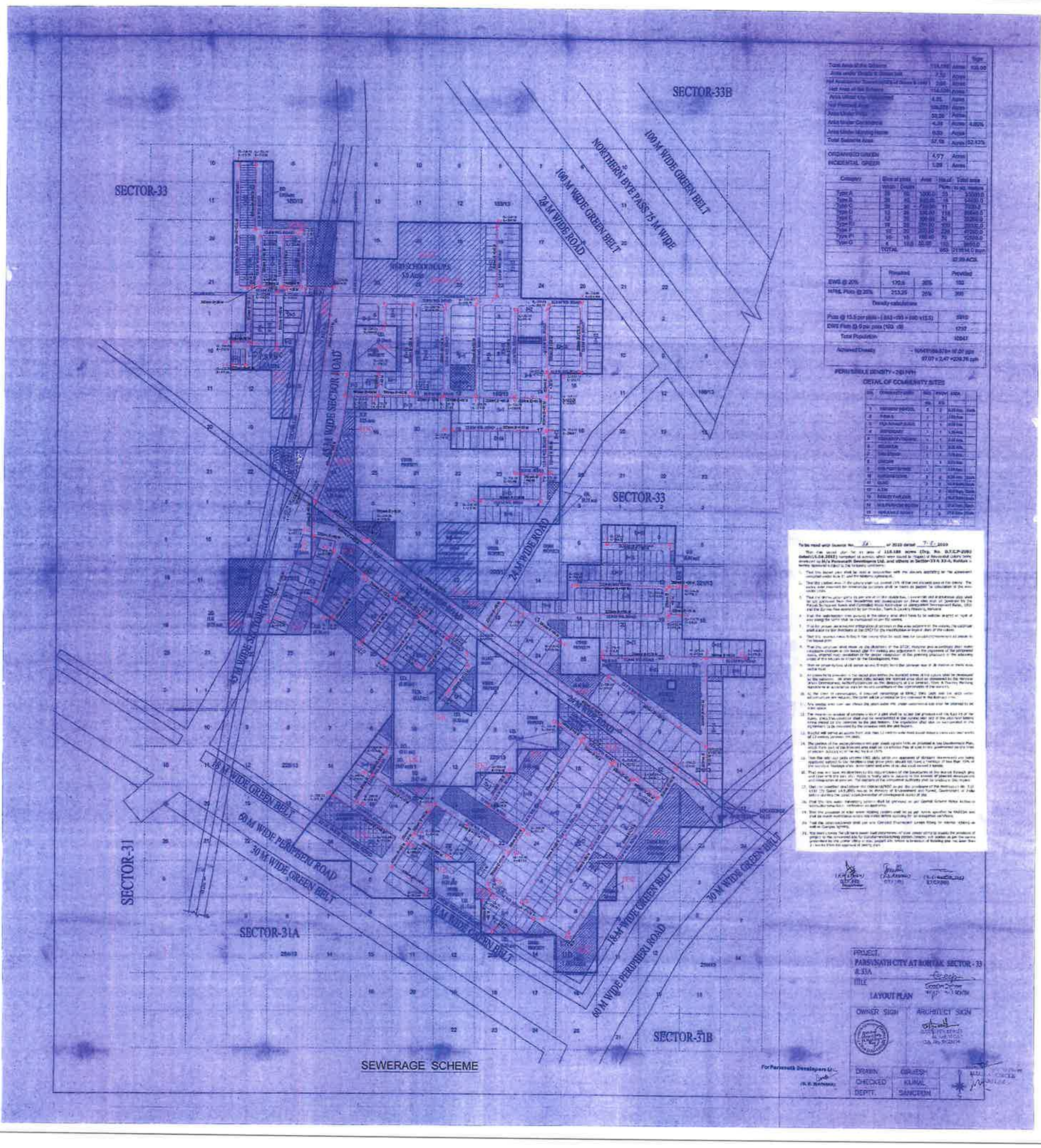
S. No.	Name of Drain	Area to be served (in Acres)			Discharge IN CUSEC @ 1/4" Rain fall in cusec	Proposed size of drain in mm	Design Velocity in fit. Per second	Design discharge in cusec	Length of drain in Mtr.	Gradient	Fall	Ground level		Invert level			Depth		Average
		Self	Branch	Total								Upper end	Lower end	Upper end	Lower end		Upper end	Lower end	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		17	18	19
43	T-U	0.15	5.05	5.20	1.31	400	2.50	3.48	50	1/570	0.09	220.38	220.36	218.77	218.68	218.50	1.61	1.68	1.65
44	U1-U2	0.70		0.70	0.18	400	2.50	12.33	60	1/570	0.11	220.40	220.38	219.00	218.89		1.40	1.49	1.45
45	U3-U2	0.70		0.70	0.18	400	2.50	3.48	40	1/570	0.07	220.40	220.38	219.00	218.93	218.89	1.40	1.45	1.43
46	U2-U	3.50	1.40	4.90	1.23	400	2.50	3.48	220	1/570	0.39	220.38	220.36	218.89	218.50		1.49	1.86	1.68
47	U4-U	0.20		0.20	0.05	400	2.50	3.48	20	1/570	0.04	220.36	220.36	218.96	218.92	218.50	1.40	1.44	1.42
48	U-V	0.20	10.30	10.50	2.65	500	2.50	5.47	70	1/760	0.10	220.36	220.35	218.50	218.40		1.86	1.95	1.91
49	V1-V	2.00		2.00	0.50	400	2.50	3.48	80	1/570	0.14	220.40	220.35	219.40	219.26	218.40	1.00	1.09	1.04
50	V-W	0.75	12.50	13.25	3.34	500	2.50	5.47	50	1/760	0.07	220.35	220.35	218.40	218.33		1.95	2.02	1.98
51	W1-W	1.50		1.50	0.38	400	2.50	3.48	90	1/570	0.16	220.40	220.35	219.00	218.84	218.33	1.40	1.51	1.46
52	W-X	2.00	14.75	16.75	4.22	500	2.50	5.47	110	1/760	0.14	220.35	220.33	218.33	218.19		2.02	2.14	2.08
53	X1-X	4.40		4.40	1.11	400	2.50	3.48	170	1/570	0.30	220.40	220.33	219.00	218.70	218.19	1.40	1.63	1.52
54	X-j	0.90	21.15	22.05	5.56	500	2.70	5.86	150	1/660	0.23	220.35	220.33	218.19	217.96		2.16	2.37	2.27
55	a-b	1.20		1.20	0.30	400	2.50	3.48	110	1/570	0.19	220.69	220.68	219.29	219.10		1.40	1.58	1.49
56	b1-b	1.00		1.00	0.25	400	2.50	3.48	60	1/570	0.11	220.69	220.68	219.29	219.18	219.10	1.40	1.50	1.45
57	b-c	0.20	2.20	2.40	0.60	400	2.50	3.48	60	1/570	0.11	220.68	220.68	219.10	218.99		1.58	1.69	1.64
58	c1-c	1.00		1.00	0.25	400	2.50	3.48	80	1/570	0.14	220.69	220.68	219.29	219.15	218.99	1.40	1.53	1.47
59	c-d	0.15	3.40	3.55	0.89	400	2.50	3.48	50	1/570	0.09	220.68	220.68	218.99	218.90		1.69	1.78	1.74
60	d1-d	1.00		1.00	0.25	400	2.50	3.48	80	1/570	0.14	220.69	220.68	219.29	219.15	218.90	1.40	1.53	1.47
61	d-e	0.20	4.55	4.75	1.20	400	2.50	3.48	65	1/570	0.11	220.68	220.70	218.90	218.79		1.78	1.91	1.85
62	e1-e	1.00		1.00	0.25	400	2.50	3.48	80	1/570	0.14	220.70	220.70	219.30	219.16	218.79	1.40	1.54	1.47
63	e-f	0.20	5.75	5.95	1.50	400	2.50	3.48	60	1/570	0.11	220.70	220.70	218.79	218.68		1.91	2.02	1.96
64	f1-f	1.25		1.25	0.32	400	2.50	3.48	80	1/570	0.14	220.70	220.70	219.30	219.16	218.68	1.40	1.54	1.47

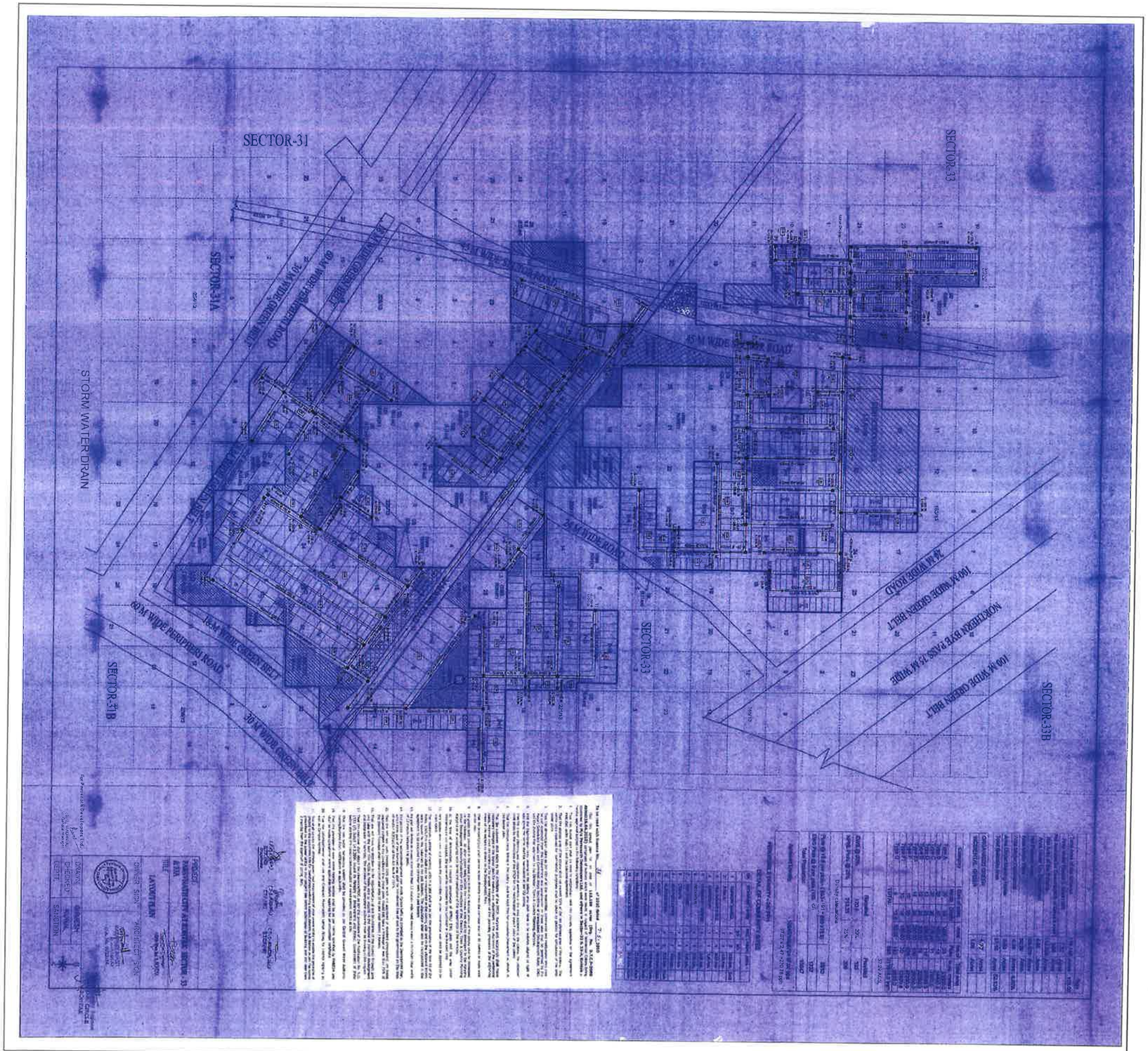
S. No.	Name of Drain	Area to be served (in Acres)			Discharge IN CUSEC @ 1/4" Rain fall in cusec	Proposed size of drain in mm	Design Velocity in fit. Per second	Design discharge in cusec	Length of drain in Mtr.	Gradient	Fall	Ground level		Invert level			Depth		Average
		Self	Branch	Total								Upper end	Lower end	Upper end	Lower end		Upper end	Lower end	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		17	18	19
65	f-k1	0.25	7.20	7.45	1.88	400	2.50	3.48	50	1/570	0.09	220.70	220.52	218.68	218.79	218.59	2.02	1.73	1.88
66	k3-k	2.40		2.40	0.60	400	2.50	3.48	180	1/570	0.32	220.50	220.38	219.10	218.78		1.40	1.60	1.50
67	g1-g2	1.20		1.20	0.30	400	2.50	3.48	130	1/570	0.23	220.66	220.40	219.26	219.03	218.86	1.40	1.37	1.39
68	g3-g2	0.50		0.50	0.13	400	2.50	3.48	80	1/570	0.14	220.40	220.40	219.00	218.86		1.40	1.54	1.47
69	g2-g4	0.15	1.70	1.85	0.47	400	2.50	3.48	30	1/570	0.05	220.40	220.40	218.86	218.81	218.80	1.54	1.59	1.57
70	g5-g6	1.30		1.30	0.33	400	2.50	3.48	50	1/570	0.09	220.40	220.40	219.00	218.91		1.40	1.49	1.45
71	g7-g6	1.10		1.10	0.28	400	2.50	3.48	40	1/570	0.07	220.66	220.40	219.26	219.19	218.91	1.40	1.21	1.31
72	g6-g4	0.40	2.40	2.80	0.71	400	2.50	3.48	60	1/570	0.11	220.40	220.40	218.91	218.80		1.49	1.60	1.55
73	g4-g8	1.70	4.65	6.35	1.60	400	2.50	3.48	180	1/570	0.32	220.40	220.36	218.80	218.48		1.60	1.88	1.74
74	g9-g8	0.15		0.15	0.04	400	2.50	3.48	40	1/570	0.07	220.36	220.36	218.96	218.89	218.48	1.40	1.47	1.44
75	g8-g10	0.20	6.50	6.70	1.69	400	2.50	3.48	60	1/570	0.11	220.36	220.36	218.89	218.78	218.44	1.47	1.58	1.53
76	g11-g10	6.90		6.90	1.74	400	2.50	3.48	320	1/570	0.56	220.40	220.36	219.00	218.44		1.40	1.92	1.66
77	g10-g12	0.20	13.60	13.80	3.48	500	2.50	5.47	100	1/760	0.13	220.36	220.33	218.44	218.31		1.92	2.02	1.97
78	g13-g12	4.45		4.45	1.12	400	2.50	3.48	320	1/570	0.56	220.40	220.33	219.00	218.44	218.31	1.40	1.89	1.65
79	g12-g14	0.10	18.25	18.35	4.62	500	2.50	5.47	50	1/760	0.07	220.33	220.33	218.44	218.37		1.89	1.96	1.93
80	g15-g14	6.20		6.20	1.56	400	2.50	3.48	260	1/570	0.46	220.40	220.33	219.00	218.54	218.37	1.40	1.79	1.60
81	g14-j	0.10	24.55	24.65	6.21	500	2.50	5.47	40	1/760	0.05	220.33	220.30	218.37	218.32	217.96	1.96	1.98	1.97
82	j-k1	6.75	9.85	16.60	4.18	600	2.50	7.88	1330	1/970	1.37	220.38	220.30	217.96	216.59		2.42	3.71	3.07
83	k1-k	0.40	41.25	41.65	10.50	600	3.37	10.53	50	1/540	0.09	220.30	220.30	216.59	216.50		3.71	3.80	3.76
84	k-main drain	0.50	63.70	64.20	16.18	600	5.15	16.18	50	1/230	0.22	220.30	220.30	216.50	216.28		3.80	4.02	3.91
85	l3-l2	1.20		1.20	0.30	400	2.50	3.48	50	1/570	0.12	220.68	220.63	219.28	219.16	219.14	1.40	1.47	1.44
86	l1-l2	6.80		6.80	1.71	400	2.50	3.48	100	1/570	0.09	220.63	220.63	219.23	219.14		1.40	1.49	1.45

S. No.	Name of Drain	Area to be served (in Acres)			Discharge IN CUSEC @ 1/4" Rain fall in cusec	Proposed size of drain in mm	Design Velocity in fit. Per second	Design discharge in cusec	Length of drain in Mtr.	Gradient	Fall	Ground level		Invert level			Depth		Average
		Self	Branch	Total								Upper end	Lower end	Upper end	Lower end		Upper end	Lower end	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		17	18	19
87	I2-I	0.30	8.00	8.30	2.09	400	2.50	3.48	50	1/570	0.09	220.63	220.68	219.14	219.05		1.49	1.63	1.56
88	I4-I	1.00		1.00	0.25	400	2.50	3.48	80	1/570	0.14	220.66	220.68	219.26	219.12	219.05	1.40	1.56	1.48
89	I-m	0.10	9.30	9.40	2.37	400	2.50	3.48	20	1/570	0.04	220.68	220.68	219.05	219.01		1.63	1.67	1.65
90	m1-m2	1.50		1.50	0.38	400	2.50	3.48	110	1/570	0.19	220.68	220.65	219.28	219.09		1.40	1.56	1.48
91	m3-m2	0.20		0.20	0.05	400	2.50	3.48	50	1/570	0.09	220.65	220.65	219.25	219.16	219.09	1.40	1.49	1.45
92	m2-m	0.80	1.70	2.50	0.63	400	2.50	3.48	100	1/570	0.18	220.65	220.68	219.09	218.91		1.56	1.77	1.67
93	m-n	0.30	11.90	12.20	3.07	400	2.50	3.48	50	1/570	0.09	220.68	220.69	218.91	218.82		1.77	1.87	1.82
94	n1-n	2.70		2.70	0.68	400	2.50	3.48	110	1/570	0.35	220.60	220.69	219.20	218.85	218.82	1.40	1.84	1.62
95	n2-n	1.70		1.70	0.43	400	2.50	3.48	130	1/570	0.23	220.70	220.69	219.30	219.07	218.82	1.40	1.62	1.51
96	n-main drain		16.70	16.70	4.21	500	2.50	5.47	50	1/760	0.05	220.69	220.63	218.82	218.77		1.87	1.86	1.87


ROAD MARKING LAYOUT
SECTOR-31B
SECTOR-31A
SECTOR-31
SECTOR-33
SECTOR-33B
SECTOR-33
60 M WIDE PEDESTRIAN ROAD
30 M WIDE GREEN BELT
24 M WIDE ROAD
100 M WIDE GREEN BELT
NORTHERN BYE PASS-75 M WIDE


SECTOR-31
SECTOR-31A
SECTOR-33
SECTOR-33B
SECTOR-31B
WATER SUPPLY SCHEME
60 M WIDE PERIPHERAL ROAD
45 M WIDE GREEN BELT
30 M WIDE GREEN BELT
24 M WIDE ROAD
100 M WIDE GREEN BELT
NORTHERN BYE PASS 75 M WIDE
LAYOUT PLAN


SECTOR-33B
SECTOR-33
SECTOR-31
SECTOR-31A
SECTOR-31B
100 M WIDE GREEN BELT
NORTHERN BYE PASS 75 M WIDE
100 M WIDE GREEN BELT
24 M WIDE ROAD
45 M WIDE SECTOR ROAD
18 M WIDE GREEN BELT
60 M WIDE PERIPHERI ROAD
30 M WIDE GREEN BELT
PERMISSIBLE DENSITY - 240 PPH
DETAIL OF COMMUNITY SITES
PROJECT
PARSVNATH CITY AT ROHTAK SECTOR - 33 & 33A
TITLE
LAYOUT PLAN
OWNER SIGN
ARCHITECT SIGN
DRAWN
CHECKED
DEPTT.
GIRISH
KUNAL
SANCTION
For Parsvnath Developers Ltd.
SEWERAGE SCHEME


SECTOR-31
SECTOR-33
SECTOR-31A
SECTOR-31B
SECTOR-33B
STORM WATER DRAIN
45 M WIDE ROAD
24 M WIDE ROAD
30 M WIDE GREEN BELT
60 M WIDE PERIPHERAL ROAD
100 M WIDE GREEN BELT
NORTHERN BYE PASS 75 M WIDE