ANNEXURE-1 (1)

From

Director
Town & Country Planning,
Haryana Chandigarh.

To

M/s. Parsvnath Developers Ltd.
6th Floor, Arunanchal Building,
19, Barakhamba Road,
New Delhi – 110001

Memo No.ZP-259-JE (B)-2009/ 1606 Dated: 23-4-09

Subject: **Approval of Service Estimates of Residential Plotted Colony to be developed on 162.48 acres land in sector 38 & 39, Panipat.**

Please refer your application on above cited subject.

In this respect, it is to inform you that as per report/comments of Chief Administrator, HUDA, Panchkula on the service plan/estimates mentioned above, you are required to furnish an additional bank guarantee amounting Rs. 267.315 lac on account of internal development works in respect of above said colony being developed by you. You are therefore advised to furnish an additional bank guarantee of Rs.267.315 lac on account of internal development works in favour of Director, Town & Country Planning, Haryana, so that further action in the matter could be taken.

District Town Planner (HQ)
For Director, Town & Country Planning
Haryana, Chandigarh

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(2)

SERVICES PLAN & ESTIMATE
"PARSVNATH PALIWAL CITY"
SECTORS 38 & 39,
PANIPAT
143.86 ACRES
(162.48 acres (-) 18.62 acres GH area)

PARSVNATH DEVELOPERS LTD

REGD. OFFICE 6TH FLOOR, ARUNACHAL BUILDING, 19 BARAKHAMBA ROAD, NEW DELHI 110001

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PROJECT REPORT / ESTIMATES FOR PROVIDING INTERNAL SERVICES, e.g. WATER SUPPLY, SEWERAGE, S.W. DRAINAGE ETC. IN RESPECT OF PARSVNATH PALIWAL CITY, SECTOR – 38, 39, PANIPAT FOR AN AREA OF 143.86 ACRES

(Area 162.48 Acres (-) 18.62 Acres GH area)

Report:-

Parsvnath Paliwal City is a residential colony proposed in Sector – 38, 39 Panipat be developed by M/s Paravnath and its associates companies. The Panipat town is situated on in Delhi – Ambala G.T. Road.

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 22700 Litres (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.

ii) **Design:**

The scheme has been designed for a population of 12515 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,

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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 staging height up to bottom slab stand provided in the scheme. 25 M

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 first will enter in the fire compartment, then overflows to the domestic use compartment 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.

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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. The sewers have been designed on 2.50 ft. per second velocity i.e. self cleansing velocity. Necessary provisions for laying S.W. RCC pipes, 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.

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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 including various P.H. & B & R Services works out to Rs. 1399.50 lacs., which includes 3 % contingency and P.E. charges and 49 % Departmental charges also.

The cost per gross acre works out to Rs. 9.73 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.

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PARSVNATH PALIWAL CITY, SECTOR – 38, 39 PANIPAT
(AREA 143.86 ACRES)

FINAL ABSTRACT OF COST

1.	Sub Work No. 1	Water Supply	Rs.	359.92 lacs.	
2.	Sub Work No. II	Sewerage	Rs.	254.55 lacs.	
3.	Sub Work No. III	Storm Drainage	Rs.	171.31 lacs.	
4.	Sub Work No. IV	Road and Foot –path	Rs.	310.00 lacs.	
5.	Sub Work No. V	Street lighting	Rs.	124.68 lacs.	
6.	Sub Work No. VI	Horticulture	Rs.	178.95	lacs

				Rs. 1399.41 Lacs	

				Say Rs. 1399.50 lacs.	

Cost/Gross Area (in lacs./Acre)
= 1399.50 /143.86 = Rs. 9.73 lacs. / acre

For Parsvnath Developers Ltd.

(B. B. WADHWA)
General Manager

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PARSVNATH PALIWAL CITY, SECTOR – 38, 39 PANIPAT (AREA 143.86 ACRES)

WATER SUPPLY DESIGN CALCULATION

Requirement of Water

a)	No. of Plots (except EWS plot)	741 Nos.
	Population @ 13.50 persons per plot = 741 x 13.50	10004 persons
	EWS Plot :- 286 plots @ 9 persons per plot	2574 persons
		12578 persons
	Daily requirement @ 155.25 (135 + 15 % uncounted W/s) Lit./Head/day = 12578 x 155.25	1952.73 KL
		SAY 1960 KL
b)	Additional Requirement for Community/commercials	
	i) Commercial area 5.754 Acre @ 25 KL/day :- 5.754 x 25	143.85 KL
	ii) High School 150.00 KL	
	iii) Primary School 3 Nos. @ 50KL/day	150.00 KL
	iv) Nursery School 5 Nos. @ 10 KL/day	50.00 KL
	v) Dispensary 1 No. @ 50 KL each.	50.00 KL
	Vi) Creche 1 No. @ 50 KL each.	10.00 KL
		553.85 KL
	Say	554.00 KL
c)	Area under Nursing Home 2 No. @ 25 KL each.	50.00 KL
d)	Area under parks 4.84 Acres @ 25 KL/acre/day	121.00 KL

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e) Area under Roads
Assuming 10 % of area under Roads
i.e. 162.48 x 10/100 = 16.25 Acres

Required @ 5 KL/acre/day = 16.25 x 5 = 81.25 KL

Total requirement per day = a + b + c + d + e
=(1960 + 554 + 50 + 121 + 81.25) = 2766.25 KL
Say 2800 KL

A) Tube wells:-

Total daily requirement	=	2800 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 = 2800 / 16 x 22.7	=	7.71 Nos.
Add 10 % Stand bye	=	0.77 Nos.
		8.48 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	=	15.00 M
Average fall in spring level	=	3.05 M
Depression head	=	6.10 M
Friction loss in main	=	2.50 M
		26.65 M
	Say	30 M

$$BHP = \frac{22700 \times 30 \times 1}{60 \times 60 \times 75 \times 0.60} = 4.20 \text{ BHP}$$ Say 5 BHP

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D) **Overhead Service Reservoir:-**

Daily requirement for domestic use
= A + B + C
(1960 + 554 + 50) = 2564 KL

Say 2600 KL

Taking 6 hours storage = 2600 x 6 /24 = 650 KL

However, it is proposed to provide an OHSR of capacity 500 KL (1,10,000 gallons) and the balance 150 KL capacity have been taken in the capacity of Under Ground Tank.

E) **Underground Tank:-**

Water requirement for domestic use	=	2600 KL/day
Capacity of underground tanks taking 8 hours storage 2600 x 8/24	=	866.67 KL
	Say	870 KL
Balance capacity of OHSR	=	150 KL
For Fire fighting purposes	=	135 KL
		1155 KL
	Say	1200 KL

However, it is proposed to provide Under Ground Tank of capacity 1200KL (2,20,000 gallons) which also includes 135 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 will enters in the Fire compartment, then over flows to the domestic use compartment so that the water in the Fire compartment shall always remain fresh.

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

Daily requirement for Domestic use = 2600 KL

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

Discharge/hour = 2600 / 2 x 8 = 162.50 KL/hour

Say 170 KL/hour

Head of Pump

i) Suction lift = 4 M
ii) Friction loss in Main specials = 4 M
iii) Clear Head = 17 M

25 M Say 40 M

BHP of Motor = $\frac{170000 \times 40}{60 \times 60 \times .75 \times 0.60}$ = 41.97 BHP

Say 50 BHP

G) **Generating Set**

Pump 2 Nos. 50 HP = 100 HP

Tube well = 15 HP

Lighting = 5 HP

120 HP

or 120 x 0.746 = 89.52 KVA

Say 90 KVA

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PARSVNATH PALIWAL CITY, SECTOR – 38, 39 PANIPAT (AREA 143.86 ACRES)

WATER SUPPLY ABSTRACT OF COST

Sub Head No. I	Head Works	Rs.	128.15 lacs.
Sub Head No. II	Pumping Machinery	Rs.	18.95 lacs.
Sub Head No. III	Distribution System	Rs.	87.42 lacs.
	Total	Rs.	234.52 lacs.
	Add 3 % contingencies & P.E. charges	Rs.	7.04 lacs.
		Rs.	241.56 lacs.
	Add 49 % Departmental Charges	Rs.	118.36 lacs.
		Rs.	359.92 lacs.

C.O. to Final Abstract of Cost

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(AREA 143.86 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. 5,00,000.00 each.	Rs. 15.00 lacs.
2.	Construction of pumping chamber as per standard design of PWD/HUDA. Size 4.90 x 4.25 3 Nos. @ 1,25,000/each	Rs. 3.75 lacs.
3.	Construction of boundary wall, gate around the tube-wells site and water works etc. Boosting Station 1 No. @ 200000/each.	Rs. 2.00 lacs.
	Tube wells 3 Nos. @ 80000/each.	Rs. 2.40 lacs.
4.	Provision of Footpaths hedges and lawns as required at tube well site. 3 Nos. @ Rs. 0.50 lac each Tube well	Rs. 1.50 lacs.
	Boosting Station 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 500 KL. 110000 gallons capacity with 25 M staging height.	Rs. 50.00 lacs.
6.	Constructing boosting chambers of suitable size along with under ground tank of capacity 3,00,000 gallons pumping machinery and generating set etc. complete in all respect.	

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	Details of Boosting Station		
	i) Construction of Boosting Chamber	Rs.	6.00 lacs.
	ii) UGT 1200000 litre (264317 gallon) capacity including 135 KL (30,000) gallons for fire fighting in three compartments.	Rs.	45.00 lacs.
7.	Provision for carriage of materials and other unforseen items	Rs.	1.50 lacs.
	Total	Rs.	128.15 lacs.

C.O. to Abstract of Cost Water Supply

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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 22.70 KL water per hour against a total head of 30 M complete with motor and other accessories. 3 Nos. @ Rs. 1,00,000.00 each.	Rs. 3.00 lacs.
2.	Provision for diesel engine for stand bye arrangements for tube wells 1 No. @ Rs. 2,00,000.00 each.	Rs. 2.00 lacs.
3.	Provision for cheap pressure type chlorination plant complete. 3 Nos. @ Rs. 50,000.00 each.	Rs. 1.50 lacs.
4.	Provision for making foundations and erection of Pumping machinery 3 Nos. @ Rs. 25,000.00 each.	Rs. 0.75 lacs.
5.	Provision for pipes, valves and specials inside the pump chamber. 3 Nos. @ Rs. 40,000.00 each.	Rs. 1.20 lacs.
6.	Provision for electric services connection including electric fitting for tube wells chamber complete L.S.	Rs. 1.00 lacs.
7.	Providing and installing centrifugal boosting pumping set, capable of delivering water at 40 M head complete in all respect. 3 Nos. @ Rs. 100000.00	Rs. 3.00 lacs.
7.	Provision for Gen. Set 60 KVA	Rs. 6.00 lacs.
9.	Provision for carriage of material and unforseen item L.S.	Rs. 0.50 lacs.
		Rs. 18.95 lacs.

C.O. to Abstract of Cost Water Supply

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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 6750 M @ Rs. 625.00 per M	42,18,750.00
	150mm i/d 1935 M @ Rs. 810.00 per M	15,67,350.00
	200mm i/d 695 M @ Rs. 1100.00 per M	7,64,500.00
	250mm i/d 465 M @ Rs. 1535.00 per M	7,13,775.00
	300mm i/d 155 M @ Rs. 1950.00 per M	3,02,250.00
	350mm i/d 75 M @ Rs. 2500.00 per M	1,87,500.00
		77,54,125.00
2.	Providing and fixing sluice valves including cost of brick masonry chamber complete in all respect.	
	100mm i/d 15 Nos. @ Rs. 5000.00/each.	75,000.00
	150mm i/d 10 Nos. @ Rs. 7000.00/each.	70,000.00
	200mm i/d 4 Nos. @ Rs. 9000.00/each.	36,000.00
	250mm i/d 3 Nos. @ Rs. 12800.00/each.	38,400.00
	300mm i/d 1 No. @ Rs. 16500.00/each.	16,500.00
	350mm i/d 1 No. @ Rs. 25200.00/each.	25,200.00
		2,61,100.00
3.	Providing and fixing Air Valves and Scour valves including cost of brick masonry chamber complete.	
	5 Nos. @ Rs. 5000.00 each.	25,000.00

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4.	Providing and fixing fire hydrants complete with masonry chambers. 11 Nos. @ Rs. 5000.00 each.	55,000.00
5.	Providing and fixing indicating plates for sluice valves air valves and fire hydrants. 45 Nos. @ Rs. 500.00 each.	22,500.00
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.	1,00,000.00
8.	Provision for rising main from tube wells to UGT 800 RM @ Rs. 1100.00 (200mm dia)	3,24,000.00
		87,41,725.00
		Say 87.42 lacs.

C.O. to Abstract of Cost Water Supply

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PARSVNATH PALIWAL CITY, SECTOR - 38, 39, PANIPAT

MATERIAL STATEMENT WATER SUPPLY SCHEME

Sr. No.	Name of Line	Size wise length in Mtr.					
		100mm	150mm	200mm	250mm	300mm	350mm
1	OHSR-A						75
2	A-B					155	
3	B-C				100		
4	C-D				65		
5	D-E				120		
6	E-F			30			
7	F-G			70			
8	G-G'			20			
9	G'-H			60			
10	H-J			90			
11	J-K			250			
12	K-L			55			
13	L-M		65				
14	M-N		90				
15	N-O		75				
16	O-P		30				
17	P-Q		240				
18	B-R		60				
19	R-S		70				
20	S-S'		20				
21	S'-T	60					
22	T-U	90					

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Sr. No.	Name of Line	Size wise length in Mtr.					
		100mm	150mm	200mm	250mm	300mm	350mm
23	U-J	280					
24	E-V		110				
25	V-W		65				
26	W-X		65				
27	X-Y		40				
28	Y-Z		285				
29	Z-Z'	150					
30	B-B1	230					
31	B1-B2	150					
32	B1-C1	100					
33	C-C1	240					
34	D-D1	265					
35	E-E1	410					
36	G-G1	240					
37	K-K1	100					
38	L-L1	150					
39	M-M1	200					
40	N-E1	290					
41	O-O1	170					
42	P-P1	70					
43	R-F	280					

Sr. No.	Name of Line	Size wise length in Mtr.					
		100mm	150mm	200mm	250mm	300mm	350mm
44	S-G	280					
45	S'-G'	280					
46	T-H	280					
47	V-V1	70					
48	W-W1	70					
49	X-X1	70					
50	Y-D1	120					
51	Z-Z1	25					
52	A-a				160		
53	a-b				20		
54	b-c			20			
55	c-d			30			
56	d-e		30				
57	e-f		30				
58	f-g		140				
59	g-h	255					
60	a-j			70			
61	j-k		95				
62	k-l		230				
63	l-m	130					
64	c-n		55				
65	n-o	35					

Sr. No.	Name of Line	Size wise length in Mtr.					
		100mm	150mm	200mm	250mm	300mm	350mm
66	o-p	70					
67	b-b1	395					
68	b1-b2	50					
69	b2-h	60					
70	d-d1		140				
71	d1-b2	255					
72	d1-d2	30					
73	d2-g	30					
74	e-d2	140					
75	f-f1	20					
76	j-j1	335					
77	j1-l1	65					
78	l-l1	40					
79	n-n1	60					
80	o-o1	30					
81	o1-o2	30					
82	o1-o3	50					
	Total	**6750**	**1935**	**695**	**465**	**155**	**75**

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PARSVNATH PALIWAL CITY, SECTOR – 38, 39 PANIPAT (AREA 143.86 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 5265 M @ Rs. 600.00 per mtr.	Rs.	31,59,000.00
	Avg. depth 2.0 M to 4.0 M 1210 M @ Rs. 700.00 per mtr.	Rs.	8,47,000.00
	ii) 250mm i/d		
	Avg. depth upto 2.0 M 650 M @ Rs. 750.00 per mtr.	Rs.	4,87,500.00
	Avg. depth 2 M to 4 M 90 M @ Rs. 850.00 per mtr.	Rs.	76,500.00
	iii) 300mm i/d		
	Avg. depth 2 M to 4 M 970 M @ Rs. 1000.00 per Mtr.	Rs.	9,70,000.00
	iv) 400mm i/d		
	Avg. depth 2 M to 4 M 320 M @ Rs. 1000.00 per Mtr.	Rs.	3,20,000.00
	Avg. depth 4 M to 6 M 130 M @ Rs. 1100.00 per Mtr.	Rs.	1,43,000.00
	RCC Pipe		
	v) 600mm i/d		
	Avg. depth 4 M to 6 M 310 M @ Rs. 1700.00 per Mtr.	Rs.	5,27,000.00

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		Rs.	65,30,000.00
2.	Provision for providing oblique junction L.S.	Rs.	60,000.00
3.	Provision for temporary timbering etc. L.S.	Rs.	1,50,000.00
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 2000 KLD	Rs.	60,00,000.00
6.	Provision for cutting of roads and carriage for materials etc. and other unforseen charges L.S.	Rs.	1,00,000.00
	Total	Rs.	131,40,000.00
	Add 3 % contingencies and P.E. charges	Rs.	39,42,200.00
		Rs.	170,82,200.00
	Add 49 % departmental charges	Rs.	83,70,278.00
		Rs.	254,52,478.00
		Say Rs.	254.55 lacs.

C.O. to Final Abstract of Cost

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PARSVNATH PALIWAL CITY, SECTOR - 38, 39, PANIPAT

MATERIAL STATEMENT OF SEWERAGE SCHEME

Sr. No.	Name of Sewer line	Length in Mtr.	Average Depth		
			Upto 2 M	2 M to 4 M	4M to 6 M
1	2	3	4	5	6
A) 200mm I/d					
1	A-B	290	290		
2	B-C	140		140	
9	B1-B	240	240		
10	C1-C2	120	120		
11	C2/1-C2	20	20		
12	C2-C3	30	30		
13	C3-C	30	30		
14	C4-C3	120	120		
15	D1-D	370	370		
16	D2-D3	60	60		
17	D3-D4	30	30		
18	D4-D5	30	30		
19	D5-D2	50	50		
20	D6-D3	40	40		
21	D6-D4	80	80		
22	D8-D5	60	60		
23	E1-E2	340	340		
24	E2-E	70		70	

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25

Sr. No.	Name of Sewer line	Length in Mtr.	Average Depth		
			Upto 2 M	2 M to 4 M	4M to 6 M
25	E3-E2	315	315		
26	F1-F2	180	180		
28	H1-H	230	230		
29	H-J	40		40	
30	J-K	70		70	
36	H2-H	60	60		
37	J1-J	160	160		
38	K1-K2	150	150		
39	K2-K3	60		60	
40	K3-K	70		70	
41	K4-K2	150	150		
42	K5-K3	190	190		
43	M1-M2	140	140		
44	M2-M3	260		260	
49	M7-M3	100	100		
50	M8-M4	80	80		
51	M9-M5	80	80		
52	M10-M6	80	80		
53	P-Q	240	240		
59	R1-R	240	240		
60	S1-S	240	240		

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Sr. No.	Name of Sewer line	Length in Mtr.	Average Depth		
			Upto 2 M	2 M to 4 M	4M to 6 M
61	I2-I	240	240		
62	T1-T	240	240		
63	U1-U	240	240		
64	N1-N	250		250	
65	O1-O	250		250	
	Total	**6475**	**5265**	**1210**	**0**
B) 250mm I/d					
3	C-D	40		40	
27	F2-F	420		420	
45	M3-M4	50		50	
46	M4-M5	60		60	
47	M5-M6	80		80	
48	M6-M	90			90
	Total	**740**	**0**	**650**	**90**
C) 300mm I/d					
4	D-E	40		40	
31	K-L	270		270	
32	L-M	400		400	
54	Q-R	80		80	
55	R-S	60		60	
56	S-T	20		20	

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Sr. No.	Name of Sewer line	Length in Mtr.	Average Depth		
			Upto 2 M	2 M to 4 M	4M to 6 M
57	T-U	70		70	
58	U-M	30		30	
	Total	**970**	**0**	**970**	**0**
D) 400mm I/d					
5	E-F	320		320	
6	F-G	40			40
33	M-N	90			90
	Total	**450**	**0**	**320**	**130**
E) 600mm I/d					
7	G-STP	60			60
8	STP-HUDA SEWER	100			100
34	N-O	80			80
35	O-G	70			70
	Total	**310**	**0**	**0**	**310**

PARSVNATH PALIWAL CITY, SECTOR – 38, 39 PANIPAT
(AREA 143.86 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.		
	a) 400mm i/d		
	Avg. depth upto 2 M 7080 M @ Rs. 1000.00 per RM	Rs.	70,80,000.00
	b) 600mm i/d		
	Avg. depth upto 2 M 570 M @ Rs. 1300.00 per M	Rs.	7,41,000.00
	Avg. depth 2 M to 4 M 480 M @ Rs. 1400.00 per Mtr.	Rs.	6,72,000.00
	c) 800mm i/d		
	Avg. depth 2 M to 4 M 160 M @ Rs. 1700.00 per M	Rs.	2,72,000.00
	d) 1000mm i/d		
	Avg. depth 2 M to 4 M 150 M @ Rs. 2315.00 per M	Rs.	3,47,250.00
		Rs.	91,12,250.00
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

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5.	Provision for temporary disposal arrangement	Rs. 15,00,000.00
6.	Provision for S.W. drain connection with HUDA S.W. Drain	Rs. 1,00,000.00
		Rs. 111,62,250.00
	Add 3 % contingencies & P.E. charges	Rs. 3,34,868.00
		Rs. 114,97,118.00
	Add 49 % departmental charges	Rs. 56,33,588.00
		Rs. 171,30,706.00
		Say 171.31 lacs.

C.O. to Final Abstract of Cost

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PARSVNATH PALIWAL CITY, SECTOR - 38, 39, PANIPAT

MATERIAL STATEMENT OF STORM WATER DRAIN

Sr. No.	Name of sewer line	Length in Mtr.	Length in Mtr.		
			Upto 2 M	2 M to 4 M	4M to 6 M
1	2	3	4	5	6
A) 400mm I/d					
1	A-B	260	260		
2	B-C	50	50		
3	C-D	65	65		
6	B1-B	225	225		
7	C1-C	200	200		
8	D1-D2	310	310		
9	E1-E	200	200		
10	G-H	150	150		
11	H-J	40	40		
12	J-K	60	60		
14	H1-H	120	120		
15	J1-J	190	190		
16	K1-K2	70	70		
17	K2-K3	40	40		

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Sr. No.	Name of sewer line	Length in Mtr.	Length in Mtr.		
			Upto 2 M	2 M to 4 M	4M to 6 M
18	K3-K	65	65		
19	K4-K5	60	60		
20	K6-K5	30	30		
21	K5-K2	30	30		
22	K7-K3	50	50		
23	K8-K	135	135		
24	M-N	165	165		
25	N-O	225	225		
26	O-P	60	60		
33	O1-O	60	60		
34	P1-P	60	60		
35	Q1-Q	60	60		
36	R1-R2	220	220		
37	R3-R2	180	180		
39	R4-R	435	435		
40	S1-S2	80	80		
41	S2-S	240	240		

Sr. No.	Name of sewer line	Length in Mtr.	Length in Mtr.		
			Upto 2 M	2 M to 4 M	4M to 6 M
42	T1-T	220	220		
43	U1-U2	300	300		
44	U2-U3	60	60		
47	U5-U2	225	225		
48	U6-U3	225	225		
49	U7-U4	225	225		
50	U8-U9	180	180		
51	U10-U9	80	80		
52	U9-U	200	200		
53	V-W	140	140		
54	W-X	60	60		
55	X-Y	75	75		
58	W1-W	140	140		
59	X1-X	180	180		
60	Y1-Y	250	250		
61	Z1-Z	225	225		

Sr. No.	Name of sewer line	Length in Mtr.	Length in Mtr.		
			Upto 2 M	2 M to 4 M	4M to 6 M
62	Z2-Z	160	160		
	Total	**7080**	**7080**	**0**	**0**
B) 600mm I/d					
4	D-E	110		110	
5	E-HUDA DRAIN	150	150		
13	K-HUDA DRAIN	290		290	
27	P-Q	70	70		
28	Q-R	80		80	
38	R2-R	90	90		
45	U3-U4	75	75		
46	U4-U	60	60		
56	Y-Z	75	75		
57	Z-HUDA DRAIN	50	50		
	Total	**1050**	**570**	**480**	
C) 800mm I/d					
29	R-S	100		100	
30	S-T	60		60	

	Total	**160**		**160**	
Sr. No.	Name of sewer line	Length in Mtr.	Length in Mtr.		
			Upto 2 M	2 M to 4 M	4M to 6 M
D) 1000mm I/d					
31	T-U	100		100	
32	U-HUDA DRAIN	50		50	
	Total	**150**		**150**	

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PARSVNATH PALIWAL CITY, SECTOR – 38, 39 PANIPAT (AREA 143.86 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	8302	5.50	45661
24 M & 15 M Wide	1580 (720 + 860)	7.00	11060
			56721
		Add 5 % curves	2836
			59557
		Say	60000 sq. m

Abstract of Cost

1. Provision for leveling – earth filling / cutting as per site conditions.
   Area 162.48 – 18.62 = 143.86 Acres
   @ Rs. 50000.00 per acre — Rs. 71,93,000.00

2. a) Preparation of sub grade by excavating to an average depth upto 10" dressing of chamber 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

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Bajri) @ 6 ½ sft./100 sft. Of road surface.

f) Laying of wearing coat of 4 ½" and consolidation with binding material complete 60000 sq. m. @ Rs. 100.00 — Rs. 60,00,000.00

3. Provision of Kerb and Channel of concrete (1: 1 ½:3) M – 20 as per standard design.
12 M wide road 8302 M
24 M & 15 M wide road 1580 M
9882 M

Add 5 % curves 494 M
10376M
Say 10400 M
10400 M @ Rs. 250.00 per M — Rs. 26,00,000.00

4. Provision of 1" thick premix carpet as per PWD specifications with mechanical pavers
60000 sq. m. @ Rs. 60.00 — Rs. 36,00,000.00

5. Provision for cement concrete pavement along 124 M road with Pre-cast tiles of cement concrete 1: 1 ½:3
24 M wide :- 860 x 2.4 = 2064 sqm.
Say 2065 sq. m. @ Rs. 250.00 per sqm. — Rs. 5,16,250.00

6. Provision of guide maps — Rs. 50,000.00

7. Provision for demarcation Burjees – L.S. — Rs. 30,000.00

8. Provision for Traffic Lights – L.S. — Rs. 25,000.00

9. Provision for carriage of material and unforseen items - L.S. — Rs. 1,00,000.00

10. Provision for plot Indicator Board - L.S. — Rs. 50,000.00

Total — Rs. 2,01,64,250.00

Add 3 % contingencies — Rs. 6,04,928.00

Rs. 2,07,69,178.00

Add 49 % Departmental charges — Rs. 1,01,76,897.00

Rs. 3,09,46,075.00

Say Rs. 310.00 lacs.

C.O. to Final Abstract of Cost

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Statement showing Road Legnth

S. No.	Road No.	Road Length in Meters			Remarks
		12 M wide	15 M wide	24 M wide	
1	1	250			
2	2	250			
3	3	80			
4	4	250			
5	5	40			
6	6	400			
7	7	360			
8	8	290			
9	9	140			
10	10	450			
11	11	440			
12	12	110			
13	13	60			
14	14	70			
15	15	110			
16	16	420			
17	17	90			
18	18	240			
19	19	52			
20	20	270			
21	21	110			
22	22	330			
23	23			70	
24	24	70			
25	25	70			
26	26	250			
27	27			100	

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28	28	140			
29	29	130			
30	30	130			
31	31	130			
32	32	60			
33	33	290			
34	34	250			
35	35			250	
36	36	250			
37	37	250			
38	38	250			
39	39	240			
40	40			440	
41	41	100			
42	42	150			
43	43	200			
44	44		290		
45	45	180			
46	46	280			
47	47	70			
48	48		430		
		8302	720	860	

PARSVNATH PALIWAL CITY, SECTOR – 38, 39 PANIPAT
(AREA 143.86 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 = 162.48 Acres
162.48 Acres @ Rs. 50,000.00 per Acres Rs. 81,24,000.00

Add 3 % Contingency Charges & P.E. Charges Rs. 2,43,720.00

Rs. 83,67,720.00

Add 49 % Departmental charges Rs. 41,00,183.00

Rs. 124,67,903.00

Say Rs. 124.68 lacs.

C.O. to Final Abstract of Cost

(40)

PARSVNATH PALIWAL CITY, SECTOR – 38, 39 PANIPAT
(AREA 143.86 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 162.48 Acres @ 70000.00 — Rs. 113,73,600.00

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

   12 M wide Road 8302 x 1 = 8302 RM
   15 & 24 M wide Road 1580 x 2 = 3160 RM
   11462RM

   Trees @ 12 M c/c 11462 / 12 = 955.17
   Say 955.00

   Cost of One Tree

Excavation	Rs. 10.00 each.
Manure	Rs. 20.00 each.
Tree Plants	Rs. 20.00 each.
Tree Guards	Rs. 250.00 each.
	Rs. 300.00 each.

   955 trees @ Rs. 300.00 each. — Rs. 2,86,500.00

Rs. 116,60,100.00

Add 3 % Contingency & P.E. Charges — Rs. 3,49,803.00

Rs. 120,09,903.00

Add 49 % Departmental charges — Rs. 58,84,852.00

Rs. 178,94,755.00

Say Rs. 178.95 lacs.

C.O. to Final Abstract of Cost

PARSVNATH PALIWAL CITY, SECTOR - 38, 39, PANIPAT

TERMINAL HEAD STATEMENT OF WATER SUPPLY SCHEME

S. No.	Name of pipe line	No. of Plots Self	Branch	Total	Population @ 13.5 person/plot	Requirement in KL @ 155.25 ltrs. per head per day	Requirement from community building Self	Total	Requirement in KL from park Area in Acres	Req. @ 25 KL per acre	Total requirement in K.L. (7+9+11)	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 mtrs.	Hydraulic level Upper end	Lower end	Ground level at lower end	Terminal Head available	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	OHSR-A	-	927	927	12514.50	1942.88	-	676.25	4.84	121.00	2740.13	6850.32	1508880	350	75	3.24	0.24	258.20	257.96	233.20	24.76	G.L. at
2	A-B	4	453	457	6169.50	957.81	12.50	436.25	3.24	81.00	1475.06	3687.66	812260	300	155	2.10	0.33	257.96	257.63	233.60	24.03	OHSR = 233.20 M
3	B-C	3	328	331	4468.50	693.73		337.50	2.70	67.50	1098.73	2746.84	605030	250	100	3.00	0.30	257.63	257.33	233.60	23.73	Height of
4	C-D		299	299	4036.50	626.67		337.50	2.49	62.25	1026.42	2566.04	565207	250	65	2.64	0.17	257.33	257.16	233.60	23.56	OHSr = 25.00 M
5	D-E	-	267	267	3604.50	559.60	25.00	337.50	1.74	43.50	940.60	2351.50	517951	250	120	2.29	0.27	257.16	256.89	233.60	23.29	Hydraulic
6	E-F		141	141	1903.50	295.52	-	192.50	0.34	8.50	496.52	1241.30	273413	200	30	2.05	0.06	256.89	256.83	233.60	23.23	level at
7	F-G		141	141	1903.50	295.52	-	192.50	0.34	8.50	496.52	1241.30	273413	200	70	2.05	0.14	256.83	256.69	233.60	23.09	OHSR = 258.20 M
8	G-G'		111	111	1498.50	232.64	-	192.50	0.34	8.50	433.64	1084.11	238790	200	20	1.62	0.03	256.69	256.66	233.60	23.06	
9	G-H	-	111	111	1498.50	232.64	-	192.50	0.34	8.50	433.64	1084.11	238790	200	60	1.62	0.10	256.66	256.56	233.60	22.96	
10	H-J		111	111	1498.50	232.64	-	192.50	0.34	8.50	433.64	1084.11	238790	200	90	1.62	0.15	256.56	256.41	233.60	22.81	
11	J-K		111	111	1498.50	232.64		192.50	0.20	5.00	430.14	1075.36	236862	200	250	1.62	0.41	256.41	256.00	233.76	22.24	
12	K-L	-	101	101	1363.50	211.68		192.50	0.20	5.00	409.18	1022.96	225321	200	55	1.43	0.08	256.00	255.92	233.80	22.12	

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
13	L-M		74	74	999.00	155.09	-	192.50	0.20	5.00	352.59	881.49	194160	150	65	4.35	0.28	255.92	255.64	233.85	21.79	
14	M-N		46	46	621.00	96.41	-	192.50	0.20	5.00	293.91	734.78	161845	150	90	3.10	0.28	255.64	255.36	233.90	21.46	
15	N-O		21	21	283.50	44.01		135.00	0.20	5.00	184.01	460.03	101329	150	75	1.62	0.12	255.36	255.24	233.90	21.34	
16	O-P		10	10	135.00	20.96	-	135.00	0.10	2.50	158.46	396.15	87257	150	30	1.03	0.03	255.24	255.21	233.60	21.61	
17	P-Q	4		4	54.00	8.38	135.00	135.00			143.38	358.46	78956	150	240	0.86	0.21	255.21	255.00	233.60	21.40	
18	B-R		111	111	1498.50	232.64			0.54	13.50	246.14	615.36	135541	150	60	2.56	0.15	257.63	257.48	233.60	23.88	
19	R-S		76	76	1026.00	159.29			0.54	13.50	172.79	431.97	95147	150	70	1.21	0.08	257.48	257.40	233.70	23.70	
20	S-S'		60	60	810.00	125.75			0.40	10.00	135.75	339.38	74754	150	20	0.71	0.01	257.40	257.39	233.70	23.69	
21	S'-T		44	44	594.00	92.22			0.40	10.00	102.22	255.55	56288	100	50	3.39	0.20	257.39	257.19	233.70	23.49	
22	T-U		14	14	189.00	29.34			0.23	5.75	35.09	87.73	19324	100	90	0.62	0.06	257.19	257.13	233.70	23.43	
23	U-J	14		14	189.00	29.34			0.06	1.50	30.84	77.11	16984	100	280	0.62	0.17	257.13	256.96	233.60	23.36	
24	E-V	5	106	111	1498.50	232.64	60.0	70.0			302.64	756.61	166653	150	110	3.10	0.34	256.89	256.55	232.80	23.75	
25	V-W	3	95	98	1323.00	205.40		10.0			215.40	538.49	118610	150	65	2.06	0.13	256.55	256.42	232.80	23.62	
26	W-X	4	83	87	1174.50	182.34		10.0			192.34	480.85	105915	150	65	1.62	0.11	256.42	256.31	232.80	23.51	
27	X-Y	2	71	73	985.50	153.00		10.0			163.00	407.50	89757	150	40	1.03	0.04	256.31	256.27	232.80	23.47	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
28	Y-Z	48	16	64	864.00	134.14		10.0			144.14	360.34	79370	150	285	0.86	0.25	256.27	256.02	232.80	23.22	
29	Z-Z'	16		16	216.00	33.53					33.53	83.84	18466	100	150	0.62	0.09	256.02	255.93	232.90	23.03	
30	B-B1	11		11	148.50	23.05		86.3			109.30	273.26	60190	100	230	4.72	1.09	257.63	256.54	232.80	23.74	
31	B1-B2						86.3	86.3			86.25	215.63	47494	100	150	2.23	0.33	256.54	256.21	232.80	23.41	
32	B1-C1													100	100	0.62	0.06	256.54	256.48	232.80	23.68	
33	C-C1	29		29	391.50	60.78					60.78	151.95	33469	100	240	1.32	0.24	257.33	257.09	232.80	24.29	
34	D-D1	32		32	432.00	67.07			0.75	18.75	85.82	214.55	47257	100	265	2.23	0.59	257.16	256.57	232.80	23.77	
35	E-E1	15		15	202.50	31.44	50.0	50.0	1.40	35.00	116.44	291.10	64118	100	410	4.72	1.94	256.89	254.95	233.50	21.45	
36	G-G1	30		30	405.00	62.88					62.88	157.19	34623	100	240	1.32	0.32	256.69	256.37	233.60	22.77	
37	K-K1	10		10	135.00	20.96					20.96	52.40	11541	100	100	0.62	0.06	256.00	255.94	233.75	22.19	
38	L-L1	27		27	364.50	56.59					56.59	141.47	31161	100	150	1.32	0.20	255.92	255.72	233.80	21.92	
39	M-M1	28		28	378.00	58.68					58.68	146.71	32315	100	200	1.32	0.26	255.64	255.38	233.85	21.53	
40	N-E1	25		25	337.50	52.40	57.5	57.5			109.90	274.74	60516	100	290	4.72	1.37	255.36	253.99	233.50	20.49	
41	O-O1	11		11	148.50	23.05					23.05	57.64	12695	100	170	0.62	0.11	255.24	255.13	233.60	21.53	
42	P-P1	6		6	81.00	12.58			0.10	2.50	15.08	37.69	8301	100	70	0.62	0.04	255.21	255.17	233.90	21.27	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
43	R-F	35		35	472.50	73.36					73.36	183.39	40394	100	280	1.74	0.49	257.48	256.99	233.60	23.39	
44	S-G	16		16	216.00	33.53					33.53	83.84	18466	100	280	0.62	0.17	257.40	257.23	233.60	23.63	
45	S'-G'	16		16	216.00	33.53					33.53	83.84	18466	100	280	0.62	0.17	257.39	257.22	233.60	23.62	
46	T-H	30		30	405.00	62.88					62.88	157.19	34623	100	280	1.32	0.37	257.13	256.76	233.60	23.16	
47	V-V1	8		8	108.00	16.77					16.77	41.92	9233	100	70	0.62	0.04	256.55	256.51	232.80	23.71	
48	W-W1	8		8	108.00	16.77					16.77	41.92	9233	100	70	0.62	0.04	256.42	256.38	232.80	23.58	
49	X-X1	10		10	135.00	20.96					20.96	52.40	11541	100	70	0.62	0.04	256.31	256.27	232.80	23.47	
50	Y-D1	7		7	94.50	14.67					14.67	36.68	8079	100	120	0.62	0.07	256.27	256.30	232.80	23.50	
51	Z-Z1						10.0	10.0			10.00	25.00	5507	100	25	0.62	0.02	256.02	256.00	232.80	23.20	
52	A-a	23	447	470	6345.00	985.06		240.0	1.02	25.50	1250.56	3126.40	688635	250	160	4.18	0.67	257.96	257.29	232.20	25.09	
53	a-b		380	380	5130.00	796.43		10.0	0.45	11.25	817.68	2044.21	450266	250	20	1.68	0.03	257.29	257.26	232.20	25.06	
54	b-c		319	319	4306.50	668.58		10.0	0.28	7.00	685.58	1713.96	377524	200	20	4.18	0.08	257.26	257.18	232.20	24.98	
55	c-d	2	250	252	3402.00	528.16					528.16	1320.40	290837	200	30	2.18	0.07	257.18	257.11	232.20	24.91	
56	d-e	4	158	162	2187.00	339.53					339.53	848.83	186967	150	30	4.35	0.13	257.11	256.98	233.30	23.68	
57	e-f	3	103	106	1431.00	222.16					222.16	555.41	122336	150	30	2.06	0.06	256.98	256.92	233.30	23.62	

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
58	f-g	52	49	101	1363.50	211.68					211.68	529.21	116566	150	140	1.62	0.23	256.92	256.69	233.30	23.39	
59	g-h	49		49	661.50	102.70					102.70	256.74	56552	100	255	3.39	0.86	256.69	255.83	233.60	22.23	
60	a-j		67	67	904.50	140.42		230.0	0.57	14.25	384.67	961.68	211825	200	70	1.25	0.09	257.29	257.20	233.20	24.00	
61	j-k		26	26	351.00	54.49		230.0			284.49	711.23	156659	150	95	3.10	0.29	257.20	256.91	233.20	23.71	
62	k-l	16	10	26	351.00	54.49	230.0	230.0	0.21	5.25	289.74	724.36	159550	150	230	3.10	0.71	256.91	256.20	233.40	22.80	
63	l-m	8		8	108.00	16.77					16.77	41.92	9233	100	130	0.62	0.08	256.20	256.12	233.20	22.92	
64	c-n	2	65	67	904.50	140.42		10.0	0.28	7.00	157.42	393.56	86687	150	55	1.03	0.06	257.18	257.12	233.30	23.82	
65	n-o	3	38	41	553.50	85.93		10.0	0.23	5.75	101.68	254.20	55992	100	35	3.39	0.12	257.12	257.00	233.30	23.70	
66	o-p	19		19	256.50	39.82	10.0	10.0			49.82	124.55	27435	100	70	0.94	0.07	257.00	256.93	233.40	23.53	
67	b-b1	61		61	823.50	127.85					127.85	319.62	70401	100	395	4.72	1.86	257.26	255.40	233.60	21.80	
68	b1-b2													100	50	0.62	0.03	255.40	255.37	233.60	21.77	connecting line
69	b2-h													100	60	0.62	0.04	255.37	255.33	233.60	21.73	
70	d-d1	40	48	88	1188.00	184.44					184.44	461.09	101562	150	140	1.62	0.23	257.11	256.88	233.30	23.58	
71	d1-b2	48		48	648.00	100.60					100.60	251.51	55398	100	255	3.39	0.86	256.88	256.02	233.60	22.42	
72	d1-d2													100	30	0.62	0.02	256.88	256.86	233.30	23.56	connecting line

	2	3	4	5	6	7	8	9	10	11	12		14	15	16	17	18	19	20	21	22	23
73	d2-g													100	30	0.62	0.02	256.88	256.84	233.30	23.54	connecting line
74	e-d2	52		52	702.00	108.99					108.99		60014	100	140	4.72	0.66	256.98	256.32	233.30	23.02	
75	f-f1	2		2	27.00	4.19					4.19		2308	100	20	0.62	0.01	256.92	256.91	233.30	23.61	
76	j-j1	41		41	553.50	85.93			0.36	9.00	94.93		52275	100	335	3.39	1.14	257.20	256.06	233.60	22.46	
77	j1-l1													100	65	0.62	0.04	256.06	256.02	233.50	22.52	connecting line
78	l-l1	2		2	27.00	4.19					4.19		2308	100	40	0.62	0.02	256.20	256.18	233.50	22.68	
79	n-n1	24		24	324.00	50.30					50.30	6	27699	100	60	0.94	0.06	257.12	257.06	233.40	23.66	
80	o-o1	2	17	19	256.50	39.82			0.23	5.75	45.57	13	25095	100	30	0.94	0.03	257.00	256.97	233.30	23.67	
81	o1-o2	7		7	94.50	14.67					14.67	3	8079	100	30	0.62	0.02	256.97	256.95	233.40	23.55	
82	o1-o3	10		10	135.00	20.96			0.23	5.75	26.71	67	14707	100	50	0.62	0.03	256.95	256.92	233.40	23.52	

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PARSVNATH PALIWAL CITY, SECTOR - 38, 39, PANIPAT

DESIGN STATEMENT OF SEWERAGE SCHEME

Sr. No.	Name of Sewer line	No. of plots to be served			No. of persons @ 13.50 perons per plot	Discharge @ 155.25 litre per head per day	Discharge from Community Building		Discharge from Group Housing	Total discharge in KL	Design discharge in cusec @ 3 times DWF @ 75%	Proposed size of sewer	Velocity in ft./ second	Design Discharge	Length in Mtr.	Slope	Fall	Ground level		Bed 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
1	A-B	49		49	662	102.78				102.78	0.09	200	2.50	0.44	290	1/225	1.29	233.60	233.30	232.40	231.11		1.20	2.19	1.69
2	B-C	40	97	137	1850	287.21				287.21	0.26	200	2.50	0.44	140	1/225	0.62	233.30	233.30	231.11	230.49	230.46	2.19	2.81	2.50
3	C-D	3	249	252	3402	528.16				528.16	0.49	250	2.50	0.68	40	1/305	0.13	233.30	233.30	230.46	230.33	230.30	2.84	2.97	2.91
4	D-E		380	380	5130	796.43		10		806.43	0.74	300	2.50	0.98	40	1/385	0.10	233.30	233.30	230.30	230.20	230.15	3.00	3.10	3.05
5	E-F	26	440	466	6291	976.68	12.50	252.5	472.65	1701.83	1.57	400	2.50	1.74	320	1/570	0.56	233.30	233.60	230.15	229.59		3.15	4.01	3.58
6	F-G	3	485	488	6588	1022.79		338.75	472.65	1834.19	1.69	400	2.50	1.74	40	1/570	0.07	233.60	233.60	229.59	229.52	229.27	4.01	4.08	4.04
7	G-STP		927	927	12515	1942.95		776.25	1166.31	3885.51	3.58	600	2.82	3.94	60	1/970	0.06	233.60	233.60	229.27	229.19		4.33	4.41	4.37
8	STP-HUDA SEWER		927	927	12515	1942.95		776.25	1166.31	3885.51	3.58	600	2.50	3.94	100	1/970	0.10	233.60	233.60	229.19	229.09		4.41	4.51	4.46
9	B1-B	48		48	648	100.60				100.60	0.09	200	2.50	0.44	240	1/225	1.07	233.60	233.30	232.40	231.39		1.20	1.91	1.56
10	C1-C2	52		52	702	108.99				108.99	0.10	200	2.50	0.44	120	1/225	0.53	233.30	233.30	232.10	231.57		1.20	1.73	1.47
11	C2/1-C2	2		2	27	4.19				4.19	0.00	200	2.50	0.44	20	1/225	0.09	233.30	233.30	232.10	232.01		1.20	1.29	1.25
12	C2-C3	3	54	57	770	119.54				119.54	0.11	200	2.50	0.44	30	1/225	0.13	233.30	233.30	231.57	231.44		1.73	1.86	1.80
13	C3-C	3	109	112	1512	234.74				234.74	0.22	200	2.50	0.44	30	1/225	0.13	233.30	233.30	231.44	231.31		1.86	1.99	1.93
14	C4-C3	52		52	702	108.99				108.99	0.10	200	2.50	0.44	120	1/225	0.53	233.30	233.30	232.10	231.57		1.20	1.73	1.47

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Sr. No.	Name of Sewer line	No. of plots to be served			No. of persons @ 13.50 perons per plot	Discharge @ 155.25 litre per head per day	Discharge from Community Building		Discharge from Group Housing	Total discharge in KL	Design discharge in cusec @ 3 times DWF @ 75%	Proposed size of sewer	Velocity in ft./ second	Design Discharge	Length in Mtr.	Slope	Fall	Ground level		Bed level			Depth		Averag e Depth
		Self	Branch	Total			Self	Total										Upper end	Lower end	Upper end	Lower end		Upper end	Lower end	
15	D1-D	61		61	824	127.93				127.93	0.12	200	2.50	0.44	370	1/225	1.64	233.60	233.30	232.40	230.76		1.20	2.54	1.87
16	D2-D3	10		10	135	20.96				20.96	0.02	200	2.50	0.44	60	1/225	0.27	233.40	233.40	232.20	231.93		1.20	1.47	1.34
17	D3-D4	2	18	20	270	41.92				41.92	0.04	200	2.50	0.44	30	1/225	0.13	233.40	233.30	231.93	231.80		1.47	1.50	1.49
18	D4-D5	1	41	42	567	88.03		10		98.03	0.09	200	2.50	0.44	30	1/225	0.13	233.30	233.30	231.80	231.67		1.50	1.63	1.57
19	D5-D		67	67	905	140.50		10		150.50	0.14	200	2.50	0.44	50	1/225	0.22	233.30	233.30	231.67	231.45	230.30	1.63	1.85	1.74
20	D6-D3	8		8	108	16.77				16.77	0.02	200	2.50	0.44	40	1/225	0.18	233.40	233.30	232.20	232.02		1.20	1.28	1.24
21	D7-D4	21		21	284	44.09	10	10		54.09	0.05	200	2.50	0.44	80	1/225	0.36	233.40	233.30	232.20	231.84		1.20	1.46	1.33
22	D8-D5	25		25	338	52.47				52.47	0.05	200	2.50	0.44	60	1/225	0.27	233.40	233.30	232.20	231.93		1.20	1.37	1.29
23	E1-E2	18		18	243	37.73	230	230		267.73	0.25	200	2.50	0.44	340	1/225	1.51	233.50	233.20	232.30	230.79		1.20	2.41	1.80
24	E2-E		60	60	810	125.75		230		355.75	0.33	200	2.50	0.44	70	1/225	0.31	233.20	233.30	230.79	230.48		2.41	2.82	2.62
25	E3-E2	42		42	567	88.03				88.03	0.08	200	2.50	0.44	315	1/225	1.40	233.60	233.20	232.40	231.00		1.20	2.20	1.70
26	F1-F2	8		8	108	16.77				16.77	0.02	200	2.50	0.44	180	1/225	0.80	233.50	233.60	232.30	231.50		1.20	2.10	1.65
27	F2-F	11	8	19	257	39.90	86.25	86.25		126.15	0.12	250	2.50	0.68	420	1/305	1.37	233.60	233.60	231.50	230.13		2.10	3.47	2.79
28	H1-H	4		4	54	8.38	135	135		143.38	0.13	200	2.50	0.44	230	1/225	1.02	233.60	233.66	232.40	231.38		1.20	2.28	1.74
29	H-J		10	10	135	20.96		135		155.96	0.14	200	2.50	0.44	40	1/225	0.18	233.66	233.60	231.38	231.20		2.28	2.40	2.34
30	J-K		21	21	284	44.09		135		179.09	0.16	200	2.50	0.44	70	1/225	0.31	233.60	233.40	231.20	230.89	230.84	2.40	2.51	2.46

Sr. No.	Name of Sewer line	No. of plots to be served			No. of persons @ 13.50 perons per plot	Discharge @ 155.25 litre per head per day	Discharge from Community Building		Discharge from Group Housing	Total discharge in KL	Design discharge in cusec @ 3 times DWF @ 75%	Proposed size of sewer	Velocity in ft./ second	Design Discharge	Length in Mtr.	Slope	Fall	Ground level		Bed level			Depth		Average Depth
		Self	Branch	Total			Self	Total										Upper end	Lower end	Upper end	Lower end		Upper end	Lower end	
31	K-L	25	86	111	1499	232.72	57.50	192.50		425.22	0.39	300	2.50	0.98	270	1/385	0.70	233.40	233.60	230.84	230.14		2.56	3.46	3.01
32	L-M	15	111	126	1701	264.08	50	242.50		506.58	0.47	300	2.50	0.98	400	1/385	1.04	233.60	233.60	230.14	229.10	228.84	3.46	4.50	3.98
33	M-N	2	376	378	5103	792.24	25	337.50	693.66	1823.40	1.68	400	2.50	1.74	90	1/570	0.16	233.60	233.60	228.84	228.68	228.43	4.76	4.92	4.84
34	N-O		410	410	5535	859.31		331.50	693.66	1884.47	1.73	600	2.82	3.94	80	1/970	0.08	233.60	233.60	228.43	228.35	228.94	5.17	5.25	5.21
35	O-G		439	439	5927	920.17		337.50	693.66	1951.33	1.80	600	2.82	3.94	70	1/970	0.07	233.60	233.60	228.35	228.28		5.25	5.32	5.29
36	H2-H	6		6	81	12.58				12.58	0.01	200	2.50	0.44	60	1/225	0.27	233.90	233.66	232.70	232.43		1.20	1.23	1.22
37	J1-J	11		11	149	23.13				23.13	0.02	200	2.50	0.44	160	1/225	0.71	233.60	233.60	232.40	231.69		1.20	1.91	1.55
38	K1-K2	10		10	135	20.96				20.96	0.02	200	2.50	0.44	150	1/225	0.67	233.35	233.80	232.15	231.48		1.20	2.32	1.76
39	K2-K3		37	37	500	77.63				77.63	0.07	200	2.50	0.44	60	1/225	0.27	233.80	233.85	231.48	231.21		2.32	2.64	2.48
40	K3-K		65	65	878	136.31				136.31	0.13	200	2.50	0.44	70	1/225	0.31	233.85	233.40	231.21	230.90		2.64	2.50	2.57
41	K4-K2	27		27	365	56.67				56.67	0.05	200	2.50	0.44	150	1/225	0.67	233.80	233.80	232.60	231.93		1.20	1.87	1.54
42	K5-K3	28		28	378	58.68				58.68	0.05	200	2.50	0.44	190	1/225	0.84	233.85	233.90	232.65	231.81		1.20	2.09	1.65
43	M1-M2	16		16	216	33.53				33.53	0.03	200	2.50	0.44	140	1/225	0.62	232.90	232.80	231.70	231.08		1.20	1.72	1.46
44	M2-M3	48	16	64	864	134.14	10	10		144.14	0.13	200	2.50	0.44	260	1/225	1.16	232.80	232.80	231.08	229.92	229.89	1.72	2.88	2.30
45	M3-M4	2	71	73	986	153.08				153.08	0.14	250	2.50	0.68	50	1/305	0.16	232.80	232.80	229.89	229.73		2.91	3.07	2.99
46	M4-M5	4	81	85	1148	178.23				178.23	0.16	250	2.50	0.68	60	1/305	0.20	232.80	232.80	229.73	229.53		3.07	3.27	3.17

(50)

Sr. No.	Name of Sewer line	No. of plots to be served			No. of persons @ 13.50 perons per plot	Discharge @ 155.25 litre per head per day	Discharge from Community Building		Discharge from Group Housing	Total discharge in KL	Design discharge in cusec @ 3 times DWF @ 75%	Proposed size of sewer	Velocity in ft./ second	Design Discharge	Length in Mtr.	Slope	Fall	Ground level		Bed level			Depth		Average Depth
		Self	Branch	Total			Self	Total										Upper end	Lower end	Upper end	Lower end		Upper end	Lower end	
47	M5-M6	3	93	96	1296	201.20				201.20	0.19	250	2.50	0.68	80	1/305	0.26	232.80	232.80	229.53	229.27		3.27	3.53	3.40
48	M6-M	5	104	109	1472	228.53	60	70		298.53	0.27	250	2.50	0.68	90	1/305	0.30	232.80	233.60	229.27	228.97	228.89	3.53	4.63	4.08
49	M7-M3	7		7	95	14.75				14.75	0.01	200	2.50	0.44	100	1/225	0.44	232.80	232.80	231.60	231.16		1.20	1.64	1.42
50	M8-M4	10		10	135	20.96				20.96	0.02	200	2.50	0.44	80	1/225	0.36	232.80	232.80	231.60	231.24		1.20	1.56	1.38
51	M9-M5	8		8	108	16.77				16.77	0.02	200	2.50	0.44	80	1/225	0.36	232.80	232.80	231.60	231.24		1.20	1.56	1.38
52	M10-M6	8		8	108	16.77				16.77	0.02	200	2.50	0.44	80	1/225	0.36	232.80	232.80	231.60	231.24		1.20	1.56	1.38
53	P-Q	14		14	189	29.34				29.34	0.03	200	2.50	0.44	240	1/225	1.07	233.70	233.60	232.50	231.43		1.20	2.17	1.68
54	Q-R		14	14	189	29.34			693.66	723.00	0.67	300	2.50	0.98	80	1/385	0.21	233.60	233.60	231.43	231.22		2.17	2.38	2.27
55	R-S		44	44	594	92.22			693.66	785.88	0.72	300	2.50	0.98	60	1/385	0.16	233.60	233.60	231.22	231.01		2.38	2.59	2.49
56	S-T		60	60	810	125.75			693.66	819.41	0.75	300	2.50	0.98	20	1/385	0.05	233.60	233.60	231.01	230.96		2.59	2.64	2.61
57	T-U		106	106	1431	222.16			693.66	915.82	0.84	300	2.50	0.98	70	1/385	0.18	233.60	233.60	230.96	230.78		2.64	2.82	2.73
58	U-M		141	141	1904	295.60		25	693.66	1014.26	0.93	300	2.50	0.98	30	1/385	0.08	233.60	233.60	230.78	230.70		2.82	2.90	2.86
59	R1-R	30		30	405	62.88				62.88	0.06	200	2.50	0.44	240	1/225	1.07	233.70	233.60	232.50	231.43		1.20	2.17	1.68
60	S1-S	16		16	216	33.53				33.53	0.03	200	2.50	0.44	240	1/225	1.07	233.70	233.60	232.50	231.43		1.20	2.17	1.68
61	T2-T	30		30	405	62.88				62.88	0.06	200	2.50	0.44	240	1/225	1.07	233.60	233.60	232.40	231.33		1.20	2.27	1.73
62	T1-T	16		16	216	33.53				33.53	0.03	200	2.50	0.44	240	1/225	1.07	233.70	233.60	232.50	231.43		1.20	2.17	1.68

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Sr. No.	Name of Sewer line	No. of plots to be served			No. of persons @ 13.50 perons per plot	Discharge @ 155.25 litre per head per day	Discharge from Community Building		Discharge from Group Housing	Total discharge in KL	Design discharge in cusec @ 3 times DWF @ 75%	Proposed size of sewer	Velocity in ft./ second	Design Discharge	Length in Mtr.	Slope	Fall	Ground level		Bed level			Depth		Average Depth
		Self	Branch	Total			Self	Total										Upper end	Lower end	Upper end	Lower end		Upper end	Lower end	
63	U1-U	35		35	473	73.43	25	25		98.43	0.09	200	2.50	0.44	240	1/225	1.07	233.60	233.60	232.40	231.33		1.20	2.27	1.73
64	N1-N	32		32	432	67.07				67.07	0.06	200	2.50	0.44	250	1/225	1.11	232.80	233.60	231.60	230.49		1.20	3.11	2.16
65	O1-O	29		29	392	60.86				60.86	0.06	200	2.50	0.44	250	1/225	1.11	232.80	233.60	231.60	230.49		1.20	3.11	2.16

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PARSVNATH PALIWAL CITY, SECTOR - 38, 39, PANIPAT

DESIGN STATEMENT OF STORM WATER DRAIN

Sr. No.	Name of sewer line	Area to be served			Discharge in cusec @ 1/4" Rainfall	Size of Drain	Velocity in ft./second	Design discharge in cusec	Length in Mtr.	Slope	Fall	Ground Level		Bed level			Depth		Average Depth
		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	4.13		4.13	1.03	400	2.50	3.48	260	1/570	0.46	233.30	233.60	232.3	231.84		1.00	1.76	1.38
2	B-C	0.22	7.77	7.99	2.00	400	2.50	3.48	50	1/570	0.09	233.60	233.60	231.84	231.75		1.76	1.85	1.80
3	C-D	0.30	11.71	12.01	3.00	400	2.50	3.48	65	1/570	0.12	233.60	233.50	231.75	231.63	231.43	1.85	1.87	1.86
4	D-E	0.60	18.66	19.26	4.82	600	2.50	7.88	110	1/970	0.11	233.50	233.50	231.43	231.32		2.07	2.18	2.13
5	E-HUDA DRAIN	1.46	27.09	28.55	7.14	600	2.50	7.88	150	1/970	0.16	233.50	232.80	231.32	231.16		2.18	1.64	1.91
6	B1-B	3.64		3.64	0.91	400	2.50	3.48	225	1/570	0.40	233.30	233.60	232.30	231.90		1.00	1.70	1.35
7	C1-C	3.72		3.72	0.93	400	2.50	3.48	200	1/570	0.35	233.30	233.60	232.30	231.95		1.00	1.65	1.33
8	D1-D	6.65		6.65	1.66	400	2.50	3.48	310	1/570	0.54	233.20	233.50	232.2	231.85		1.00	1.65	1.33
9	E1-E	7.83		7.83	1.96	400	2.50	3.48	200	1/570	0.35	233.20	233.50	232.2	231.85		1.00	1.65	1.33
10	G-H	1.62		1.62	0.41	400	2.50	3.48	150	1/570	0.26	233.30	233.30	232.3	232.04		1.00	1.26	1.13

Sr. No.	Name of sewer line	Area to be served			Discharge in cusec @ 1/4" Rainfall	Size of Drain	Velocity in ft./second	Design discharge in cusec	Length in Mtr.	Slope	Fall	Ground Level		Bed level		Depth		Average Depth
		Self	Branch	Total								Upper end	Lower end	Upper end	Lower end	Upper end	Lower end	
60	Y1-Y	7.56		7.56	1.89	400	2.50	3.48	250	1/570	0.44	233.80	233.40	232.80	232.36	1.00	1.04	1.02
61	Z1-Z	2.43		2.43	0.61	400	2.50	3.48	225	1/570	0.40	233.60	233.60	232.60	232.2	1.00	1.40	1.20
62	Z2-Z	2.43		2.43	0.61	400	2.50	3.48	160	1/570	0.28	233.60	233.60	232.60	232.22	1.00	1.38	1.19

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