

**Directorate of Town and Country Planning, Haryana**  
**Nagar Yojana Bhavan, Plot No.3, Sector-18A, Madhya Marg, Chandigarh,**  
**Phone: 0172-2549349; E-mail: tcpharyana7@gmail.com**

Regd.

To

✓  
DLF Ltd,  
DLF Centre, Sansad Marg,  
New Delhi-110001.

Memo No. LC-1838-JE(S)/2022/ 5230

Dated: 22-02-22

**Subject: Approval of Service Plan/Estimates of Residential Plotted Colony of license no. 208 of 2008 dated 25.12.2008 over an area measuring 1.625 acres New Pocket out of total area 248.18925 acres in Sector-27, 28 & 43, Gurugram being developed by DLF Ltd.**

Ref: Chief Engineer-1, HSVP memo no. CE-I /ACE(HQ) /HDM(G)/2021/219530 dated 29.12.2021.

The service plan/estimates for Residential Plotted Colony of license no. 208 of 2008 dated 25.12.2008 over an area measuring 1.625 acres New Pocket out of total area 248.18925 acres in Sector-27, 28 & 43, Gurugram being developed by you, has been checked and corrected wherever necessary by Chief Engineer-I, HSVP, Panchkula and are hereby approved subject to the following terms & conditions:

1. That you will abide by all the conditions and notes mentioned in the Service Plan Estimates of the subject cited colony contained in the Chief Engineer-I, HSVP, Panchkula office memo dated 29.12.2021.
2. That you will have to pay the proportionate cost of External Development Charges for setting up Residential Plotted Colony for the service like water supply, sewerage, storm water drainage, roads, bridges, community buildings, street lighting, horticulture and maintenance thereof etc. on gross average basis as and when determined by HSVP. These charges will be modifiable as and when approved by the authority/state Govt. and will be binding upon the colonizer.
3. The category wise area shown on the plans and proposed density of population thereof has been treated to be correct for the purpose of services only.
4. That you shall be responsible for maintenance and upkeep of all roads, open spaces, public parks and public health services for a period of five years from the date of issue of the completion certificate under rule 16 unless earlier relieved of this responsibility and there upon to transfer all such roads, open spaces, public parks and public health services free of cost to the Government or the local authority, as the case may be.
5. The wiring system of street lighting will be under ground and the specifications of the street lighting fixture etc. will be as per relevant standard of HVPNL. LED lamps shall be provided to meet the requirement of HVPNL and as well environment.

6. It is made clear that appropriate provision for fire-fighting arrangement as required in the NBC/ISI should also be provided by you and fire safety certificate should also be obtained from the competent authority before undertaking any construction. You shall be sole responsible for fire safety arrangement.
7. All technical notes and comments incorporated in the estimates in two sets will also be applicable. A copy of these is also appended as Annexure-A.
8. That you shall execute the development works as per Environmental Clearance and comply with the provisions of Environment Protection Act, 1986, Air (Prevention and Control of Pollution of Act 1981) and Water (Prevention and Control of Pollution of 1974). In case of any violation of the provisions of said statutes, you shall be liable for penal action by Haryana State Pollution Controlled Board or any other Authority Administering the said Acts.

**DA/As Above.**

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

Endst. No. LC-1838-JE(S)/2022/

Dated:

A copy is forwarded to the Chief Engineer-I, HSVP, Panchkula with reference to his memo no CE-I/ACE(HQ)/HDM(G)/2021/219530 dated 29.12.2021 for information and necessary action please.

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

FORM LC -V  
(See Rule 12)  
HARYANA GOVERNMENT  
TOWN AND COUNTRY PLANNING DEPARTMENT

Licence No. 208 of 2008

1. This Licence has been granted under the Haryana Development and Regulation of Urban Areas Act, 1975 & the Rule 1976, made thereunder to M/s DLF Ltd, DLF Center, Sansad Marg New-Delhi.110001 for setting up of a Group Housing Colony at village Chakkarpur, District Gurgaon. Haryana.
2. The particulars of the land wherein the aforesaid colony is to be set up are given in the Schedule annexed hereto and duly signed by the Director, Town & Country Planning, Haryana.
3. The Licence is granted subject to the following conditions:
  - a) That the Group Housing Colony is laid out to conform to the approved layout plan and development works are executed according to the designs and specifications shown in the approved plan.
  - b) That the conditions of the agreements already executed are duly fulfilled and the provisions of Haryana Development and Regulation of Urban Areas Act, 1975 and the Rules 1976 made there under are duly complied with.
  - c) That the demarcation plan of the colony area is submitted before starting the development works in the colony and for the approval of zoning plan.
4. That the portion of Sector /Master plan road which shall form part of the licenced area shall be transferred free of cost to the Government in accordance with the provisions of Section 3(3)(a)(iii) of the Haryana Development and Regulation of Urban Areas Act, 1975.
5. That the licensee shall construct the portion of service road forming part of licenced area at his own cost and will transfer the same free of cost to the Government along with area falling in Green Belt.
6. That the licensee will not give any advertisement for sale of shops/office/ floor area in colony before the approval of layout plan/ building plans.
7. That you will have no objection to the regularization of the boundaries of the licence through give and take with the land that HUDA is finally able to acquire in the interest of planned development and integration services. The decision of the competent authority shall be binding in this regard.
8. That you shall obtain approval/NOC from competent authority to fulfill the requirement of notification dated 14-09-2006 of Ministry of Environment & Forest, Govt. of India before starting the development works of the colony.
9. That the licensee will use only CFL fittings for internal lighting as well as for campus lighting.
10. You shall convey the 'Ultimate Power Load Requirement' of the project to the concerned power utility, with a copy to the Director, within two month period from the date of grant of licence to enable provision of site in your land for Transformers/Switching Station/ Electric Sub-Stations as per the norms prescribed by the power utility in the zoning plan of the project.
11. The licence is valid up to 24-12-2010

Dated:  
Chandigarh 25/12/2008

Endst.No.5DPiii/2008/ 12539

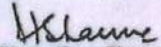
Dated: 29-12-08

  
(S.S.DHILLON)

Director,  
Town & Country Planning,  
Haryana Chandigarh.

A copy along with a copy of schedule of land is forwarded to the following for information and necessary action:-

1. To M/s DLF Ltd, DLF Center, Sansad Marg New-Delhi.110001 for setting up of a Group Housing Colony at village Chakkarpur, District Gurgaon. Haryana. along with a copy of agreement, LC-IV A and Bilateral agreement.
2. Chief Administrator, HUDA, Panchkula.
3. MD, HVPN, Planning Director, Shakti Bhawan, Sector-6, Panchkula
4. Addl. Director Urban Estates, Haryana, Panchkula.
5. Administrator HUDA, Gurgaon
6. Chief-in-Engineer, HUDA, Panchkula.
7. Superintending Engineer, HUDA Gurgaon along with a copy of agreement.
8. Land Acquisition officer, Gurgaon
9. Senior Town Planner, Gurgaon
10. Senior Town Planner (Enforcement) Haryana, Chandigarh.
11. District Town Planner, Gurgaon along with a copy of agreement.
12. Senior Town Planner (Monitoring cell) Chandigarh.
13. Accounts Office, O/o Director, Town & Country Planning, Haryana, Chandigarh along with a Copy of agreement.

  
District Town Planner Hq)HS  
For Director, Town and Country Planning,  
Haryana, Chandigarh

TO BE READ WITH LICENCE NO. 218 OF 2008

Detail of land owned by M/s DLF Limited at village Chakkarpur, Tehsil and District Gurgaon.

Village	Khasra No.	Total Area	Area Taken
Chakkarpur	407/1	2-12-0	2-12-0 Or 1.625 Acre

S. S. Sharma

2008-09-16  
2008-09-16

Asst. Collector

**REPORT AND COST ESTIMATE  
FOR INTERNAL DEVELOPMENT OF**

**NEW POCKET IN**

**PHASE –IV IN DLF CITY,**

**(FORMERLY KNOWN AS DLF QUTAB ENCLAVE),**

**GURUGRAM, HARYANA**

**M/S DLF LIMITED  
DLF CENTRE, SANSAD MARG,  
NEW DELHI-110001**

Sunil Nayyar Consulting Engineers LLP  
Gurgaon

**REPORT AND ESTIMATE ON INTERNAL DEVELOPMENT OF NEWLY ACQUIRED AREAS  
IN DLF CITY, PHASE IV, GURGAON.**

**REPORT**

**1. PREFACE**

Gurgaon is the fast developing Township of Haryana due to its proximity to National Capital Region and it is well linked with National Highway No.8 moreover due to the introduction of different industrial sectors other than the Residential Sectors, Many of the Multinational Companies moving from National Capital to Gurgaon. Considering all these factors with the guidance of Haryana Government, DLF Universal Ltd., developed many residential areas near Nathupur, Sikanderpur, Chakkarpur and Wazirabad Villages. This report and estimate is for the new areas acquired approx. 1.625 acres in DLF City, Phase-IV as per detail in para 4. In addition to that whatever minor improvement has been done that also has been incorporated in the estimate.

**2. WATER SUPPLY**

HSVP/GMDA is already supplying treated water for drinking water to DLF city, Phase -IV which is being supplied via underground tank for further distribution.

Water supply scheme has been designed and is based on norms approved by the deppt. Of HSVP/GMDA/ State Govt

**4. Population of net planned area (plotted) in phase IV is 20655 persons.**

As per the previously approved service estimates necessary provisions of infrastructures requirement also has been made at site.

**5. Distribution Network:**

Overhead tanks of 2, 00,000 Gallons (900 KL) capacity have been constructed at a staging of Average 30 mtr. At locations as marked on plans.

These overhead tanks are being equipped with pumps of required capacity and head as per the previous approvals.

The distribution network of these areas were laid as per approval @ 40 Gallons/ head/ day and Friction loss has been calculated as per the Hazens Williams formula with co-efficient C-100.

The proposed services of this new pocket areas will be connected to the existing network as marked on Plan.

**6. Under Ground Storage Reservoir:**

Underground tanks of 4.85 lakhs gallons (2200 KL) capacities has been provided as per Approved and are marked on the plans.

Phase IV tank is already connected to HSVP/GMDA supply.

This tank is well equipped with suction sumps of not less than 50 KL capacity each Pump machinery and pump chamber as per the approval.

**7. Sewerage:**

Since all of the newly acquired areas are within the developed colony and those areas were taken into consideration while original scheme was implemented and approved, it is able to take the additional load of new pockets. Sewerage connection of the proposed new areas will be connected to the sewer lines of the existing system as marked on the plan. The actual depth, ground level and size of sewer lines permits this easily.

**8. Storm Water drainage:**

The storm water of the proposed areas will be connected to the existing drain of main colony. The levels and size permits this as marked on plans.

**9. Specifications:**

The work will be carried out in accordance with the standard specifications of Public Health as laid down by the Haryana Government/ HSVP.

**10. Rates:**

The estimates has been prepared based on the present market rates.

**11. Cost:**

The cost of the scheme, including all services works out to be ~~68.34~~ <sup>78.98</sup> lacs including 3% contingencies @ 49% departmental charges.

## DLF CITY, PHASE-IV

### I. CALCULATION OF WATER DEMAND BASED ON APPROVAL AND COMPLETION OBTAINED

1. Total area of land	-	248.18925 Acres
1. Net planned area	-	192.72525 Acres
2. Number of main Plots	-	1310 Plots
Population @ 13.5 persons/ plot = 1310 x 13.5	-	17685 Persons
3. Number of EWS plot	-	330 Plots
Population @ 9persons/ plot = 330 x 9	-	2970 Persons
4. Total Population	-	20655 Persons
5. Water Demand @ 172.5 lpcd = 172.5 x 20655	-	3563 KLD
6. Shopping/ Commercial = 7.636 Acres = @ 25 KLD	-	190.90 KLD
7. Infrastructure:		
a. Creche – 2 nos @ 10 KL/ Day	-	20 KL/ Day
b. Nursery School = 11 Nos @ 10 KL/ Day	-	110 KL/ Day
c. Primary School = 4 Nos @ 50 KL/ Day	-	200 KL/ Day
d. Club/ Community Centre =1 Nos @ 50 KL/ Day	-	50 KL/ Day
e. Dispensary =1 Nos @ 50 KL/ Day	-	50 KL/ Day
f. Health centre =1 Nos @ 50 KL/ Day	-	50 KL/ Day
g. Religious building = 2 Nos @ 10 KL/ Day	-	20 KL/ Day
h. Police Post = 1 Nos @ 5 KL/ Day	-	5 KL/ Day
i. S.P.O. = 3 Nos @ 5 KL/ Day	-	15 KL/ Day
<b>Total Domestic Demand</b>	<b>Total</b>	<b>4373.9 KLD</b>
8. a) Park 19.10 Acres @ 25 KLD/ Acres (Approx 10% area)	-	477.5 KLD
b) Road side plantation 19.10 x 5 KLD	-	95.50 KLD
	<b>Total</b>	<b>573 KLD</b>
	<b>Grand Total</b>	<b>4946.9 KLD</b>
	<b>Say</b>	<b>5000 KLD</b>



9. Fire Fighting Demand -  $100\sqrt{p} = 100\sqrt{20.655}$  - **454.47 KL Say 455 KL**

**II. Capacity of Existing Reservoir:**

<b>Overhead</b>	<b>Underground</b>
900 KL	2200 KL

**III. Actual capacity required:**

**a) Over Head Reservoir**

Total daily demand for domestic use = **4373.9 KL**  
6 Hours demand **4373.9 KL** x 6/ 24 = 1093.47 KL

**Say** = **1100 KL**  
Capacity of existing OHSR = 900 KL  
Balance capacity to be added to UGT = 1100 – 900 = 200 KL

**b) Actual capacity required for U.G. Service Reservoir**

Total daily demand = **4373.9 KL**  
8 Hours capacity **4373.9** x 8 / 24 = 1457.96 KL

Balance capacity of OHSR to be added = 200 KL  
Add 1/3 of fire demand = 455/3 = 151.6 KL

Total capacity required = 1809.56

**Say** = **1810 KL**

Actual capacity provided = 2200 KL

This is more than the required.

HSVP/GMDA already started supplying of water in these area and therefore, the complete demand to be achieved from the municipal supply.

**V. WATER SUPPLY DESIGN –TERMINAL HEAD REQUIRMENT**

I. Minimum Residual pressure required. - 17 mtr.

A. Pocket –C:

At this pocket 19 nos of main plots and 2 nos of EWS plots have introduced due to this 47.35 KL/day .But as a pocket the demand has already been considered while designing main scheme. Available terminal head at this area is 31.31 meter where as required head is 17 metre.

**VI. SEWERAGE**

These pockets were already with in the colony, and provisions were made while designing the sewerage of main scheme. The depth of all sewer lines allows proper connection.

A. Pocket –C:

Depth of existing sewer line is 1.14 and the proposed pocket will be raised to meet this line and connect with 200 mm to existing sewer line.

**VII. DRAINAGE**

Depth of existing storm line is 1.12 and the proposed pocket will be raised to meet this line and connect with 400 mm to existing drainage line.

**SERVICE ESTIMATE FOR NEW AREAS IN DLF CITY ,PHASE -IV**

FINAL ABSTRACT OF COST		Amount in Rs. Lacs
	Checked subject to comments in forwarding letter No. 21953 Dt. 29/12/2021 and notes attached with the estimate	
1	WATER LINE	<del>2.85</del> 3.74
2	SEWER LINE	<del>3.57</del> 4.34
3	STORM WATER DRAINAGE	<del>5.47</del> 7.48
4	ROADS	<del>17.96</del> 19.65
5	HORTICULTURE	<del>3.98</del> 4.22
6	STREET LIGHTING	<del>4.99</del> 6.24
7	MAINTENANCE CHARGES & RESURFACING OF ROAD	<del>29.52</del> 33.31
	<b>TOTAL</b>	<del>78.98</del> 68.34

Additional Chief Engineer (HQ)  
for Chief Engineer-I, HSVP  
Panchkula  
28.12.2021

Say Rs. =  $\frac{68.34}{1.625} = 42.06$  Lacs / Acre

For DLF LIMITED

*Meelpool*

**AUTHORISED SIGNATORY**

*[Signature]*  
Executive Engineer  
HSVP Division No. VI  
Gurugram

*[Signature]*  
Superintending Engineer  
HSVP Circle No. II  
Gurugram

*[Signature]*  
Director  
Town & Country Planning  
Haryana, Chandigarh

*[Signature]*  
Sunil Nayyar Consulting Engineers LLP  
Gurgaon

SERVICE ESTIMATE FOR NEW AREAS IN DLF CITY ,PHASE -IV					
SL .NO.	DESCRIPTION	Unit	Qty	Rate	Amount
I.	<b>WATER LINE</b>				
a.)	100mm dia water line.	M	155	1250/-	1,93,750/-
(b)	Provision for electric valves carriage of material & unforeseen items				1,86,000.00
					50,000/-
					1,86,000.00
					5,580.00
					1,91,580.00
					93,874.20
					2,85,454.20
					2.85
					3.74 Lakh
II.	<b>SEWER LINE</b>				
a.)	8 inch DIA S.W. pipe including manholes	M	155	1500.00	2,32,500.00
(b)	Provision for carriage of material & unforeseen items				2,32,500.00
					50,000/-
					2,32,500.00
					6,975.00
					2,39,475.00
					1,17,342.75
					3,56,817.75
					3.57
					4.34 Lakh
III.	<b>STORM WATER DRAINAGE</b>				
a.)	16 inch DIA RCC pipe including manholes	M	155	2500.00	3,87,500.00
(b)	Provision for Road gutter & pipe connection carriage of material and unforeseen items				3,56,500.00
					10,695.00
					3,67,195.00
					1,79,925.55
					5,47,120.55
					5.47
					7.48 Lakh
IV.	<b>ROAD</b>				
a.)	Earth filling/cutting/leveling etc.	Acre	1.625	150000	2,43,750.00
b.)	9 M wide road with 5M carpeting = 134 X 5 = 670 Sqmtr. Add @ 5% = 670 x 1.05 = 703.5 say 705 Sqmtr.	Sq.mtr.	705	1200.00	8,46,000.00
	with 25mm GSD @ 250mm, 50mm DBM & 25mm BC				1,60,800/-
c.)	Kerb and channel = Length=134 mtr. x 2 (both side) = 268	M	268	600.00	1,60,800.00
(d)	Provision for carriage of material & unforeseen claims				11,70,150.00
					35,104.50
					12,05,254.50
					5,90,574.71
					17,95,829.21
					17.96
					19.65 Lakh

V.	<b>HORTICULTURE</b>				
a.)	Development	Acre	1.625	150000	2,43,750.00
b.)	Trees : 1 tree per 12 mtr. Length of road = 134/12 = 11.16 say 12 nos	Nos	12	1300.00	15,600.00
	(both side)				31200/-
					274950/-
					2,59,350.00
					8249/-
					7,780.50
					2,83,130.50
					138567/-
					1,30,893.95
					421966/-
					3,98,024.45
					4.22 lakh
					3.98
VI.	<b>STREET LIGHTING</b>				250000/- 400250/-
a.)	Providing street lightning on roads as per standard specifications of HVPN.	Acre	1.625	200000	3,25,000.00
					3,25,000.00
					2188/-
					9,750.00
					418488/-
					3,34,750.00
					805034
					1,64,027.50
					623172/-
					4,98,777.50
					4.99
					6.24 lakh
VII.	<b>MAINTENANCE CHARGES &amp; RESURFACING OF ROAD</b>				
1	Providing of M/C charges for water supply, storm water drainage, sewerage, Road, Street lighting, Horticulture etc. complete in all aspect, including Operational and establishment charges as per HSVP norms for 10 years completion.				
		Acre	1.625	750000	12,18,750.00
2	Resurfacing of roads after maintenance of first 5 years one layer of 100 mm thick (53 to 22.4 gauge) compacted to 75 mm thick WBM aggregate conforming to MGT specification (Table No.400-6 grading No. 3 for roads upto 12 M in width) with 20 mm thick premix carpet with seal coat.				
		Sqm	705	650	4,58,250.00
3	Resurfacing of roads after maintenance of 10 years.				
		Sqm	705	350	2,46,750.00
					750/-
					19,23,750.00
					170500/-
					85115/-
					57,712.50
					2235615/-
					19,81,462.50
					7095451/-
					9,70,916.63
					3331066/-
					29,52,379.13
					3331
					29.52
					lakh.

Sunil Nayar Consulting Engineers LLP  
Gurgaon

<b>Project -NEW POCKET(1.625 Acre) IN PHASE -IV IN DLF CITY</b>			
<b>WATER SUPPLY MB</b>			
<b>S No.</b>	<b>Line No</b>	<b>Dia</b>	<b>Length</b>
<b>1</b>	W1-W3	100	32
<b>2</b>	W2-W3	100	17
<b>3</b>	W3-W5	100	31
<b>4</b>	W4-W5	100	22
<b>5</b>	W5-Existing line	100	53
		<b>TOTAL</b>	<b>155</b>

DLF Limited

A/cy  
Authorized Signature

<b>MATERIAL STATEMENT FOR SEWER</b>			
<b>SI no</b>	<b>LINE</b>	<b>Dia of Pipe in MM</b>	<b>Length of line in Mtr</b>
1	S1-S3	200	32
2	S2-S3	200	17
3	S3-S5	200	31
4	S4-S5	200	22
5	S5-Existing line	200	53
<b>TOATL</b>			<b>155</b>

P. E. Limited

A/cy

**NEW POCKET(1.625 Acre) IN PHASE –IV IN DLF CITY,****MATERIAL STATEMENT OF STORM WATER LINES**

S.No	Line No.		Dia of Pipe (mm)	Length of pipe
	FROM	TOTAL		
1	D1	D2	400	32
2	D2	D3	400	17
3	D3	D5	400	31
4	D4	D5	400	22
5	D5	Existing Line	400	53
			<b>Total</b>	<b>155</b>

DLF Limited

  
 Authorised Signatory

<b>NEW POCKET(1.625 Acre) IN PHASE -IV IN DLF CITY</b>			
<b>MATERIAL STATEMENT FOR ROAD</b>			
<b>S.NO</b>	<b>ROAD</b>	<b>WIDTH In mtr</b>	<b>LENGTH in mtr.</b>
1	R1	9	53
2	R2	9	43
3	R3	9	38
		<b>TOTAL</b>	<b>134</b>
BLACK TOP WIDTH		5	
AREA IN Sqm		670	
Add 5% for curves		703.5	
SAY AREA IN Sqm		705	

DLF Limited

M4  
Authorised Signatory



## Project -NEW POCKET(1.625 Acre) IN PHASE -IV IN DLF CITY

## Water supply hydraulic calculation

S No.	Line No	Number of plots	Population @13.5persons	Daily water Demand 172.5 Liter per/Person	Self Total water demand ltr /day	Branch water demand ltr /day	Total water demand ltr /day	Peak water demand@3 of daily water demand ltr	Peak Water Demand	Length of Pipe	Effective Length (actual length+ 20%)	Proposed line dia.	Velocity in m/sec	Frictional head losses	Total Frictional head losses	Commulative Frictional head losses
	2	3	4	5	8	9	10	11	12	13	14	15	16	17	18	19
		NOS	NOS	LPD	LPD	LPD	LPD	LPD	LPM	Mtr	Mtr	MM	Mtr/sec	Mtr/Mtr	Mtr	Mtr
1	W1-W3	4	54	9315	9315	0	9315	27945	19.4	32	38	100	0.041	0.0001	0.0021	0.0021
2	W2-W3	3	41	6986	6986	0	6986	20959	14.6	17	20	100	0.031	0.0000	0.0006	0.0006
3	W3-W5	2	27	4658	4658	16301	20959	62876	43.7	31	37	100	0.093	0.0002	0.0090	0.0111
4	W4-W5	2	27	4658	4658	0	4658	13973	9.7	22	26	100	0.021	0.0000	0.0004	0.0004
5	W5-Existing line	4	54	9315	9315	25616	34931	104794	72.8	53	64	100	0.154	0.0006	0.0396	0.0507

DLF Limited

  
 Authorised Signatory

## NEW POCKET(1.625 Acre) IN PHASE -IV IN DLF CITY, (SEWERAGE DESIGN)

SI	LINE	No of Plot served	Population @ 13.5 persons plot & 9 persons for EWS	Water Requirement @172.5LPD/person	Av. Sewer load 80% of Water Requirement		Subsoil Infiltration @25% of Av Load	Self Discharge	Branch Discharge	Total Discharge		Length of line	Dia of Pipe	Slope 1 IN	Fall in Line	Velocity In	Capacity of Pipe	CHECK FOR CARRYING CAPACITY	Levels at Start		Levels at End		Starting depth of MH	End depth of MH
					Peak Load @ 3X Av. Load	Self				LPD	LPS								Mtr	MM	Mtr	m/sec		
NO.	MH NO	Normal			LPD	LPD	LPD	LPD	LPD	LPD	LPS	Mtr	MM		Mtr	m/sec	lps		1.2	mtr	mtr	mtr	mtr	mtr
1	S1-S3	4	54	9315	7452	22356	1863	24219	0	24219	0.28	32	200	190	0.17	0.76	11.90	OK	239.85	238.65	239.85	238.48	1.20	1.37
2	S2-S3	3	41	6986	5589	16767	1397	18164	0	18164	0.21	17	200	225	0.08	0.70	10.94	OK	239.85	238.65	239.85	238.57	1.20	1.28
3	S3-S5	2	27	4658	3726	11178	932	12110	42383	54493	0.63	31	200	225	0.14	0.70	10.94	OK	239.85	238.48	239.85	238.34	1.37	1.51
4	S4-S5	2	27	4658	3726	11178	932	12110	0	12110	0.14	22	200	225	0.10	0.70	10.94	OK	239.85	238.65	239.85	238.55	1.20	1.30
5	S5-Existing line	4	54	9315	7452	22356	1863	24219	66602	90821	1.05	53	200	225	0.24	0.70	10.94	OK	239.85	238.34	239.25	238.11	1.51	1.14

DLF Limited

  
 Authorised Signatory

## NEW POCKET(1.625 Acre) IN PHASE -IV IN DLF CITY,

## DESIGN CALCULATION FOR STORM LINE

SL. NO.	NAME OF THE LINE		AREA TO BE SERVED IN Sqmtr.			DISCHARGE @ 1/4" RAIN FALL	FINAL DISCHARGE	SIZE OF PIPE DRAIN (IN MM)	VELOCITY	DISCHARGE CAPACITY OF PIPE	Check	LENGTH OF PIPE	SLOPE	FALL IN MET-ERS	GROUND LEVEL		Invert Level		DEPTH OF PIPE AT	
	FROM	TO	SELF	PREVIOUS	TOTAL	6.25MM/HR								As per pipe slope	U/End	L/End	U/End	L/End	U/End	L/End
						(InM3/sec)	(In LPS)	(In mm)	(In m/sec)	(In LPS)		(In mtrs.)	(In mtrs.)	(In mtrs.)	(In mtrs.)	(In mtrs.)	(In mtrs.)	(In mtrs.)	(In mtrs.)	(In mtrs.)
1	D1	D2	1100	0	1100	0.002	1.9	400	0.72	72.22	OK	32	400	0.080	239.85	239.85	238.30	238.22	1.55	1.63
2	D2	D3	1100	1100	2200	0.004	3.8	400	0.72	72.22	OK	17	400	0.043	239.85	239.85	238.22	238.18	1.63	1.67
3	D3	D5	1100	2200	3300	0.006	5.7	400	0.72	72.22	OK	31	400	0.078	239.85	239.85	238.18	238.10	1.67	1.75
4	D4	D5	1000	0	1000	0.002	1.7	400	0.72	72.22	OK	22	400	0.055	239.85	239.85	238.30	238.25	1.55	1.61
5	D5	Existing Line	2242	4300	6542	0.011	11.4	400	0.72	72.22	OK	53	400	0.133	239.85	239.25	238.10	237.97	1.75	1.28

DLF Limited

  
 Authorised Signator

Already approved

REPORT AND ESTIMATE ON INTERNAL DEVELOPMENT OF NEWLY ACQUIRED AREAS  
IN DLF CITY, PHASE IV, GURGAON.

REPORT

1. PREFACE

Gurgaon is the fast developing Township of Haryana due to its proximity to National Capital Region and it is well linked with National Highway No. 8, moreover due to the introduction of different industrial sectors other than the Residential Sectors, Many of the Multinational Companies moving from National Capital to Gurgaon. Considering all these factors with the guidance of Haryana Government, DLF Universal Ltd. developed many residential areas near Nathupur, Sikanderpur, Chakkarpur and Wazirabad Villages. This report and estimates is for the new areas acquired approx 4.29475 acres in DLF City, Phase - IV as per detail given in para 4. In addition to that whatever minor improvement has been done that also has been incorporated in the estimate.

2. WATER SUPPLY :

HUDA already started supply of treated water to DLF City, Phase - IV, and deficiency of the supply is being met with existing borewell. When the HUDA supply stabilizes, these tubewells will act as standby source other than feeding to the Parks and green belts.

3. DESIGN:

Water supply scheme is based on 13.5 persons for non-EWS Plots and 9 persons per EWS plots.

4. Population of net planned area (plotted) in Phase IV is 20381 persons.

As per the previously approved service estimates necessary provisions of infrastructures requirement also has been made at site.

5. TUBE WELLS (Already existing)

Initially DLF City was entirely depending on tubewells. Therefore, adequate number of tubewells have been provided as per the approved service estimates and number of tubewells in Phase IV are 11 nos.

Each tubewell has been equipped with suitable type of submersible and average pump capacity is 18 KL per hour.

6. Distribution Network:

Overhead tanks of 2,00,000 Gallons (900 KL) capacity have been constructed at a staging of average 30 mtr. at location as marked on plans.

These overhead tanks are being equipped with pumps of required discharge and head as per the previous approvals.

The distribution network of these area were laid as per previous approval @ 45 Gallons / head / day and friction loss has been calculated as per the Hazeens Williams formula with co-efficient C-100.

The proposed new areas will also be connected to the existing network as marked on plan.

7. Under Ground storage reservoir:

Underground tanks of 4.85 lakhs gallons (2200 KL) capacities has been provided as per approved and are marked on the plans.

Phase IV tank is already connected to HUDA supply.

This tank is well equipped with suction sumps of not less than 50 KL capacity each pump machinery and pump chamber as per the approval.

8. Sewerage:

Since all of the newly acquired areas are with in the developed colony and those areas were taken into consideration while original scheme was implemented and approved, therefore, it is able to take the load of new pockets. Sewerage connection of the proposed new areas will be connected to the sewer lines of the existing system as marked on the plan. The actual depth, ground level and size of sewer lines permits this easily.

9. Storm Water Drainage:

The storm water of the proposed areas will be connected to the existing drain of main colony. The levels and size permits this and marked on plans.

10. Specifications :

The work will be carried out in accordance with the standards and specifications of public health as laid down by Haryana Government / HUDA.

11. Rates :

The estimates has been prepared based on the present market rates.

12. Cost:

Total cost of the scheme including all services works out to be Rs. ~~55.67~~ 56.67 Lakhs including 3% contingencies and 14% Departmental charges.

For DLF UNIVERSAL LIMITED

( AUTHORIZED SIGNATORY )

**DLF CITY , PHASE - IV**

**I. CALCULATION OF WATER DEMAND  
BASED ON LAYOUT APPROVAL**

1.	<b>Total area of land</b>	-	<b>246.43925</b>
1.	Net planned area	-	190.97525 Acres
2.	Number of main Plots	-	1291 Plots
	Population @ 13.5 persons / plot = 1291 x 13.5	-	17429 persons
3.	Number of EWS plots	-	328 plots
	Population @ 9 persons / plot = 328 x 9	-	2952 persons
4.	Total population	-	20381 persons
5.	Water demand @ 200 lpcd = 200 x 20381	-	4076.2 KLD
6.	Shopping / Commercial = 7.636 Acres = @ 25 KLD	-	190.90 KLD/day
7.	Infrastructure:		
a.	Creche - 2 nos @ 10 KL/day	-	20 KL/day
b.	Nursery School = 11 Nos @ 10 KL/day	-	110 KL/day
c.	Primary School = 4 nos @ 50 KL/day	-	200 KL/day
d.	Club / Community Centre - 1 no @ x 50 KL/day	-	50 KL/day
e.	Dispensary - 1 no @ 50 KL /day	-	50 KL/day
f.	Health Centre = 1 no. @ 50 KL / day	-	50 KL/day
g.	Religious building - 2 nos @ 10 KL/day	-	20 KL/day
h.	Police post - 1 no. @ 5 KL/day	-	5 KL/day
i.	S.P.O. - 3 Nos @ 5 KL/day	-	15 KL/day
	<b>Total</b>	-	<b>520 KL/day</b>
	Total domestic demand	=	4782.10 KLD
8. a)	Parks 19.10 Acres @ 25 KLD/Acres (approx. 10% area)	=	477.5 KLD
b)	Road side plantation 19.10 x 5 KLD	=	95.50 KLD
	<b>Total</b>	=	<b>5355.10 KLD</b>
	<b>GRAND TOTAL</b>	=	<b>5355.10 KLD</b>
	<b>SAY</b>	=	<b>5660 KLD</b>
9.	Fire demand $100 \sqrt{p} = 100 \times \sqrt{20.381}$	=	450 KL

II. Capacity of Existing Reservoir

Overhead	Underground
900 KL	2200 KL

III. Actual capacity required:

a) Over Head Reservoir

Total daily demand for domestic use  
6 Hours demand 4785 KL x 6 / 24

Say

Capacity of existing OHSR = 900 KL

Balance capacity to be added to UGT =  $1200 - 900 = 300 \text{ KL}$

4226  
4785 KL  
1196.25 KL  
1056  
1200 KL  
1100

b) Actual capacity required for U.G. service Reservoir

Total daily demand 4226  
8 hours capacity 4785 x 8 / 24

Balance capacity of OHSR to be added  
Add 1/3 capacity of fire demand

Total

4785 KL 4226  
1595 KL 1408  
300 KL 200  
150 KL  
2045 KL 1758

Actual capacity provided = 2200 KL

This is more than the required.

- 12
- a) Pocket – a  
No additional sewer line is required for this area.
  - b) Pocket – b  
A sewer line was existing along the periphery of this pocket and this sewer line will be re-laid along 12 wide road.
  - c) Pocket - c  
Depth of existing sewer line is 1.12 and the proposed pocket will be raised to meet this line.
  - d) Pocket – d & d1  
No sewer line required.
  - e) 200mm dia sewer line is already existing at site. Therefore no additional sewer required.

#### VII. STORM WATER DRAINAGE

All the these pockets are very close to the outfall of HUDA drain or ground level higher than the surrounding area, therefore it is very easy to connect to the existing drain.



IV BOREWELLS – PLOTTED DEVELOPMENT, DLF CITY, PHASE IV.

- |    |  |                       |                |
|----|--|-----------------------|----------------|
| a. | Total requirement                                |                       | - 5360 KLD     |
| b. | Working Hours of Tubewell                        | - 16 hours            |                |
| c. | Average discharge from Tubewells                 | 18 KL/Hr.             |                |
| d. | Number of tubewell required                      | $5360 / 16 \times 18$ | - 18.61        |
| e. | Add 10% as stand by                              |                       | - 1.86         |
|    |  |                       | <u>= 20.47</u> |
|    |  |                       | Say = 21 Nos   |
| f. | Actual number of tubewell existing at Phase – IV |                       | - 11 nos       |

HUDA already started supplying of water partially in these area and therefore, these tubewells sufficient to meet the demand.

V. WATER SUPPLY DESIGN- TERMINAL HEAD REQUIREMENT

- I. Minimum Residual pressure required. - 17 Mtr.
- A. Pocket – A:  
It is being an internal pocket water demand has already been taken while main scheme was designed. This pocket helps to avoid dead ends. Terminal head available here is 29.69 Mtr.
- B. Pocket – b & b1:  
By developing this pocket dead end of the distribution net of this area has been eliminated. Terminal head available here is 30.03 against the requirement of 17 Mtr.
- C. Pocket – C:  
At this pocket 12 nos of main plots and 7 nos of EWS plots have introduced alongwith one Nursery School, One police Post. Additional water requirements due to this 55 KL/day. But as a pocket the demand has already been considered while designing main scheme. Available terminal head at this area is 31.31 meter where as required head is 17 metre.
- D. Pocket d,d1 & e.  
Since these pockets are part of bund or drainage belt or roads water demand has been not increased.

VI. SEWERAGE:

These pockets were already with in the colony, and provisions were made while designing the sewerage of main scheme. The depth of all sewer lines allows proper connection.

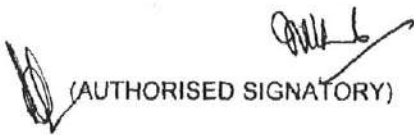
**SERVICE ESTIMATE FOR NEW AREAS IN DLF CITY, PHASE -IV.**

S.NO.	DESCRIPTION	QTY. & RATE	AMOUNT
I.	WATER LINE		
(a)	100mm dia Water line	588 M @ Rs. 625/- m	367500.00
(b)	150mm dia water line	99 M @ Rs. 900/- M	89100.00
(c)	200mm dia. water line	38 M @ Rs. 1200/-	45600.00
II.	SEWER LINE:		
(a)	8" Dia S.W. pipe including manholes	380 M @ Rs. 775/- m	2,94,500.00
(b)	10" Dia S.W. pipe including manholes	88 M @ Rs. 1100/- m	9,68,000.00
(c)	16" Dia S.W. pipe including manholes	145M @ Rs. 1800/m	2,61,000.00
(d)	24" Dia S.W. pipe including manholes	619M @ Rs. 2300/-	14,23,700.00
III.	STORM WATER DRAINAGE:		
(a)	16" DIA RCC pipe	750 M @ Rs. 800/- m	6,00,000.00
(b)	24" dia RCC pipe	194 M @ Rs. 1200/-	2,32,800.00
IV.	ROAD:		
a)	Earth filling / cutting / leveling etc.	4.29475 acre @ Rs. 60,000/- per acre	257685.00
b)	18M wide road with 10M carpeting = 120x10 = 1200 M <sup>2</sup> 12M wide road with 7M carpeting = 106x7 = 742 M <sup>2</sup> 9M wide road with 5 M carpeting = 257 x 5 = 1285 M <sup>2</sup> total 1200 + 742 + 1285 = 3227 M <sup>2</sup>	3227 sq. mtr. @ Rs. 160/- sq. mtr.	516320.00
c)	Kerb and channel	483 Mtr @ Rs. 250/m	1,20,750.00
V.	HORTICULTURE		
a)	Development	4.29475 Acre @ Rs. 50000/- per acre	2,14,737.00
b)	Trees: 1 tree per 12 mtr. length of road	23 trees @ Rs. 250/- per tree	5,750.00
VI.	STREET LIGHTING	4.29475 Acre @ Rs. 50,000 per acre	2,14,737.00
	TOTAL		47,40,999.00
	Add 3% for contingencies		1,42,429.00
	Add 14% for departmental charges		6,63,948.00
	Grand Total		55,47,376.00

SAY 55.47 LACS

(Rupees Fifty Five Lakhs Sixty Seven only)

For DLF UNIVERSAL LIMITED

  
(AUTHORISED SIGNATORY)

*Mr. J. Srinivas  
10 years experience  
responsible for work  
for 2nd 5 years  
etc*

*7076145  
7076145  
23.70k  
9446k*

SUB WORKS NO.VII

MAINTENANCE OF SERVICES

1. Maintenance of public health and B&R services i.e. water supply, sewerage, SWD, Roads, Street Light and Hort. etc.etc. including operation and establishment charges for a period of 10 years as per HUDA norms.

4.30 acres @ Rs. 2.75 lacs per gross acre.

Rs. 11.82 lacs

2. Resurfacing of raods after maintenance of 1st five years i.e. 2nd PH(as per detailed attached).

Rs. 5.99 lacs

3. Resurfacing of raods after maintenance of 10 Years

3400 Sqm. @ Rs. 70/a per sqm.

Rs. 2.38 lacs

Rs. 20.19 lacs

Add 3% contingencies & P.E. Charges.

Rs. 0.60 lacs

Rs. 20.79 lacs

Add 14% Departmental Charges

Rs. 2.91 lacs

Total Rs. 23.70 lacs

c.o. to final abstract of cost

1. 2nd Phase after 5 years of 1st Phase

i) Up to 12 M.

One layer of 100mm thick (53 to 22.4mm gauge) compacted to 75mm thick WBM and aggregate conforming to MOI specification (Table No. 500-9) for roads above 12 M in width and Table No. 400-6, Grading No. 3 for roads up to 12 M in width) with 20mm thick premix carpet with seal coat.

2130 sq. mtr. @ Rs. 160/2 per sq. m. Rs. 3.41 Lacs

ii) Above 12 M.

One layer of 100mm thick (53 to 22.4mm gauge) compacted to 75mm thick BWSG and aggregate conforming to MOI specifications (Table 500-9) for roads above 12M in width and Table No. 400-6 Grading No. 3 for above 12M in width with 25mm thick premix carpet with seal coat.

1300 sqd mtr. @ Rs. 130/2 per sq. m. Rs. 1.69 Lacs

Total Rs. 5.10 Lacs

Add 3% contingencies & P.E. charges Rs. 0.15 Lacs

Rs. 5.25 Lacs

Add 14% departmental charges Rs. 0.74 Lacs

Total Rs. 5.99 Lacs

Water supply	Rs. 589683/-	
Sewerage	Rs. 3622994/-	
S.W.D.	Rs. 1023432/-	
Roads	Rs. 1205533/-	
Street light	Rs. 252144/-	
Horticulture	Rs. 382359/-	
	<u>7076148</u>	
Maintenance of services for ten years say 70-76. Including refreshing of road after 5th year & 2nd year of MR		23.70
	Total	<u>94-46 lacs.</u>

Checked subject to comments in forwarding Letter No. 3312  
Dated 26/4 and notes attached with the Estimate.

*[Signature]*  
6.4.70  
Superintending Engineer (HQ)  
MUDA, Panchkula

*[Signature]*  
Engineer-In-Chief,  
Haryana Urban Development Authority,  
Panchkula-13409.

*[Signature]*  
DTCP