

**7.68125 ACRES AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DDJAY IN THE REVENUE ESTATE OF VILLAGE BAJGHERA, SECTOR-112,
DIST- GURUGRAM, HARYANA**

**DEVELOPED BY PINNE INDUSTRIAL CONSULTANT PVT LTD., ZONEX DEVELOPERS PVT LTD, LOGICAL ESTATE PVT LTD, SHRI BHAGWAN - ZILAY
SINGH, KAPOOR S/O NIHAL SINGH IN COLLABORATION WITH RISHALI DEVELOPERS LLP**

**ESTIMATE FOR PROVIDING WATER SUPPLY, SEWERAGE, STORM WATER DRAINAGE, ROADS, STREET LIGHTING AND HORTICULTURE IN RESPECT
OF 7.68125 ACRES AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DDJAY IN THE REVENUE ESTATE OF VILLAGE BAJGHERA, SECTOR-112,
DIST- GURUGRAM, HARYANA.**

Gurugram is a town and municipal corporation in the Gurugram district of the state of Haryana, India. It is a part of the National Capital Region (NCR) of Delhi. Its proximity to the burgeoning city of Gurgaon has in recent years caused its character and demographics to change dramatically. It has many factories, offices, hotels, IT parks and educational institutes. There are several sightseeing spots around the area, some overlapping with Gurgaon. Sohna is 41 kilometres from Indira Gandhi International Airport and is located on National Highway 48, making it well connected with Delhi, Gurgaon, Rewari, Dharuhera, Jaipur, Ahmedabad and Mumbai.

**PROJECT REPORT/ESTIMATE FOR PROVIDING WATER SUPPLY, SEWERAGE, STORM WATER DRAINAGE, ROADS, STREET LIGHTING AND
HORTICULTURE IN RESPECT OF 7.68125 ACRES AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DDJAY IN THE REVENUE ESTATE OF
VILLAGE BAJGHERA, SECTOR-112, DIST- GURUGRAM, HARYANA.**

The Haryana Government has prepared a master plan for development of Residential/Industrial/ Commercial urban estate Gurugram. Project is developed by M/S Rishali Developers LLP. They have decided to develop the area in this master plan as a plotted residential colony and has named this part as Proposed Affordable residential plotted Colony for an area measuring 7.68125 Acres in the Revenue Estate of Village Bajghera, Sector-112, Dist-Gurugram, Haryana.

Water Supply

1

Source

The source of water supply in this area is from ~~HSVP~~ ^{GMDA} how ever tubewells shall be proposed for Emergency if permission will get from CGWA. At present water supply is from HSVP municipal supply and tanker supply is sweet and fit for human consumption. However in borewell water is available at reasonable depth. The average yield of tubewell with 40-45 ft strainers will be about 20,000 litre per hour. The recharging of underground water table in this belt is stated to be good. However still we shall resort to rain water harvesting system to keep up the recharging system. The number of tubewells required for the above area has been worked out and the tubewells will be bored after the permission from CGWA in tune with growth of demand. The ultimate requirement of tubewells includes provisions of 10% stand by. Ultimately, water shall be supplied to the Project by **HARYANA SHAHARI VIKAS PRADHIKARAN, GURUGRAM, HARYANA.**

G. M. DA

VIMAL BAJAJ
Architect CA/96/19791
938, Sector-14, Gurgaon

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2 Design

The scheme has been designed for approved population of **2304 persons in 7.68125 acres**. The rate of water supply per head per day has been taken as 172.5 litres (150+15%) as per NBC 2016 / HSVP norms. In addition to above necessary provision of water for community area, commercial area, parks etc. have been taken into account for calculating the maximum quantity of water requirement.

3 Pumping Equipments

It has been proposed to install pumping set as described with standby of equal capacity. The provision for standby generating set has been provided in case of any electricity failure. Generator will be provided separately or added to the capacity of main generator.

4 Under Ground Storage

Underground storage tank provision has been made for **240KL** capacity. In 4 compartments, which caters for the raw, domestic as well as for firefighting requirement. The water from fire compartment shall overflow to the raw water compartment so that the water in the fire compartment always remain fresh.

5 Boosting Station

A boosting station having monoblock centrifugal pump set is planned near under ground reservoir to pump water from domestic/ treated under ground water tank to over head water tank provided at individual plot terrace.

6 Distribution System

The distribution system for this development has been designed to supply @ 172.5 litre per head per day @ 2.5 times the average rate of flow on 'Hazen William' formula with C-140. Necessary provision for laying D.I. pipe K-7 conforming to relevant IS standards along with valves and specials has been made in the project. The minimum terminal head at any point will be more than 30.00 meters so that it can serve the stilt and four floors stories construction envisaged in the plan. Minimum pipe dia for distribution is kept as 100 mm dia for domestic water supply.

7 Rising Mains

Rising mains from **HSVP** water main or sector road to water works have also been designed and provision for 100 mm dia D.I. pipe line (dia as/ design) has been made in this estimate.

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8 **Sewerage**

This scheme is designed for sewer connecting to the proposed sewage treatment plant. The sewage system has been marked on the respective plans.

The sewer lines have been designed for 3 times average DWF in relation to the water supply demand assuming that 80% of water supply shall find its way into the proposed sewer. DWC HDPE SN8 pipe sewers have been proposed and designed to run half full. The sewers have been designed on 0.75 M per second minimum velocity i.e. self cleansing velocity Necessary provision for laying DWC HDPE SN8 pipes and manholes etc. has been made in this estimate.

Size/ Shape of Manholes

As per IS 4111:1986 "Circular type of manholes are much stronger than rectangular and arch type manholes thus these type of manholes are preferred over rectangular as well as arch type manholes. However both rectangular and circular type of manholes are proposed to be provided. The brick masonry rectangular manhole is proposed to be provided for depth upto 0.9m.

The brick masonry/ concrete circular manholes are proposed to be provided for all depth exceeding 0.9 m upwards. Circular manholes are straight down in lower portion and slanting on top portion so as to narrow down the top opening equal to internal dia of manhole cover.

Depending on the depth of manhole, brick circular manhole of dia 910, 1220, 1520, 1820 mm dia are proposed to be provided.

9 **Storm Water Drainage**

The storm water is designed to carry 6.25 mm rainfall per hour or 0.123 cusecs per acre as discharge. Also suitable provisions are contemplated in our scheme to ensure better recarguing of underground water table in the area. Underground R.C.C. pipe drain with minimum 400 mm dia are proposed to be provided in this area with circular manhole.

Necessary design statement for entire storm water system has been prepared and attached with estimate.

10 **Rain Water Harvesting**

The main emphasis on recharging the underground aquifers and safe disposal of storm water with flooding the site has been laid in designing/ planning of storm water drainage system. Modular type rain water harvesting are proposed to be provided.

11 **Roads**

The roads are proposed to be provided in the plotted development in such a way that main 9 m wide colony road connects with 24 m sector road. Internal service of the roads of the colony 9m wide provide approach for construction of roads to the plots. Detailed calculation of the various item of works have been made on the basis of the detail design of the roads as approved by Chief Engineer HSVF, Gurugram.



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GMDA

12 Street Lighting

Street lighting system has been designed to provide illumination of 15 to 20 lux on roads. Street lights are provided on 6 m high steel tubular poles are located on one side of 9.0 m wide road. Luminaries with 65 watts LED lights are proposed to be provided for achieving the desired illumination.

13 Horticulture

Provision of road side plantation of trees with tree guards has been made for all roads. The parks shall be developed by providing lawns & ornamental trees with tree guards.

14 Specifications :

The work will be carried out in accordance with the standard specification of P.H. Department as laid down by HSVP & Haryana Government.

15 Rates

Estimate for providing services in this pocket has been prepared on the recent HSVP rates.

16 Cost

The total cost of development in this project including various P.H. and B & R services works out to **Rs. 729.78 Lacs** which includes 3% contingency and PE charges and 49% departmental charges also.

The cost per gross acre for this phase works out to App. **Rs. 95.01 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.

DESIGN CALCULATION

Daily water requirement

Total No. of Plots (General)

Total No. of Plots (EWS)

Population per plot (General)

Population per plot (EWS)

Therefore population (General)

Therefore population(EWS)

Total Population

For 7.68125 Acres

Acres

128

Nos

0

Nos

18

Person/Plot

9

Person/Plot

2304

Persons

0

Persons

2304

Persons



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	SAY	2304	Persons
Total daily Water requirement for plots (150 LPCD + 15%)	@	172.5	LPCD
		Domestic @ 65%	Flushing @ 35%
		258336.00	139104.00
			LPD
	Or Say	258.40	139.20
			KLD (1)
2 Non Residential building water requirement			
a No. of commercial area		1	No.
Daily water requirement	@	32000	Ltrs/Acre/day
Area of commercial		0.3100	Acre
Daily water requirement	@	20800	11200
Therefore daily water requirement		6448.00	3472.00
	Or Say	6.45	lit/day
			KLD
b No. of community center		1	No.
Area of community center		0.7700	Acre
Daily water requirement	@	25000	lit/acre/day
Daily water requirement		12512.5	6737.5
	Or Say	12.51	lit/day
			KLD
c No. of milk booth		1	No.
Daily water requirement	@	1000	lit/acre/day
Daily water requirement		650	350
	Or Say	0.65	lit/day
			KLD
Total 2 (a+b+c)		19.61	10.56
			KLD (2)
3 Area under Parks		0.58	Acre
Daily water requirement	@	25000	lit/acre/day
Therefore daily water requirement			14500
			lit/day



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4		Area under Roads	14.50	KLD
		Daily water requirement		
		Therefore daily water requirement		
	@	1.9315	Acre	
		5000	lit/acre/day	
			9658	lit/day
			9.66	KLD
	Total		24.16	KLD
I	Total daily requirement			
a)	For (1+2)	278.01	149.76	KLD
b)	Under Road+ Parks (3+4)	0.00	24.16	KLD
	Total Daily Requirement	278.01	173.92	KLD
	Or Say	279.00	174.00	KLD
II	Tubewell			
	Assuming working hours of tubewells	16	hours	
	Assuming discharge/hour of each tubewell	20	KL/hours	
	Total domestic water requirement	279	KLD	
	No. of tubewells required	0.87	Nos.	
	Add 10% standby	0.09	Nos.	
	Total	0.96	Nos.	
	Proposed	1.0	Nos.	
So it is proposed 1 nos of tubewell if permission will get from CGWA. The provision of 1 no of tubewell has been made in the estimate because the water demand for flushing, horticulture and the road washing purpose is to be met from re circulated after treatment at STP and ultimate water supply is to be provided by HSP.				
III	Pumping machinery for tubewell			
a)	Gross working load	45.00	m	
b)	Average Fall in S.L	3.05	m	
c)	Depression head	6.10	m	
d)	Friction loss	2.50	m	



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56.65 m
60.00 m
7.41 HP
7.50 HP

BHP = $(20 \times 1000 \times 60) / (60 \times 60 \times 75 \times 0.6)$
With 60% efficiency

It is proposed to install 2 no. Submersible pumping set with a discharge of 20000 ltr./hour (335 lpm) driven with 7.5 HP electric motor.

IV Underground Tank

Daily requirement for domestic use and other except fire fighting

278.01 KLD

Capacity of under ground tank 14 hr storage except fire fighting @ 60% storage requirement

~~166.81~~
278.01 KLD

Say

170.00 - 218 KLD

Total Population in General plots

2304 Person

Total Population in Commercial area

418 Person

Total Population in community centre

1039 Person

18 Person/plot
3 sqm/ Person
3 sqm/ Person

Fire Tank Capacity as $100 \times [\sqrt{(5137)} / 1000] \times 1/3$

64.64 KLD

Say

70.00 KLD

Total

~~240.00~~
348
240.00
350 KLD

It is proposed to provide 1 no. under ground tank of capacity 240 KL which also includes 70 KL capacity for fire fighting.

Tank will have four compartments, Two for fire, one for raw and one for domestic use. The water first enters the fire compartment, then over flows to the domestic water use compartment so that the water in the fire compartment shall remain fresh.

It is proposed to provide under ground tank of following capacity

- Capacity of Fire tank-1
- Capacity of Fire tank-2
- Capacity of Raw tank
- Capacity of Domestic tank

35.00 KLD
35.00 KLD
85.00 KLD
85.00 KLD

For

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V BOOSTING MACHINERY (Drinking water)

UG. Tank

a) Filter Feed Pump

Daily requirement for domestic use

Assuming 10 hours running 1 pumps (with one standby)

Discharge/hour

=	278.01	KLD
=	27.80	KL/HR
	463.35	LPM
Or Say	470.00	LPM

Head of pump

i) Suction lifts

ii) Friction loss in M<main & specials

iii) Clear head

Say

=	0.0	m
=	0.0	m
=	35.0	m
=	35.0	m
=	35.0	m

BHP of motor (470*35)/(60*75*0.6)

=	6.09	HP
Or Say	7.5	HP

b) Domestic Water Transfer Pump

Daily requirement for domestic use

Assuming 6 hours running 2 pumps (with one standby)

Discharge/hour

=	278.01	KLD
=	23.17	KL/HR
	386.13	LPM
Or Say	390.00	LPM

Head of pump

i) Suction lifts

ii) Friction loss in M<main & specials

iii) Clear head

iv) Residual head

Say

=	5.0	m
=	10.0	m
=	15.0	m
=	15.0	m
=	45.0	m
=	45.0	m

For

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BHP of motor $(390 \times 45) / (60 \times 75 \times 0.6)$

=
Or Say

6.50
7.5

HP
HP

VI Gen Set

- Raw Water Transfer Pump
- Domestic Water Transfer Pump
- Flushing Water Transfer Pump
- Tubewell
- Lighting

Nos.

HP
1 7.5
2 7.5
2 5.0
1 7.5
1 10.0

7.5 HP
15 HP
10 HP
7.5 HP
10 HP
50.0 HP

or $50 \times 0.746 \times 1.50$
Say

56.0 KVA
60 KVA

5 Sewage Treatment Plant capacity
Gross domestic + Flushing water requirement/day

427.8

KLD

Sewage flow will be 80% of total load

342.2

KLD

STP Capacity required at 5% extra margin

359.33

KLD

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STP Capacity (Or Say)		360.00	KLD
VII STP Treated Tank			
Daily requirement for flushing, horticulture, road washing	=	173.92	KLD
Capacity of under ground tank 14 hr storage @60% storage	=	104.35	KLD
Say	=	110.00	KLD
VIII BOOSTING MACHINERY (Flushing water)			
STP			
Daily requirement for Flushing & Horticulture use	=	164.26	KLD
Assuming 6 hours running 2 pumps (with one standby)	=	13.69	KL/HR
Discharge/hour	Or Say	228.14	LPM
		230.00	LPM
Head of pump	=	5.0	m
i) Suction lifts	=	10.0	m
ii) Friction loss in M<main & specials	=	15.0	m
iii) Clear head	=	15.0	m
iv) Residual head	=	45.0	m
Say	=	45.0	m
BHP of motor $(230 \times 45) / (60 \times 75 \times 0.6)$	=	3.83	HP
	Or Say	5.0	HP



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FINAL ABSTRACT OF COST

Amount (Lacs.)

For 7.68125 Ac

Sub Work 1- Water Supply

~~126.00~~ 172.76

Sub Work 2- Sewerage

~~114.72~~ 182.53

Sub Work 3- S.W. Drainage

~~84.07~~ 115.91

Sub Work 4- Roads

~~175.32~~ 211.54

Sub Work 5- Street Lighting

~~29.47~~ 29.47

Sub Work 6- Horticulture

~~4.23~~ 5.34

Sub Work 7- Maintenance of services for 10 years including resurfacing of roads after 1st 5 years & II. Phase i.e. 10 years maintenance (as per HSVP norms)

~~195.97~~ 195.97

TOTAL

COST / ACRE

729.78 913.52
~~95.01~~
 = 118.92 per Acre

Checked subject to comments in forwarding letter No. 115290/2022 Dt. 09-12-2022 and notes attached with the estimate

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 Architect C/96/19791
 938, Sector-14, Gurgaon

For ONE DRAWING / FIRE FIGHTING / VENTILATION / ELECTRICAL CONSULTANT

Executive Engineer-EDC (Infra-I) GMDA for roads/lighting/Hort.

Executive Engineer-I Sew. Division No. II GMDA, Gurugram

Executive Engineer-III Drainage Division, GMDA Gurugram

Executive Engineer-I W/S Division, GMDA Gurugram

Chief Engineer, (Infra-II), GMDA Gurugram



WATER SUPPLY HEAD	
Sub Head 1- Head Works	
Sub Head 2- Pumping Machinery	
Sub Head 3- Distribution System	
Sub Head 4- Irrigation scheme	
Total	
Add 3% Contingencies & PE Charge	
Add 49% Departmental Charges	
(CO to final abstract of cost)	

Amount (Lacs.)

For 7.68125 Ac

~~30.80~~ 46.00

~~24.60~~ 27.10

~~25.98~~ 38.55

~~0.69~~ 0.92

~~82.07~~ 112.57

~~2.46~~ 3.37

~~84.53~~ 115.94

~~41.42~~ 58.81

~~125.95~~ 172.76

TOTAL

SAY

~~126.00~~

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Sub Head I

Water Supply
Head Works
Rs. (lakhs)

S. No.	Description	Unit	Qty	Rate	Amount
1	Boring and installing 510 mm i/d tubewells with reverse/direct rotary rig complete with pipe strainer to a depth of about 80m. complete.	Nos.	1	1500000.00	15.00
2	Constructing pump chambers as per standard design of PWD PH/HSP of size 1.50x1.50 m.	Nos.	1	1000000.00	1.00
3	Construction of boosting chambers of suitable size along with under ground tank pumping machinery and generating set etc. complete in all respects.				
	Details of boosting station				
i)	construction of boosting chamber	KL.	350	15.00	5.25
ii)	construction of UG Tank	KL.	240	4500.00	10.80
4	Provision for carriage of material and other unforeseen items	LS			1.00
5	Provision for facilities staff for Maintenance.	LS			3.00
(C.O. to abstract of cost of Sub-work No.I)					
TOTAL					46.00
SAY					46.00

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Sub Work I
Sub Head No. II

Water Supply
Pumping Machinery
Amount (Rs.)
(in Lakhs)

S. No.	Description	Unit	Qty	Rate	
1	Providing and installing electricity driven electro or submersible pumping set capable of delivering about 20 KL water per hour against a total head of 60 M complete with motor and other accessories.	Nos.	1	200000.00	2.00
2	Provision for cheap pressure type chlorination plant complete.			LS	1.00
3	Provision for making foundations & erection of pumping machinery.			LS	1.50 1.00
4	Provision for pipes, valves & specials inside the pump chamber.			LS	3.00 1.00
5	Provision for electric services connection including electric fittings for tubewells chambers complete. Including cost of <i>transfermer</i> .			LS	2.00
6	Providing and installing electricity driven pumping set, capable of delivering 470 LPM of water at 35M head complete in all respects. (For Filter Feed Pump) (7.5 HP)	Nos.	2	140000.00	2.80
7	Providing and installing electricity driven pumping set, capable of delivering 390 LPM of water at 45M head complete in all respects. (7.5 HP) (Domestic Water Transfer Pump)	Nos.	3	140000.00	4.20



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8 Providing and installing electricity driven pumping set, capable of delivering 230 LPM of water at 45M head complete in all respects. (5 HP) (Flushing Water Transfer Pump)

(2 working + 1 standby)

Nos.

3

120000.00

3.60

9 Provision of diesel generator set of each for standby arrangements for booster pump complete with gear head arrangements of following capacities
60 KVA.

LS

6.00

10 Provision for carriage of materials and other unforeseen items.

LS

1.00

(C.O. to abstract of cost of Sub-work No.I)

TOTAL

SAY

27.10

24.60

24.60

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Sub Work I
Sub Head No. III

Water Supply
Distribution System/Rising Main

S. No.	Description	Unit	Qty	Rate	IN LACS
1	Providing, laying, jointing & testing D.I. K-7 pipes including cost of excavation complete as per ISI marked. (For Domestic water supply line)	M	855	1475 1250.00	12.61 10.69
2	Providing, laying, jointing & testing D.I. K-7 pipes including cost of excavation complete as per ISI marked. (For borewell line)	M	10	1475 1250.00	0.15 1.47 0.13
3	Providing, laying, jointing & testing HDPE PE-80 pipes including cost of excavation complete as per ISI marked. (For Flushing water supply line)	M	927	1475 800.00	13.67 7.42
4	Providing and fixing sluice valves including cost brick masonry chambers complete in all respects.	Nos.	6	20000 12000.00 25800	0.10 0.72 1.50
5	Providing, fixing and testing butterfly valves including cost of valve chambers complete in all respects.	Nos.	7	10000.00	0.70
6	Providing and fixing 100 mm dia NRV including cost of valve chambers complete in all respects.	Nos.	1	14000.00	0.14
ii)	80 mm dia	Nos.	1	10000.00	0.10



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7	Providing and fixing air valves and scour valves including cost of valve chambers complete in all respects.	Nos.	4	10000.00 20000/-	0.40 0.80
8	Providing and fixing indicating plates for sluice valve, air valve etc.	Nos.	19	1000.00 2000	0.19 0.38
9	Provision for carriage of material			LS	1.00 ✓
10	Provision for cutting the roads and making to its original condition			LS	1.00 ✓
11	Providing and fixing fire hydrants complete with masonry chambers.	Nos.	10	15000.00 ✓	1.50 ✓
12	Making water supply connection <i>including conn. fee</i>			LS	3.00 1.00 4.00
13	Provision for rising main from H&VP water supply line to UG Tank				1.00
i)	100 mm dia (DI Pipe K-7)	M	80	1250.00 1475	25.98 38.55
(C.O. to abstract of cost of Sub-work No.I)				TOTAL	25.98
				SAY	25.98

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Sub Work I
Sub Head No. IV

Water Supply
Irrigation

S. No.	Description	Unit	Qty	Rate	IN LACS
1	Providing, laying, jointing & testing HDPE PE-80 pipes including cost of excavation complete as per ISI marked.				
i)	25 mm dia	M	50	300.00 500.00	0.150 0.25
ii)	32 mm dia	M	27	450.00	0.122
2	Providing & fixing 20 mm PVC Irrigation hydrant valve with PVC lid complete in all respect including cost of PVC keys	Nos.	9	3500.00 5000	0.32 0.45
3	Provision for carriage of material	LS		10000.00	0.10
(C.O. to abstract of cost of Sub-work No.I)				TOTAL SAY	0.69 0.92

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Sub Work II

Sewerage Scheme

S. No.	Description	Unit	Qty	Rate	in Lacs
1	Providing, lowering, jointing, cutting DWC HDPE SN8 pipes and specials into trenches including cost of excavation, bed concrete lot of manholes complete.				
i)	200 mm i/d	M	356	2270/-	8.08
a)	Average depth upto 1.5 m			1250.00	4.45
b)	Average depth 1.5 m to 4.5 m	M	477	2300/-	7.46
				2290/-	10.97
ii)	250 mm i/d	M	79	2430/-	1.42
a)	Average depth 1.5 m to 4.5 m			1800.00	
2	Provision for lighting, watching and temporary diversion traffic			LS	1.00
3	Provision for timbering & shoring			LS	1.00
4	Provision for cutting of roads and carriage of materials etc. and other unforseen charges			LS	1.00
5	Provision for connection with HSVP <i>UMDA 2 connection Pvc</i>			LS	1.00
6	Providing and installation of STP 360 KL including civil tanks and all electro mechanical works. It also includes flushing tank.	KL	360	25000/-	90.00
				16000.00	57.6
7	Provision for DI K-7 pipe from S.T.P. to HSVP main line (Over flow line)			1475/-	1.47
i)	100 mm dia pipe	M	10	1250.00	0.13
					74.75
					118.94



Add 3% contingencies & PE charges

2.24 3.56
76.99
122.50
60.82
97.73
114.72
114.72
182.53

Add 49% Deptt. Charges

TOTAL
SAY

(C.O. TO FINAL ABSTRACT OF COST SUB WORK - II)

VIMAL BAJAJ
Architect CA/96/19791
938, Sector-14, Gurgaon

For
ONE DESIGN AND CONSULTANTS
FIRE FIGHTING & FIRE ALARM
VENTILATION / ELECTRICAL CONSULTANT



Sub Work III

S. No.

Description

Unit

Qty

Rate

In Lacs

Storm water
drainage

1 Providing, lowering, jointing, cutting RCC NP2 pipes and specials into trenches including cost of excavation cost of manholes, ventilating chambers etc. complete in all respects.

i) 400 mm i/d

a) Average depth upto 1.5 m

b) Average depth 1.5 m to 4.5 m

2 Provision for road gully and drain.

3 Provision for lighting, watching and temporary diversion of traffic.

4 Provision for cutting of roads and carriage of materials etc. and other unforeseen items.

5 Construction of rain water harvesting pit as per details and specification given below and as per attached drawing including, cost of excavation of all ind soil foundation trenches of drain including dressing of sides of ramming and getting out excavation of soil.

6 Provision for connection with HSVP

400 mm i/d (Average depth 1.5 m to 4.5 m)

7 Provision for connection with HSVP line

2950
2500.00
2600.00
3050

M

M

368

570

LS

LS

LS

450000.00

8.5

Nos

3050

2600

LS

10

M

10.85
9.20
14.82
17.38
5.00
5.00

1.00

1.00

36.00
22.50

0.30

0.26

1.00
4.00



VIMAL BAJAJ
Architect CA796/19791
939, Sector-14, Gurgaon

For
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FIRE FIGHTING / FIRE ALARM
VENTILATION / ELECTRICAL CONSULTANT

YMDA-40 Conn Fee

Add 3% contingencies

~~54.78~~ 75.53
~~1.64~~ 2.26

Add 49% Deptt. Charges

~~56.42~~ 77.78
~~27.65~~ 38.11

TOTAL
SAY

~~84.07~~ 115.91
~~84.07~~

(C.O. TO FINAL ABSTRACT OF COST SUB WORK - III)

VIMAL BAJAJ
Architect CA/96/19791
938, Sector-14, Gurgaon

For
ONE DESIGNER/CONSULTANTS
FIRE FIGHTING/FIRE ALARM
VENTILATION/ELECTRICAL CONSULTANT



Sub Work IV

Road Work

S. No.	Description	Unit	Qty	Rate	In Lacs
1	Provision for levelling and earth filling as per site conditions.	Acre	7.68125	175000.00	13.44
2	Construction of road by- i) 150 mm thick W.B.M. stone aggregate layer ii) 100 mm thick PCC <i>Guarding and laying Bituminous road</i> iii) 50 thick sand bed <i>(25 mm GSB, 25 mm WBM, 50 mm DPM, 30 mm BC)</i> iv) 80 mm thick conc. pavers	Sq. M	5191	1500/- 1200.00	77.86 62.29
3	Miscellaneous items				
(a)	Providing for Kerbs & Channels for 7.68125 ACRES	RMT	1730	600.00	10.38
	9M wide road 865 x 2 = 1730 RM				
(b)	Provision of foot path of precast conc. for 7.68125 acres (9m wide road)	Sq. M	2595	1000/- 750.00	2595 19.4625
4	Provision for traffic lighting and guide map	LS		100000.00	1.00
5	Provision for carriage of material	LS		100000.00	1.00
6	Provision for plot indicator	LS		100000.00	1.00



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938, Sector-14, Gurgaon

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FIRE FIGHTING / FIRE ALARM
VENTILATION / ELECTRICAL CONSULTANT

7	Provision for demarcation & unflorescen items	LS	100000.00	1.00
8	Provision for parking & pavement for commercial area @ 50% 1243.04 = 621.52 sqm	sqm	621.52	
	Add 3% contingencies			
	Add 49% Deptt. Charges			
	(C.O. TO FINAL ABSTRACT OF COST SUB WORK - IV)			
	TOTAL SAY			

~~6.81~~
~~4.66~~
~~137.84~~
~~114.24~~
~~3.43~~
~~141.97~~
~~57.66~~
~~475.32~~
~~175.32~~

For
 ONE DESIGN AND CONSULTANTS
 FIRE ALARMING / FIRE ALARM
 VENTILATION / ELECTRICAL CONSULTANT

VIMAL BAJAJ
 Architect CA/96/19791
 938, Sector-14, Gurgaon



Sub Work VI

Horticulture

S. No.	Description	Unit	Qty	Rate	Amount In Lacs
1	Development of lawn area				
a)	Trenching the ordinary soil upto depth of 60 cm. including removal and apcking of servicable material and disposing at the lead of 50m and making upto the tranched area to prope level by filling with earth mixed with manure before and after flooding trenches with water including cost of imported earth and manure.				
b)	Rough dressing of trenched area.				
c)	Grassing with including watering and maintenance of lawns free from weds and fit for moving in rows including for hedges, shrubs and green belt (as per HSVP Norms)	Per acre	0.58	150000.00	0.87
2	Planting of trees with tree guards on roads at 12 m intervals				
	Total length of roads = 865 mtr				
	No of trees @ 12m c/c = $865 \times 2 / 12 = 144.16$ nos				
	say = 145 nos				
	Cost of the tree @ 1300/- each	Nos.	145	1800 1300.00	2.61 1.89
	TOTAL				2.84 2.76
	Add 3% contingencies				0.08 0.10
	Add 49% Deptt. Charges				2.84 1.39
					4.23 5.34
					4.23



TOTAL

SAY

(C.O. TO FINAL ABSTRACT OF COST SUB WORK - VI)

VIMAL BAJAJ
Architect 22/96/19791
938, Sector-14, Gurgaon

For
ONE DESIGNER
FIRE FIGHTING
VENTILATION ELECTRICAL CONSULTANT

Sub Work VII

S. No.

Description

Unit
Acre

Qty

Rate

Maintenance
In Lacs

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 HSVP norms after completion and resurfacing of roads after 10 years or 1st phase.

7.68125

750000.00

57.61

2 Provision for resurfacing and strengthening of roads after 1st five years of 1st phase with 80 mm thick concrete pavers @ 600 / sqm

5191

600.00

31.15

3 Provision for resurfacing and strengthening of road after 10 years of 2nd phase with 80 mm thick concrete pavers @ 600 / sqm

5191

750.00

38.93

Add 3% contingencies

127.69

3.83

Add 49% Deptt. Charges

131.52

64.45

TOTAL

195.97

(C.O. TO FINAL ABSTRACT OF COST SUB WORK - VII)

SAY

195.97

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Architect CA/96/19791
938, Sector-14, Gurgaon

For
ONE DESIGN AND CONSULTANTS
FIRE FIGHTING / FIRE ALARM
VENTILATION / ELECTRICAL CONSULTANT



PROJECT :- 7.68125 ACRES AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DDJAY IN THE REVENUE ESTATE OF VILLAGE BAJGHERA, SECTOR-112, DIST-GURUGRAM, HARYANA

S. No.	Name of Sewer Line		Plots (DDJAY)			Water Requirement for Non Residential Plots			Water Requirement for Residential Plots		
	From	To	No.	Number of Plots	Population @ 18 persons / Plot.	Water Requirement @ 172.5 Ltr/head / day	Other Type of Building	Other Water Requirement	Gross Water Requirement (Load on Line)	Sewage Flow (Self Load on Line)	Sewage Flow (Self Load on Line)
			Nos.		Nos.	lpd.		lpd.	lpd.	lpd.	kld.
			18		18	172.5		Lumpsum		80%	1000
1	S-01	S-03	3		54	9315	COMMERCIAL	8000	17315	13852	13.85
2	S-02	S-03	18		324	55890	PLOTS	0	55890	44712	44.71
3	S-03	S-08	25		450	77625	PLOTS	0	77625	62100	62.10
4	S-04	S-08	10		180	31050	PLOTS	0	31050	24840	24.84
5	S-05	S-07	11		198	34155	PLOTS	0	34155	27324	27.32
6	S-06	S-07	8		144	24840	PLOTS	0	24840	19872	19.87
7	S-07	S-08	6		108	18630	PLOTS	0	18630	14904	14.90
8	S-08	S-10	0		0	0	PLOTS	0	0	0	0.00
9	S-09	S-10	7		126	21735	PLOTS	0	21735	17388	17.39
10	S-10	S-12	10		180	31050	PLOTS	0	31050	24840	24.84
11	S-11	S-12	11		198	34155	PLOTS	0	34155	27324	27.32
12	S-12	S-14	3		54	9315	PLOTS	0	9315	7452	7.45
13	S-13	S-14	16		288	49680	COMMERCIAL +MB	2920	52600	42080	42.08
14	S-14	S-15	0		0	0	COMMUNITY CENTRE	19250	19250	15400	15.40
15	S-15	STP	0		0	0	PLOTS	0	0	0	0.00



For
ONE DESIGN AND CONSULTANTS
FIRE FIGHTING / FIRE SAFETY
VENTILATION / ELECTRICAL CONSULTANT

VIMAL BAJAJ
Architect (C.No. 6/1979)
938, Sector-14, Gurgaon

HYDRAULIC SEWER DESIGN SHEET

S.No.	Line No.		Number of Plots	Population @ 18 persons / Plot.	Water Requirement @ 172.5 Ltr/ head / day	Type of Building	Water Requirement	Gross Water Requirement (Load on Line)	Sewage Flow (Self Load on Line) LPD	Sewage Flow (Self Load on Line) KLD	Previous Load	Progressive Discharge	Progressive Discharge (Average)	Progressive Discharge (Peak)	Infiltration @ 25% Av. Discharge	Total Discharge
	From	To														
			Nos.	Nos.	lps.		lps.		80%	1000	Kld.	Kld.	lps.	lps.	lps.	lps.
1	S-01	S-03	3	54	9315	COMMERCIAL	8000	17315	13852	13.85	0.00	13.85	0.16	0.48	0.04	0.52
2	S-02	S-03	18	324	55890	PLOTS	0	55890	44712	44.71	0.00	44.71	0.52	1.55	0.13	1.68
3	S-03	S-08	25	450	77625	PLOTS	0	77625	62100	62.10	58.56	120.66	1.40	4.19	0.35	4.54
4	S-04	S-08	10	180	31050	PLOTS	0	31050	24840	24.84	0.00	24.84	0.29	0.86	0.07	0.93
5	S-05	S-07	11	198	34155	PLOTS	0	34155	27324	27.32	0.00	27.32	0.32	0.95	0.08	1.03
6	S-06	S-07	8	144	24840	PLOTS	0	24840	19872	19.87	0.00	19.87	0.23	0.69	0.06	0.75
7	S-07	S-08	6	108	18630	PLOTS	0	18630	14904	14.90	47.20	62.10	0.72	2.16	0.18	2.34
8	S-08	S-10	0	0	0	PLOTS	0	0	0	0.00	207.60	207.60	2.40	7.21	0.60	7.81
9	S-09	S-10	7	126	21735	PLOTS	0	21735	17388	17.39	0.00	17.39	0.20	0.60	0.05	0.65
10	S-10	S-12	10	180	31050	PLOTS	0	31050	24840	24.84	224.99	249.83	2.89	8.67	0.72	9.40
11	S-11	S-12	11	198	34155	PLOTS	0	34155	27324	27.32	0.00	27.32	0.32	0.95	0.08	1.03
12	S-12	S-14	3	54	9315	PLOTS	0	9315	7452	7.45	277.16	284.61	3.29	9.88	0.82	10.71
13	S-13	S-14	16	288	49680	COMMERCIAL +MB	2920	52600	42080	42.08	0.00	42.08	0.49	1.46	0.12	1.58
14	S-14	S-15	0	0	0	COMMUNITY CENTRE	19250	19250	15400	15.40	326.69	342.09	3.96	11.88	0.99	12.87
15	S-15	STP	0	0	0	PLOTS	0	0	0	0.00	342.09	342.09	3.96	11.88	0.99	12.87

VIMAL BAJAJ
Architect/CA/96/19791
938, Sector-14, Gurgaon

For
ONE DESIGN AND CONSULTANTS
FIRE FIGHTING / FIRE ALARM
VENTILATION / ELECTRICAL CONSULTANT



PROJECT :- 7.68125 ACRES AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DOJAY IN THE REVENUE ESTATE OF VILLAGE BAJGHERA, SECTOR-112, DIST- GURUGRAM, HARYANA																										
TITLE :- DOMESTIC WATER SUPPLY HYDRAULIC CHART FOR RING LINES.																										
S.NO	Line No		PLOTS (GENERAL)				Water Requirement for Non Residential Plots.					Gross Water Requirement (Load on Line)	Average Demand	Peak Demand @ 2.5 Times	Flow Rate	Length of Pipe	Head Loss Mtr	Total Head Loss	Velocity	Dia of Pipe	Road LVL at start	Hydraulic LVL at start	Head at start	Road LVL at End	Hydraulic LVL at End	Head at End
	From	To	Nos.	Population @ 18 persons / Plot.	Water Requirement @ 172.5 Ltr/head / day	Commercial Area in Acre	TYPE OF BUILDING	Basis of Water Requirement in commercial LPD	OCF	Total Water Requirement in LPD		KLD	KLD				MTR.	MTR.	M/SEC	MM	MTR.	MTR.	MTR.	MTR.		MTR.
			18		112.13																					
1	UGT	D-1	128	2304	258336	0.31	COMMERCIAL	7098	12513	19611	277947	278	695	483	5	0.0111	0.06	1.023	100	205.300	250.300	45.000	210.300	250.245	39.945	39.945
2	D-1	D-2	128	2304	258336	0.31	COMMERCIAL	7098	12513	19611	277947	278	695	483	46	0.0111	0.51	1.023	100	210.300	250.245	39.945	210.300	249.734	39.434	39.434
3	D-2	D-3	16	288	32292	0.06	COMMERCIAL	1898	12513	14411	46703	47	117	81	187	0.0004	0.08	0.172	100	210.300	249.734	39.434	210.300	249.658	39.358	39.358
4	D-2	D-4	101	1818	203843	0.25	COMMERCIAL	5200	0	5200	209043	209	523	363	56	0.0065	0.37	0.770	100	210.300	249.734	39.434	210.300	249.368	39.068	39.068
5	D-4	D-5	8	144	16146	0.00	PLOTS	0	0	0	16146	16	40	28	37	0.0001	0.00	0.059	100	210.300	249.368	39.068	210.300	249.366	39.066	39.066
6	D-4	D-6	77	1386	155405	0.25	COMMERCIAL	5200	0	5200	160605	161	402	279	42	0.0040	0.17	0.591	100	210.300	249.368	39.068	210.300	249.199	38.899	38.899
7	D-6	D-7	10	180	20183	0.00	PLOTS	0	0	0	20183	20	50	35	46	0.0001	0.00	0.074	100	210.300	249.199	38.899	210.300	249.195	38.895	38.895
8	D-6	D-8	42	756	84767	0.25	COMMERCIAL	5200	0	5200	89967	90	225	156	101	0.0014	0.14	0.331	100	210.300	249.199	38.899	210.300	249.061	38.761	38.761
9	D-8	D-9	26	468	52475	0.25	COMMERCIAL	5200	0	5200	57675	58	144	100	37	0.0006	0.02	0.212	100	210.300	249.061	38.761	210.300	249.039	38.739	38.739
10	D-9	D-10	18	324	36329	0.00	PLOTS	0	0	0	36329	36	91	63	73	0.0003	0.02	0.134	100	210.300	249.039	38.739	210.300	249.020	38.720	38.720
11	D-9	D-11	3	54	6055	0.25	COMMERCIAL	5200	0	5200	11255	11	28	20	65	0.0000	0.00	0.041	100	210.300	249.039	38.739	210.300	249.037	38.737	38.737
12	D-6	D-12	25	450	50456	0.00	PLOTS	0	0	0	50456	50	126	88	40	0.0005	0.02	0.186	100	210.300	249.199	38.899	210.300	249.180	38.880	38.880
13	D-12	D-13	11	198	22201	0.00	PLOTS	0	0	0	22201	22	56	39	84	0.0001	0.01	0.082	100	210.300	249.180	38.880	210.300	249.172	38.872	38.872
14	D-12	D-14	9	162	18164	0.00	PLOTS	0	0	0	18164	18	45	32	38	0.0001	0.00	0.067	100	210.300	249.180	38.880	210.300	249.178	38.878	38.878

VIMAL BAJAJ
Architect G/96/9791
938, Sector-14, Gurgaon.

For
ONE DESIGN AND CONSULTANTS
FIRE FIGHTING & PRE-ALARM
VENTILATION ELECTRICAL CONSULTANT



PROJECT :- 7.68126 ACRES AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DDJAY IN THE REVENUE ESTATE OF VILLAGE BAUGHARA, SECTOR-112, DIST- GURUGRAM, HARYANA																										
TITLE :- FLUSHING WATER SUPPLY HYDRAULIC CHART FOR RING LINES.																										
S.NO	Line No		PLOTS (GENERAL)			Water Requirement for Non Residential Plots.					Gross Water Requirement (Load on Line)	Average Demand	Peak Demand @2.5 Times	Flow Rate	Length of Pipe	Head Loss Mtr/ Mtr	Total Head Loss	Velocity	Dia of Pipe	Road LVL at start	Hydraulic LVL at start	Head at start	Road LVL at End	Hydraulic LVL at End	Head at End	
	From	To	Nos.	Population @ 18 persons / Plot.	Water Requirement @ 172.5 Ltr/ head / day	Commercial Area in Acre	TYPE OF BUILDING	Basis of Water Requirement in LPD	OCF	Total Water Requirement in LPD																
				18	60.38																					
1		S TP	F-1	128	2304	139104	0.31	COMMERCIAL	3822	6738	10560	164164	164	410	285	8	0.0109	0.08	0.944	80	205.300	250.300	45.000	210.300	250.218	39.918
2		F-1	F-2	128	2304	139104	0.31	COMMERCIAL	3822	6738	10560	161264	161	403	280	66	0.0106	0.70	0.928	80	210.300	250.218	39.918	210.300	249.521	39.221
3		F-2	F-3	16	288	17388	0.06	COMMERCIAL	1022	0	1022	22760	23	57	40	126	0.0003	0.04	0.131	80	210.300	249.521	39.221	210.300	249.486	39.186
4		F-2	F-4	112	2016	121716	0.25	COMMERCIAL	2800	0	2800	131786	132	329	229	61	0.0073	0.44	0.758	80	210.300	249.521	39.221	210.300	249.078	38.778
5		F-4	F-5	13	234	14128	0.00	PLOTS	0	0	0	17753	18	44	31	46	0.0002	0.01	0.102	80	210.300	249.078	38.778	210.300	249.070	38.770
6		F-4	F-6	99	1782	107588	0.25	COMMERCIAL	0	0	0	110488	110	276	192	57	0.0052	0.30	0.636	80	210.300	249.078	38.778	210.300	248.779	38.479
7		F-6	F-7	10	180	10868	0.00	PLOTS	0	0	0	12318	12	31	21	36	0.0001	0.00	0.071	80	210.300	248.779	38.479	210.300	248.776	38.476
8		F-6	F-8	81	1458	89027	0.25	COMMERCIAL	0	0	0	89477	89	224	155	42	0.0035	0.15	0.515	80	210.300	248.779	38.479	210.300	248.630	38.330
9		F-8	F-9	10	180	10868	0.00	PLOTS	0	0	0	12318	12	31	21	48	0.0001	0.00	0.071	80	210.300	248.630	38.330	210.300	248.626	38.326
10		F-8	F-10	46	828	49991	0.25	COMMERCIAL	0	0	0	51441	51	129	89	101	0.0013	0.13	0.296	80	210.300	248.630	38.330	210.300	248.502	38.202
11		F-10	F-11	25	450	27169	0.25	COMMERCIAL	0	0	0	28619	29	72	50	37	0.0004	0.02	0.165	80	210.300	248.502	38.202	210.300	248.486	38.186
12		F-11	F-12	18	324	19562	0.00	PLOTS	0	0	0	21012	21	53	36	74	0.0002	0.02	0.121	80	210.300	248.486	38.186	210.300	248.468	38.168
13		F-11	F-13	3	54	3260	0.25	COMMERCIAL	0	0	0	4710	5	12	8	64	0.0000	0.00	0.027	80	210.300	248.486	38.186	210.300	248.485	38.185
14		F-8	F-14	25	450	27169	0.00	PLOTS	0	0	0	28619	29	72	50	40	0.0004	0.02	0.165	80	210.300	248.630	38.330	210.300	248.613	38.313
15		F-14	F-15	8	144	8694	0.00	PLOTS	0	0	0	10144	10	25	18	38	0.0001	0.00	0.058	80	210.300	248.613	38.313	210.300	248.611	38.311
16		F-14	F-16	11	198	11954	0.00	PLOTS	0	0	0	13404	13	34	23	84	0.0001	0.01	0.077	80	210.300	248.613	38.313	210.300	248.604	38.304

VIMAL BAJAJ
Architect
938/Sector-14, Gurugram

For
ONE DESIGN AND CONSULTANTS
FIRE FIGHTING / FIRE ALARM
VENTILATION / ELECTRICAL CONSULTANT



PROJECT :- 7.68125 ACRES AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DDJAY IN THE REVENUE ESTATE OF VILLAGE BAUGHARA, SECTOR-112, DIST. GURUGRAM, HARYANA																									
TITLE :- STORM WATER DRAINAGE - HYDRAULIC DESIGN CHART.																									
S.No	Line No.	Length in mtr.	self area in sqmtr.	Self Area (Hec)	previous area in hec.	Total Area (Hec)	Rain Fall mm/hr	Discharge @12.15 lps/Hec	Pipe dia (mm)	Slope (mm) 1 in	Velocity m/sec.	Cap of pipe in lps.	Fall in line mtr.	Road level at Start	Invert Level at Start	Road level at End	Invert Level at End	Manhole Depth			Manhole Type				
																		Depth at Start	Depth at End	Average Depth	No. of Manhole	910 Dia upto 1.67m Type-A	1220 Dia upto 2.29m Type-B	1520 Dia From 2.29 to 4.19m	1820 Dia Above 4.19m
1	R-01	83	2048	0.205	0.000	0.205	6.25	2.49	400	450	0.923	116.07	0.18	210.300	208.900	210.300	208.716	1.40	1.58	1.49	6	6	0	0	0
2	R-02	74	3125	0.313	0.000	0.313	6.25	3.80	400	450	0.923	116.07	0.16	210.300	208.900	210.300	208.737	1.40	1.56	1.48	5	5	0	0	0
3	R-03	138	3956	0.396	0.517	0.913	6.25	11.09	400	450	0.923	116.07	0.31	210.300	208.716	210.300	208.409	1.58	1.89	1.74	10	0	10	0	0
4	R-04	34	1578	0.158	0.000	0.158	6.25	1.92	400	450	0.923	116.07	0.08	210.300	208.900	210.300	208.824	1.40	1.48	1.44	3	3	0	0	0
5	R-05	73	2363	0.236	0.000	0.236	6.25	2.87	400	450	0.923	116.07	0.16	210.300	208.900	210.300	208.738	1.40	1.56	1.48	6	6	0	0	0
6	R-06	32	1573	0.157	0.000	0.157	6.25	1.91	400	450	0.923	116.07	0.07	210.300	208.900	210.300	208.780	1.40	1.52	1.46	2	2	0	0	0
7	R-07	48	1157	0.116	0.394	0.509	6.25	6.19	400	450	0.923	116.07	0.11	210.300	208.738	210.300	208.631	1.56	1.67	1.62	3	3	0	0	0
8	R-08	42	386	0.039	1.580	1.619	6.25	19.67	400	450	0.923	116.07	0.09	210.300	208.409	210.300	208.316	1.89	1.98	1.94	2	0	2	0	0
9	R-09	16	1193	0.119	0.000	0.119	6.25	1.45	400	450	0.923	116.07	0.04	210.300	208.900	210.300	208.864	1.40	1.44	1.42	2	2	0	0	0
10	R-10	80	2407	0.241	1.738	1.979	6.25	24.05	400	450	0.923	116.07	0.18	210.300	208.316	210.300	208.139	1.98	2.16	2.07	5	0	5	0	0
11	R-11	57	3228	0.323	0.000	0.323	6.25	3.92	400	450	0.923	116.07	0.13	210.300	208.900	210.300	208.773	1.40	1.53	1.46	4	4	0	0	0
12	R-12	24	211	0.021	2.301	2.323	6.25	28.22	400	450	0.923	116.07	0.05	210.300	208.139	210.300	208.087	2.16	2.21	2.19	1	0	1	0	0
13	R-13	151	4349	0.435	0.000	0.435	6.25	5.29	400	450	0.923	116.07	0.33	210.300	208.900	210.300	208.566	1.40	1.73	1.57	11	11	0	0	0
14	R-14	88	3349	0.335	2.757	3.092	6.25	37.58	400	450	0.923	116.07	0.20	210.300	208.087	210.300	207.891	2.21	2.41	2.31	6	0	0	6	0

For
ONE DESIGN AND CONSULTANTS
FIRE FIGHTING AND ALARM
VENTILATION / ELECTRICAL CONSULTANT

VIMAL BAJAJ
Architect 996/19791
938, Sector-14, Gurgaon



PROJECT : RISHALI DEVELOPERS LLP- RESIDENTIAL PLOTTED COLONY AT GURGAON HARYANA .

SIZE CATEGORY OF PLOTS

S. No.	Class of City	2 Kanal	1 Kanal	14 Marla	10 Marla	8 Marla	6 Marla	4 Marla	2 Marla	1 Marla
	Feet	10890.04	5445.02	3811.514	2722.51	2178.01	1633.51	1089.00	544.50	272.25
1	A CLASS	40 KW	30 KW	25 KW	20 KW	16 KW	12 KW	10 KW	6 KW	6 KW
2	B CLASS	30 KW	20 KW	20 KW	15 KW	10 KW	8 KW	6 KW	4 KW	4 KW
3	C CLASS	25 KW	20 KW	15 KW	12 KW	8 KW	6 KW	6 KW	2 KW	2 KW

Gurgaon
1 marla=272.251 sqfeet, 1 kanal=20 Marla

Electrical Supply Norms for Residential Sectors of HVPN/DHBNV

a) Upto 5 MVA = Through 11 KV independent feeder from the existing substation of HVPN/DHBNV subject to the maximum of 200 Amps load on 11 KV side of each feeder.

A. b) More than 5 MVA upto 25 MVA = Separate 33/11 KV or 66/11KV Substation shall be Created.

S.NO	PLOT NO	PLOT SIZE IN METER			AREA /PLOT	AREA /PLOT in Marla	NO OF PLOTS	LOAD PER PLOT (KW)	TOTAL CON. LOAD	DIVERSITY FACTOR	TOTAL LOAD(KW)
		FROM-TO	WIDTH	LENGTH							
1	1 TO 4	9.210	11.730	108.033	4.27	4.27	4	12	48	0.4	19.2
2	5 TO 12	7.540	18.440	139.038	5.50	5.50	8	12	96	0.4	38.4
3	12A TO 30	8.340	13.860	115.592	4.57	4.57	18	12	216	0.4	86.4
4	31 TO 34	7.380	16.850	124.353	4.91	4.91	4	12	48	0.4	19.2
5	35	9.060	12.950	117.3270	4.64	4.64	1	12	12	0.4	4.8
6	36 TO 45	8.340	12.950	108.003	4.27	4.27	10	12	120	0.4	48
7	46	8.290	12.950	107.356	4.24	4.24	1	12	12	0.4	4.8
8	47 TO 57	7.060	21.180	149.531	5.91	5.91	11	12	132	0.4	52.8
9	58 TO 61	7.960	18.660	148.534	5.87	5.87	4	12	48	0.4	19.2
10	62 TO 71	8.000	16.340	130.720	5.17	5.17	10	12	120	0.4	48
11	72 TO 76	7.340	13.630	100.044	3.95	3.95	5	12	60	0.4	24
12	77 to 81	7.340	17.340	127.276	5.03	5.03	5	12	60	0.4	24
13	82 TO 84	7.340	16.340	119.936	4.74	4.74	3	12	36	0.4	14.4
14	85 TO 94	8.000	16.340	130.720	5.17	5.17	10	12	120	0.4	48
15	95	8.000	18.700	132.680	5.24	5.24	1	12	12	0.4	4.8
16	96 TO 101	8.000	15.900	127.200	5.03	5.03	6	12	72	0.4	28.8
17	102 TO 104	8.800	17.000	149.600	5.91	5.91	3	12	36	0.4	14.4
18	105	8.800	17.000	146.840	5.80	5.80	1	12	12	0.4	4.8
19	106	10.000	17.000	147.060	5.81	5.81	1	12	12	0.4	4.8
20	107 TO 112	8.000	17.000	136.000	5.38	5.38	6	12	72	0.4	28.8
21	113 TO 115	7.500	20.000	150.000	5.93	5.93	3	12	36	0.4	14.4
22	116	7.260	20.000	137.420	5.43	5.43	1	12	12	0.4	4.8
23	117 TO 123	7.260	20.000	145.200	5.74	5.74	7	12	84	0.4	33.6
24	124 TO 127	8.000	18.700	149.600	5.91	5.91	4	12	48	0.4	19.2
25	128	7.080	18.700	132.396	5.23	5.23	1	12	12	0.4	4.8
TOTAL											614

		TOTAL										614
B.	Utility Load											
	S.No.	Utility Detail				LOAD (HP)	LOAD (KW)	DIVERSITY FACTOR	TOTAL LOAD(KW)			
	1	STP+ETP				60	46	0.6	27.6			
	2	WTP				60	46	0.6	27.6			
	3	STREET LIGHT					10	0.5	5			



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C. Commercial & Other Areas:				
5	Milk Booth	8.0	0.50	4
6	Commercial Centre 1 (1625 Sq.m.)	198.9	0.60	119.3
7	Community (1.0044)x15kw per 2 Acre	15.0	0.50	7.5
Total KW FOR B+C				191.028
GR TOTAL (A+B+C)				805
D. TRAF. Selection				
Running load				805
Power Factor				0.90
Loading Factor				0.80
Total RUNNING LOAD(KVA)				1119
1 No 1250 KVA 11/.433 Transformers are proposed to be installed				
E. DG Selection				
Common running load				191.028
Power Factor				0.80
Loading Factor				0.80
Total RUNNING LOAD(KVA)				298 KVA
1. No of 320 KVA DG is proposed to be installed for Utility load				

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