PEGASUS LAND AND HOUSING PRIVATE LIMITED

CIN: U45201DL2004PTC128799
Registered Address: M-18, Third Floor, Greater Kailash-II (Market), New Delhi-110048
Corporate Office: Building No.80, 1st Floor, Sector-44, Gurugram-122003, Haryana
Email Id: cs@rof.co.in

To,
The Superintending Engineer,
HSVP, Circle -I
Gurugram (HR)

21.07.2022

Subject: Approval of Service plan estimate of our Affordable Group Housing Colony project over an area measuring 5.375 acres in the revenue estate of village-Shikohpur, Sector-78, Gurugram, Haryana- M/s Pegasus Land and Housing Private Limited.

Reference-DTCP License No. 58 of 2022 dated 13.05.2022

Respected Sir,

With reference to the captioned subject, we are submitting herewith five set of service plan estimate in your good office. We have obtained the License from DTCP department vide License No. 58 of 2022 dated 13.05.2022.

We hereby request you to please give us approval of service plan estimate for the said project.

Kindly do the needful and oblige us.

Thanking You,

Yours Truly
For M/sPegasus Land & Housing Pvt. Ltd.

(Authorised Signatory)

22-7-2022

O/o Superintending Engineer HSVP Circle, Gurugram
Diary No.....
Dt.....

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PROJECT REPORT / ESTIMATES FOR PROVIDING INTERNAL SERVICES e.g. WATER SUPPLY, FIRE, SEWERAGE & STORM WATER DRAINAGE ETC. IN RESPECT OF AFFORDABLE GROUP HOUSING COLONY SECTOR-78 GURUGRAM, MANESAR URBAN COMPLEX, HARYANA

Sohna (Gurgram) is located at 28°28'N 77°02'E28.47°N 77.03°E/28.47; 77.03. It has an average elevation of 220 metres (721 ft) Gurgram district, comprising four blocks Pataudi, Sohna, Gurgram and Farrukhnagar, was created on 15 August, 1979.On its north,

AFFORDABLE HOUSING is a residential proposed at Gurgram for development by **PEGASUS LAND AND HOUSING PVT. LTD.**

Water Supply

The source of water supply shall be HUDA water supply connection. It has been proposed to construct undergorund tanks of capacity as per attached detaileds for domestic and other purpose. The underground tanks will be filled up from the riser and then pumped to the overhead water tanks of each tower.

1 **Source**

The source of water supply in this area is tubewells as the underground water is sweet and fit for human consumption, moreover, the water is available at reasonable depth. The average yield of tubewell with 60'–80' strainer will be about 18000 lph 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 system to keep up the recharging system. The number of tubewells required for the above area has been worked out to 2 Nos and the tubewells will be bored in tune with growth of demand to avoid absolence of the tubewells. The ultimate requirement of tubewells includes provision of 10% standby.

2 **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.

3 **Sewerage**

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

The sewer lines have been designed for 3 times average DWR in relation to the water supply demand assuming that 80% fo the domestic water supply shall find its way into the proposed sewer SW pipe sewers have been proposed designed to run half full. The sewers have been designed on 2.50 ft. per second velocity ie. Self cleansing velocity. Necessary provisions for laying SW pipes manholes etc. has been made in this estimate.

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

4 **Storm Water Drainage**

The storm water drain is being designed to carry 25 mm 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 NP2 pipe drain with minimum 400 mm dia is proposed in this area.

5 **Roads**

Cost of road has been taken in the estimate

6 **Street Lighting**

Provision for street lighting on surrounding area has been made.

7 **Horticulture**

Estimates and details of plantation, landscaping, signage etc. has been included

8 **Specifications :**

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	The work will be carried out in accordance with the standard specifications of PH as laid down by the HUDA/Haryana Government.
9	**Rates** Estimates for providing services in this site has been prepared on the recent market rates.
10	**Cost**
	The total cost of development in this Project including various PH & B & R services works out to **Rs. 751.0 lacs** which includes 3% contingency and PE charges and 49% departmental charges also.
	The cost per gross acre for this works out to **Rs. 139.7 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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	Authorised Signatory

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GROUP HOUSING AT SECTOR-78, GURUGRAM (HARYANA)

1 DESIGN CALCULATION

i)	**Daily Domestic Water Requirement**				
a)	**Residential (D.U)**			798	
	Population @ 5 person per unit - DU			5	
	Therefore population (DU)			3990	persons
	Population (Maintenance & Security Personnel)			10	persons
	Total Population			4000	persons
			SAY	**4000**	**persons**
	Water requirement		@	172.5	liter / head / day
				690000.00	lpd
			or	**690.00**	**KLD____(a)**
b)	Anganwadi	0.053955	@	25000	lit/day
	Therefore daily water requirement			1348.89	lit/day
				1.35	KLD ____ (b)
c)	Community center	0.053955			
	Daily water requirement		@	25000	lit/acre
	Therefore daily water requirement			1348.89	lit/day
				1.35	KLD ____ (c)
d)	No. of Convenient Shopping	0.1075			
	Daily water requirement		@	32000	lit/acre
	Therefore daily water requirement			3440	lit/day
				3.44	KLD ____ (d)
ii)	**Total Daily Water Requirement for (a+b+c+d)**			**696.14**	**KLD**
a)	Domestic Water Requirement @	65%		452.49	KLD
			Say	**460.00**	**KLD**
b)	Flushing Water Requirement @	35%		243.65	KLD
			Say	**243.70**	**KLD**
iii)	**Water usage from STP**				
a)	Area under Parks	0.92	acre		
	Daily water requirement		@	25000	lit/acre/day
				22913.09	lit/day
				22.91	KLD
b)	Area under Roads & Open Parking Area				
	Daily water requirement	2.09	acre	5000	lit/acre/day
				10468.21	lit/day
				10.47	KLD
c)	Under Road+ Parks (a+b)		**Total**	33.38	KLD
			Say	**33.40**	**KLD**
iv)	**Total treated water requirement [ii (b) + iii (c)]**			**278.00**	KLD
v)	**Total Daily Requirement [ii (a) + iv]**			**738.00**	**KLD**
			SAY	**738.00**	**KLD**

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2 Tubewell

Assuming working hours of tubewells			14	hours
Assuming discharge/hour of each tubewell			18	KL/hours
Total fresh water demand			**460.00**	**KLD**
No. of tubewells required	460.00	/18/10	1.83	
Add 10% standby			0.18	
		Total	2.01	
		Say	2.10	

So It is proposed 2 No.of tube well if permission will get from CGWA. the provision of 2 nos. of tubewell has been made in the estimate becouse the water demand for flushing, horticulture and the road washing purpose is to be meet from recirculation after treatment at STP and ultimate water supply is to be provided by HSVP

3 Pumping machinery for tubewell

Gross working load		=	70.00	m
Average fall in SL		=	3.05	m
Depression head		=	6.10	m
Friction loss in main		=	2.50	m
		=	81.65	m
	Say	=	**82.00**	m
BHP = 18000x77x1/60x60x75x0.6		=	9.11	BHP
With 60% efficiency	Say		9.20	BHP

It is peoposed to insttal 2 nos. Submersible pumping set with a discharge of 18000 ltrs/hrs driven eith 10 hp electrical motor

4 Domestic Underground Tank

Daily fresh water requirement for domestic use	=	460.00	KL
Capacity of under ground tank 12 hours storage except fire fighting @ 60%	=	276.00	KL
For fire 100 sqrt (P)= 100 sqrt (3.64)	=	200.00	KL
Fire Tank Capacity Proposed As / IS Code 15105 & NBC 2016 (as no. of hydrants are more than 100)	**Say** =	**200.00**	**KL**
	Total	**476.00**	**KL**

It is proposed to provide under ground tank of capacity **470 KL** which also includes **200 KL** capacity for fire fighting.

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

5 STP Underground Tank

Daily fresh water requirement for domestic use	=	278.00	KL
Capacity of Treated water tank 12 hours storage @ 60%	=	166.80	KL
Say	=	167.00	KL

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6	**DOMESTIC WATER PUMPS - LOCATED IN PUMP ROOM**				
a.)	**RAW WATER FILTER FEED PUMP**				
	Daily requirement for domestic use		=	460.00	KL
	Assuming 8 hours running 2 pumps (with one standby)				
	Discharge/hour	460.00 /8 / 1	=	57.50	KL/HR
	Head of pump				
	i) Suction lifts		=	0.0	m
	ii) Friction loss in M<main & specials		=	0.0	m
	iii) Clear head		=	35.0	m
			=	35.0	m
	BHP of motor	57.50 x1000x35/4500x60x0.60		12.4	HP
		SAY	=	**13.00**	**HP**
b.)	**Domestic Water Transfer Pumps**				
	Daily requirement for domestic use overhead tank filling (in two shifts)		=	230.00	KL
	Assuming 6 hours running 2 pumps (with one standby)				
	Discharge/hour	230.00 / 6 / 1	=	38.33	KL/HR
	Head of pump				
	i) Suction lifts		=	0.0	m
	ii) Friction loss in M<main & specials		=	15.0	m
	iii) Clear head		=	45.0	m
	iv) Residual head		=	15.0	m
			=	75.0	m
	BHP of motor	38.33 x1000x55/4500x60x0.60		17.7	HP
		SAY	=	**18.00**	**HP**
6	**FLUSHING WATER PUMPS - LOCATED IN STP**				
	Daily requirement for flushing use (in two shifts)		=	278.00	KL
	Assuming 8 hours running 2 pumps (with one standby)				
	Discharge/hour	278.00 / 8 / 1	=	34.75	KL/HR
	Head of pump				
	i) Suction lifts		=	0.0	m
	ii) Friction loss in M<main & specials		=	15.0	m
	iii) Clear head		=	45.0	m
	iv) Residual head		=	15.0	m
			=	75.0	m
	BHP of motor	34.75 x1000x55/4500x60x0.60		16.1	HP
		SAY	=	**17.00**	**HP**

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7 PUMPS FOR FIRE PROECTION

	Pump Description	Location	Nos.	Discharge	Head	HP
i)	**Diesel Pump**	Pump Room	**2**	**2280**	**95.00**	
ii)	**Hydrant Pump**	Pump Room	**1**	**2280**	**95.00**	**80**
iii)	**Jockey Pump**	Pump Room	**1**	**180**	**95.00**	**10**

	8 Capacity of Gen Set	Nos.	HP			
a.)	Raw Water Transfer Pumps	2	13.0	=	26	HP
b.)	Domestic water transfer pumps	2	18.0	=	36	HP
d.)	Flushing water transfer pumps	2	17.0	=	34	HP
g.)	Fire Pump **(Jockey)**	1	10.0	=	10	HP
h.)	Tubewell	2	9.2	=	18.4	HP
j.)	Lighting			=	25	HP
					149.4	HP
	or	149.4	x0.746x1.50		167.18	KVA
			Say		170	KVA

Requirement of 170 KVA capacity will be added in to the main D.G. set to provide standby supply.

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Estimate for Providing in Internal Development works for Housing for Affordable Group Housing Colony Sector -78, GURUGRAM

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Description		Amount (Lacs.)
Sub Work - I Water Supply		227.10
Sub Work - II Sewerage		117.10
Sub Work - III Storm Water Drainage		66.20
Sub Work - IV Roads & Footpath		231.04
Sub Work - V Street Lighting		20.62
Sub Work - VI - Horticulture		13.74
Sub Work - VII - Maintenance of Services for 10 years including resurfacing of roads after 1st 5 years & II phase i.e. 10 years of maintenance (as per HUDA norms)		66.35
	Total	742.15
	Say	743.00

(RUPEES SEVEN CRORE FIFTY ONE LACS ONLY)

M/S PEGASUS LAND AND HOUSING PVT. LTD. at Gurgoan (Haryana)

Authorized Signatory

SUMMARY OF SUB WORK - I (WATER SUPPLY)

			Amount (Lacs.)
Sub Head - (I) Head Works			51.20
Sub Head - (II) Pumping Machinery			62.40
Sub Head - (III) Distribution System			28.40
Sub Head - (IV) Irrigation Scheme			6.00
Total			**148.00**
Add 3% Contingencies			4.44
			152.44
Add 49% Departmental Charges			74.70
	Total		227.14
(CO to final abstract of cost)		**Say**	**227.10**

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Sub Work I — **Water Supply**
Sub Head No. I — **Head Works**

S. No.	Description	Unit	Qty	Rate	Amount (Rs.) (in Lakhs)	
1	Boring and installing 510 mm i/d tubewells with reverse/direct rotary rig complete with pipe strainer to a depth of about 80 m. complete	Nos.	2	1000000.00	20.00	
2	Constructing pump chambers as per standard design of PWD PH/HUDA of size 1.50x1.50 m	Nos.	2	100000.00	2.00	
3	Construction of boosting chambers of suitable size along with under ground tank of capacity 470 KL pumping machinery and generating set etc. complete in all respects.					
	Details of boosting station					
i)	construction of boosting chamber	Nos.	1	LS	5.00	
ii)	UG tank 470 KL capacity incl. 200 KL for fire fighting in two compartments @ 4500 / KL.	KL	470	4500.00	21.15	
4	Provision for carriage of material and other unforeseen items				1.00	
5	Provision for facilites staff for Maintenance				2.00	
	(C.O. to abstract of cost of Sub-work No.I)				**51.15**	**Lacs**
				Say	**51.20**	**Lacs**

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Sub Work I — **Water Supply**
Sub Head No. II — **Pumping Machinery**

S. No.	Description	Unit	Qty	Rate	Amount (Rs.) (in Lakhs)
1	Providing & installing electricity driven electro or submersible pumping set capable of delivering 18 KL/hrs of water against a total head of 60 m complete with motor and other accessories.	Nos.	2	160000.00	3.20
2	Providing & installing electricity driven pumping set capable of delivering 937.5 LPM of water against a total head of 35 m complete with motor and other accessories (For Filter feed pump - 13 HP)	LS		450000.00	4.50
3	Providing & installing electricity driven pumping set capable of delivering 625.00 LPM of water against a total head of 75 m complete with motor and other accessories (For Domestic - 18 HP)	Nos.	2	300000.00	6.00
4	Providing & installing electricity driven pumping set capable of delivering 568.75 LPM of water against a total head of 75 m complete with motor and other accessories (For Flushing - 16 HP)	Nos.	2	200000.00	4.00
5	Provision for diesel engine generator set each for standby Arrangements for booster pump complete with gear head arrangements of following capacities. 1 No. - 170 KVA	KVA	170	11000.00	18.70
	Providing & installing fire pumps electrical oprated pumps 2280 LPM -1No, Jockey pump 180 LPM-1No, Diesel oprated pumps 2280 LPM -2 Nos. complete with all the accessories suction and delivery header ect.	LS			19.00
7	Provision for diesel engine genset stand bye arrangements for Tubewells	Nos.	1	150000.00	1.50
8	Provision for cheap pressure type chlorination plant complete	LS			1.00
9	Provision for making foundations & erection of pumping machinery	LS			1.00
10	Provision for pipes, valves & specials inside the pump chamber	LS			1.00
11	Provision for electric services connection including electric fittings for tubewells chambers complete	LS			1.50
12	Provision for carriage for materials and other unforeseen items	LS			1.00
	(C.O. to abstract of cost of Sub-work No.I)				**62.40**
				Say	**62.40**

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Sub Work I — **Water Supply**
Sub Head No. III — **Distribution System/Rising Main**

S. No.	Description	Unit	Qty	Rate	Amount (Rs.)
1	Providing, laying, jointing & testing G.I pipes including cost of excavation complete as per ISI marked. (Domestic water supply line)				
iv)	50 mm dia	M	0	650.00	0.00
v)	65 mm dia	M	0	875.00	0.00
vi)	80 mm dia	M	272	1000.00	272000.00
vii)	100 mm dia	M	242	1250.00	302500.00
2	Providing, laying, jointing & testing upvc pipes SH-80 comfirming to IS 4985 including cost of exavation complete as per ISI marked (Flushing water supply line)				
i)	80 mm dia	M	434	800.00	347200.00
ii)	100 mm dia	M	20	1000.00	20000.00
3	Providing, fixing & Testing Ball valves including cost of complete in all respects.				
i)	25 mm dia	Nos.	5	900.00	4500.00
ii)	32 mm dia	Nos.	4	1250.00	5000.00
iii)	40 mm dia	Nos.	4	1500.00	6000.00
3	Providing, fixing & Testing Sluice valves including cost of complete in all respects.				
i)	50 mm i/d	Nos.	2	7500.00	15000.00
ii)	80 mm i/d	Nos.	5	10000.00	50000.00
iii)	100 mm i/d	Nos.	4	12000.00	48000.00
iv)	150 mm i/d	Nos.	0	15000.00	0.00
4	Providing, fixing & Testing Non Return valves (NRV) including cost of complete in all respects.				
i)	100 mm i/d	Nos.	2	14000.00	28000.00
4	Providing and fixing air valves and scour valves including cost of complete in all respects.	Nos.	2	10000.00	20000.00
5	Providing and fixing indicating plates for sluice valve, air valve etc.	Nos.	3	1000.00	3000.00
6	Provision for carriage of material	LS	-	-	100000.00
7	Provision for cutting the roads and making to its original conditions.	LS	-	-	100000.00
8	Making water supply connection.	LS	-	-	100000.00
9	providing and fixing fire fighting hydrant complete with masonary chambers	Nos.	24	15000	360000.00
10	providing laying jointing & testing of DI K-9 pipes including cost of excavation complete as per ISI marked for rising main from tubewells to UG Tank				
i)	100 mm i/d	M	80	950.00	76000.00
ii)	150 mm i/d	M	0	1250.00	0.00

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S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
11	Providing and fixing of heavy class M.S pipe for rising main including cost of fitting complete					
	150mm dia pipe	Mtrs	496	1575.00	781200.00	
12	Providing and fixing for secuerity services Equipment for fire fighting	LS	-	-	200000.00	
	(C.O. to abstract of cost of Sub-work No.I)				**2838400.00**	
				Say	**28.40**	**Lacs**

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S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
	Sub Work I				**Water Supply**	
	Sub Head No. IV				**Irrigation**	
S. No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount**	
1	Providing, laying, jointing & testing uPVC SH-80 pipe line confirming to IS 4985 including cost of Excavation etc. complete in all respect.					
i)	25 mm dia	M	35	300.00	10500.00	
ii)	65 mm dia	M	35	450.00	15750.00	
ii)	80 mm dia	M	700	675.00	472500.00	
2	Providing and fixing 20mm dia Irrigation hydrant valve complete in all respect.	Nos.	23	3500.00	80500.00	
3	Providing & fixing valve 25mm dia	Nos.	23	400.00	9200.00	
7	Provision for carriage of materials etc. and other unforsean charges	LS	-	-	10000.00	
	(C.O. to abstract of cost of Sub-work No.I)			**Total**	**598450.00**	
				Say	**6.00**	**Lacs**

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S. No.	Description	Unit	Qty	Rate	Amount (Rs.)
	Sub Work II				**Sewerage Scheme**
S. No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount (Rs.)**
1	Providing, lowering, jointing, cutting salt glazed stone ware pipes and specials into trenches including cost of excavation, bed concrete lot of manholes complete.				
i)	**200 mm i/d**				
a)	Average depth 0.0 m to 1.5 m	M	595	1250.00	743750.00
a)	Average depth 1.5 m to 4.5 m	M	27	1500.00	40500.00
b)	Average depth 4.5 m to 6.0 m	M	0	1800.00	0.00
i)	**250 mm i/d**				
a)	Average depth 0.0 m to 1.5 m	M	0	1500.00	0.00
a)	Average depth 1.5 m to 4.5 m	M	0	1800.00	0.00
b)	Average depth 4.5 m to 6.0 m	M	0	2250.00	0.00
ii)	**300 mm i/d**				
a)	Average depth 1.5 m to 4.5 m	M	0	1800.00	0.00
b)	Average depth 4.5 m to 6.0 m	M	0	2250.00	0.00
2	Provision for lighting, watching and temporary diversion of traffic	LS	-	-	100000.00
3	Provision for timbering and shuttering	LS	-	-	100000.00
4	Provision for cutting of roads and carriage of materials etc. and other unforsean charges	LS	-	-	100000.00
5	Provision for connection with HSVP / GMDA line	LS	-	-	100000.00
6	Cost of 400 Kld Sewerage Treatment Plant.	Per KLD	400	16000	6400000.00
7	Provision for CI / DI pipe 150 mm dia pipe from STP. To Huda Main Line.	Mtrs	30	1575	47250.00
				Total	**7631500.00**
	Add 3% contingencies				228945
					7860445.00
	Add 49% Deptt. Charges				3851618.05
				Total	**11712063.05**
				Say	**117.10 Lacs**

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S. No.	Description	Unit	Qty	Rate	Amount (Rs.)
	Sub Work - III				**Storm Water Drain**
S. No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount (Rs.)**
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	M	725	2500.00	1812500.00
b)	Average depth 1.5 m to 4.5 m	M	33	2600.00	85800.00
ii)	**500 mm i/d**				
a)	Average depth upto 1.5 m	M	0	3200.00	0.00
b)	Average depth 1.5 m to 4.5 m	M	0	3800.00	0.00
2	Provision for Road Gully & Drain	LS	-	-	500000.00
3	Provision for cutting of roads and carriage of materials etc. and other unforseen items	LS	-	-	100000.00
4	Costruction of rain water harvesting pit of material as per details and spacification given below and as per attached drawing including, cost of excavation of all kind soil foundation trances of drain including dressing of sides of remming and getting out excavtion of soil	Nos	5	250000.00	1250000.00
5	Provision for lighting, watching and temporary diversion of traffic	LS	-	-	500000.00
6	Provision for connection with HSVP / GMDA line				
	400 mm i/d (Average depth upto 1.5 m)	M	25	2600.00	65000.00
				Total	**4313300.00**
	Add 3% contingencies				129399.00
					4442699.00
	Add 49% Deptt. Charges				2176922.51
				Total	**6619621.51**
				SAY	**66.20 Lacs**

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S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
	Sub Work IV				**Road Work**	
S. No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount (Rs.)**	
1	Provision for leveling & earth filling as per site condition	Acres	5.38	175000	940625.00	
	Construction of road by:- i) 200 mm thick GSB ii) 250 mm thick WMM iii) 50 mm thick DBM iv) 25 mm thick BL	Sq. mtr.	4362.0	1200	5234407.20	
	Providing for kerbs & Chennels 6 mtrs wide road (715 x 2 =1430)	M	1430.0	600	858000.00	
	Provision of foot path of precast conc. 6 mtrs wide road (715 x 1.2 x 2 =1716)	Sq. mtr.	1716.0	750	1287000.00	
	Provision for parking arrangement 8472.67sqm.@ 500/sqm	Sq. mtr.	8472.67	750	6354502.50	
5	Provision for Carriage of material	LS.			95000.00	
6	Provision for traffic lighting and guide map/ indicators	LS.			95000.00	
7	Provision for tower indicator	LS.			95000.00	
8	Provision for demarc above and unformation items	LS.			95000.00	
			Total		**15054534.70**	
	Add 3% contingencies				451636.04	
					15506170.74	
	Add 49 % department charges				7598023.66	
				Total	**23104194.40**	
		SAY		**SAY**	**231.04**	**Lacs**

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

One Design & Consultants

S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
	Sub Work V				**Street Lighting**	
S. No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount (Rs.)**	
1	Providing and fixing of Street Lighting on internal roads as per standerd spcification of HVPNL and CFL complete in all respect					
	Provision made on LS cost @ 250000 per acres	Acres	5.375	250000.00	1343750.00	
	Add 3% contingencies				40312.50	
	Total				1384062.50	
	Add 49% Deptt. Charges				678190.625	
			Total		**2062253.00**	
		SAY			**20.62**	**Lacs**
	Sub Work VI				**Horticulture**	
S. No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount (Rs.)**	
1	Development of lawn area a) Trenching the ordinary soil upto depth of 60 cm.Including removal & packing of serviceable material & disposing at a lead of 50 M and making up the trenched area to prope level by filling with earth mixed with manure befor & after flodding trench with water including cost of imported earth & manure.					
	b) Rough dressing of trenched area.					
	c) Grassing including watering & maintenance of lawns free from weeds & fit for mowing in rows including hedges, shrubs & green belts (as per HUDA Norms)	per acre	4.306	150000	645900	
	Planting of tree with tree guards on green at 20 m intervals along with road Road (715 / 12 =59.58 x 2 = 119.16 say - 120 Nos.) Green (715 x 2 / 20 = 71.50 Say = 72 Nos.)					
	(120+72=192) trees @ Rs. 1300/- each	Nos.	192	1300	2,49,600	
					895500.00	
	Add 3% contingency charges				26865.00	
					922365.00	
	Add 49% Deptt. Charges				451958.85	
				Total	**1374323.85**	
				Say	**13.74**	**Lacs**

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S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
	Sub Work VII				**Maintenance Charges & Resurfacing of Roads**	
S. No.	**Description**	**Unit**	**Qty**	**Rate**	**Amount (Rs.)**	
1	Provision for maintenance charges for water supply, sewerage,storm water draienage, roads, street light, horticulture etc. complete including operation & establishments charges as per HUDA norms after completion & resurfacing of roads after 10 years or 1st phase.					
	5.3750 acres @ 5 lacs per acre	per acre	5.375	500000	2687500	
2	Provision for resurfacing & strengthening of road after five years of Ist phase @ 250/- per sqm	Sq. mtr.	4362.0	250	1090501.50	
3	Provision for resurfacing & strengthening of road after ten years of 2nd phase @ 125/- per sqm	Sq. mtr.	4362.0	125	545250.75	
					4323252.25	
	Add 3% contingency & PE charges				129697.5675	
				Total	**4452949.818**	
	Add 49% Departmetal charges				2181945.411	
				Total	**6634895.228**	
			say		**66.35**	**Lacs**

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

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PROJECT : AFFORDABLE GROUP HOUSING COLONY SECTOR-78 GURUGRAM, MANESAR URBAN COMPLEX, HARYANA

TITLE - SEWER QUANTITY SHEET

S.No.	Line No.		Length	Dia of Pipe		Slope	Depth			Excavation	EXCAVATION			
							Start	End	Avg.	Depth	0.0 -1.5	1.5 - 3.0	3.0 - 4.5	4.5 - 6.0
	From	To	(mtr.)	(mm)	(mtr.)		(mtr.)	(mtr.)	(mtr.)	(cum.)	(mtr.)	(mtr.)	(mtr.)	(mtr.)
	START													
1	SW 1	SW 2	10.0	200	0.200	150	0.80	0.87	0.83	6.80	10.0	0.0	0.0	0.0
2	SW 2	SW 3	10.0	200	0.200	150	0.87	0.93	0.90	7.20	10.0	0.0	0.0	0.0
3	SW 3	SW 4	10.0	200	0.200	150	0.93	1.00	0.97	7.60	10.0	0.0	0.0	0.0
4	SW 4	SW 5	7.0	200	0.200	150	1.00	1.05	1.02	5.56	7.0	0.0	0.0	0.0
5	SW 5	SW 6	9.5	200	0.200	150	1.05	1.11	1.08	7.86	9.5	0.0	0.0	0.0
6	SW 6	SW 13	13.5	200	0.200	150	1.11	1.20	1.16	11.79	13.5	0.0	0.0	0.0
	START													
1	SW 7	SW 8	14.0	200	0.200	150	0.80	0.89	0.85	9.63	14.0	0.0	0.0	0.0
2	SW 8	SW 9	15.0	200	0.200	150	0.89	0.99	0.94	11.19	15.0	0.0	0.0	0.0
3	SW 9	SW 10	9.0	200	0.200	150	0.99	1.05	1.02	7.15	9.0	0.0	0.0	0.0
4	SW 10	SW 11	13.0	200	0.200	150	1.05	1.14	1.10	10.89	13.0	0.0	0.0	0.0
5	SW 11	SW 12	8.5	200	0.200	150	1.14	1.20	1.17	7.49	8.5	0.0	0.0	0.0
6	SW 12	SW 13	16.0	200	0.200	150	1.20	1.30	1.25	14.88	16.0	0.0	0.0	0.0
7	SW 13	SW 14	10.5	200	0.200	150	1.30	1.37	1.34	10.32	10.5	0.0	0.0	0.0
8	SW 14	SW 17	18.0	200	0.200	150	1.37	1.49	1.43	18.72	18.0	0.0	0.0	0.0
	START													
1	SW 15	SW 16	9.6	200	0.200	150	0.80	0.86	0.83	6.52	9.6	0.0	0.0	0.0
2	SW 16	SW 17	15.9	200	0.200	150	0.86	0.97	0.92	11.61	15.9	0.0	0.0	0.0
3	SW 17	SW 18	9.0	200	0.200	150	1.49	1.55	1.52	9.85	0.0	9.0	0.0	0.0
4	SW 18	SW 19	13.5	200	0.200	150	1.14	1.23	1.19	12.03	13.5	0.0	0.0	0.0
1	SW 19	SW 20	9.6	200	0.200	150	1.23	1.29	1.26	9.00	9.6	0.0	0.0	0.0
1	SW 20	SW 24	7.0	200	0.200	150	1.29	1.34	1.32	6.79	7.0	0.0	0.0	0.0
	START													
2	SW 21	SW 22	10.0	200	0.200	150	0.80	0.87	0.83	6.80	10.0	0.0	0.0	0.0
3	SW 22	SW 23	10.0	200	0.200	150	0.87	0.93	0.90	7.20	10.0	0.0	0.0	0.0
4	SW 23	SW 24	10.0	200	0.200	150	0.93	1.00	0.97	7.60	10.0	0.0	0.0	0.0
5	SW 24	SW 30	12.0	200	0.200	150	1.34	1.42	1.38	12.10	12.0	0.0	0.0	0.0
	START													
1	SW 25	SW 26	11.0	200	0.200	150	0.80	0.87	0.84	7.50	11.0	0.0	0.0	0.0
2	SW 26	SW 27	13.0	200	0.200	150	0.87	0.96	0.92	9.49	13.0	0.0	0.0	0.0
3	SW 27	SW 28	9.0	200	0.200	150	0.96	1.02	0.99	6.97	9.0	0.0	0.0	0.0
4	SW 28	SW 29	12.0	200	0.200	150	1.02	1.10	1.06	9.79	12.0	0.0	0.0	0.0
5	SW 29	SW 30	6.0	200	0.200	150	1.10	1.14	1.12	5.11	6.0	0.0	0.0	0.0
	START													
1	SW 31	SW 32	8.5	200	0.200	150	0.80	0.86	0.83	5.75	8.5	0.0	0.0	0.0
2	SW 32	SW 33	8.0	200	0.200	150	0.86	0.91	0.88	5.68	8.0	0.0	0.0	0.0
3	SW 33	SW 34	4.5	200	0.200	150	0.91	0.94	0.93	3.31	4.5	0.0	0.0	0.0
4	SW 34	SW 35	10.0	200	0.200	150	0.94	1.01	0.97	7.64	10.0	0.0	0.0	0.0
5	SW 35	SW 39	18.0	200	0.200	150	1.01	1.13	1.07	14.76	18.0	0.0	0.0	0.0
	START													
1	SW 36	SW 37	18.0	200	0.200	150	0.80	0.92	0.86	12.53	18.0	0.0	0.0	0.0
2	SW 37	SW 38	7.0	200	0.200	150	0.92	0.97	0.94	5.22	7.0	0.0	0.0	0.0
3	SW 38	SW 39	13.0	200	0.200	150	0.97	1.05	1.01	10.22	13.0	0.0	0.0	0.0
4	SW 39	SW 40	27.0	200	0.200	150	1.13	1.31	1.22	24.57	27.0	0.0	0.0	0.0
	START													
1	SW 53	SW 52	13.0	200	0.200	150	0.80	0.89	0.84	8.92	13.0	0.0	0.0	0.0
2	SW 52	SW 51	13.5	200	0.200	150	0.89	0.98	0.93	9.98	13.5	0.0	0.0	0.0
3	SW 51	SW 50	13.0	200	0.200	150	0.98	1.06	1.02	10.30	13.0	0.0	0.0	0.0
4	SW 50	SW 49	11.0	200	0.200	150	1.06	1.14	1.10	9.24	11.0	0.0	0.0	0.0
5	SW 49	SW 48	17.0	200	0.200	150	1.14	1.25	1.19	15.23	17.0	0.0	0.0	0.0
6	SW 48	SW 47	19.0	200	0.200	150	1.25	1.38	1.31	18.39	19.0	0.0	0.0	0.0
7	SW 47	SW 46	11.0	200	0.200	150	1.38	1.45	1.41	11.31	11.0	0.0	0.0	0.0
8	SW 46	SW 45	17.5	200	0.200	150	1.45	1.57	1.51	18.99	0.0	17.5	0.0	0.0
	START													
1	SW 44	SW 45	9.5	200	0.200	150	0.80	0.86	0.83	6.45	9.5	0.0	0.0	0.0
2	SW 45	SW 43	11.0	200	0.200	150	0.86	0.94	0.90	7.92	11.0	0.0	0.0	0.0
3	SW 43	SW 42	13.0	200	0.200	150	0.94	1.02	0.98	9.98	13.0	0.0	0.0	0.0
4	SW 42	SW 41	9.0	200	0.200	150	1.02	1.08	1.05	7.31	9.0	0.0	0.0	0.0
5	SW 41	SW 40	12.0	200	0.200	150	1.08	1.16	1.12	10.25	12.0	0.0	0.0	0.0
6	SW 40	SW 30	11.0	200	0.200	150	1.16	1.24	1.20	9.90	11.0	0.0	0.0	0.0
7	SW 30	STP	5.0	200	0.200	150	1.42	1.45	1.44	5.21	5.0	0.0	0.0	0.0
	Total		**622.0**							**515.0**	**595.0**	**27.0**	**0.0**	**0.0**

Pipe in excavation depth					
	(0.0 - 1.5)	(1.5 - 3.0)	(3.0 - 4.5)		(4.5 - 6.0)
200 mm Dia pipe	595.0	27.0	0.0		0.0
250 mm Dia pipe	0.0	0.0	0.0		0.0
300 mm Dia pipe	0.0	0.0	0.0		0.0

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

Pinnacle Architects Pvt. Ltd.
One Design and Consultants

One Design & Consultants

PROJECT : AFFORDABLE GROUP HOUSING COLONY SECTOR-78 GURUGRAM, MANESAR URBAN COMPLEX, HARYANA

TITLE - STORM QUANTITY SHEET

S.No.	Line No.		Length	Dia of Pipe		Slope	Depth			Excavation	EXCAVATION			
							Start	End	Avg.	Depth	0.0 -1.5	1.5 - 3.0	3.0 - 4.5	4.5 - 6.0
	From	To	(mtr.)	(mm)	(mtr.)		(mtr.)	(mtr.)	(mtr.)	(cum.)	(mtr.)	(mtr.)	(mtr.)	(mtr.)
	START													
1	ST 1	ST 2	12.0	400	0.400	400	0.90	0.93	0.92	11.66	12.0	0.0	0.0	0.0
2	ST 2	ST 3	15.0	400	0.400	400	0.93	0.97	0.95	14.99	15.0	0.0	0.0	0.0
3	ST 3	ST 4	13.5	400	0.400	400	0.97	1.00	0.98	13.87	13.5	0.0	0.0	0.0
4	ST 4	ST 5	14.0	400	0.400	400	1.00	1.04	1.02	14.77	14.0	0.0	0.0	0.0
5	ST 5	ST 6	13.0	400	0.400	400	1.04	1.07	1.05	14.07	13.0	0.0	0.0	0.0
6	ST 6	RWH-2	10.0	400	0.400	400	1.07	1.09	1.08	11.05	10.0	0.0	0.0	0.0
7	RWH-2	ST 7	5.0	400	0.400	400	1.09	1.11	1.10	5.60	5.0	0.0	0.0	0.0
8	ST 7	ST 8	13.0	400	0.400	400	1.11	1.14	1.12	14.79	13.0	0.0	0.0	0.0
9	ST 8	ST 9	6.0	400	0.400	400	1.14	1.15	1.15	6.94	6.0	0.0	0.0	0.0
10	ST 9	ST 12	8.0	400	0.400	400	1.15	1.17	1.16	9.37	8.0	0.0	0.0	0.0
	START													
1	ST 40	ST 41	13.0	400	0.400	400	0.90	0.93	0.92	12.65	13.0	0.0	0.0	0.0
2	ST 41	ST 42	13.0	400	0.400	400	0.93	0.97	0.95	12.99	13.0	0.0	0.0	0.0
3	ST 42	ST 43	13.0	400	0.400	400	0.97	1.00	0.98	13.33	13.0	0.0	0.0	0.0
4	ST 43	ST 44	13.0	400	0.400	400	1.00	1.03	1.01	13.66	13.0	0.0	0.0	0.0
5	ST 44	ST 45	13.0	400	0.400	400	1.03	1.06	1.05	14.00	13.0	0.0	0.0	0.0
6	ST 45	ST 46	13.0	400	0.400	400	1.06	1.10	1.08	14.34	13.0	0.0	0.0	0.0
7	ST 46	RWH-3	10.0	400	0.400	400	1.10	1.12	1.11	11.26	10.0	0.0	0.0	0.0
8	RWH-3	ST 10	8.0	400	0.400	400	1.12	1.14	1.13	9.15	8.0	0.0	0.0	0.0
9	ST 10	ST 11	8.0	400	0.400	400	1.14	1.16	1.15	9.28	8.0	0.0	0.0	0.0
10	ST 11	ST 12	8.0	400	0.400	400	1.16	1.18	1.17	9.41	8.0	0.0	0.0	0.0
11	ST 12	ST 13	12.0	400	0.400	400	1.18	1.21	1.20	14.35	12.0	0.0	0.0	0.0
12	ST 13	ST 14	7.5	400	0.400	400	1.21	1.23	1.22	9.12	7.5	0.0	0.0	0.0
13	ST 14	ST 15	7.5	400	0.400	400	1.23	1.25	1.24	9.23	7.5	0.0	0.0	0.0
14	ST 15	ST 16	7.5	400	0.400	400	1.25	1.27	1.26	9.34	7.5	0.0	0.0	0.0
15	ST 16	ST 17	7.5	400	0.400	400	1.27	1.29	1.28	9.45	7.5	0.0	0.0	0.0
16	ST 17	ST 25	7.5	400	0.400	400	1.29	1.30	1.29	9.57	7.5	0.0	0.0	0.0
	START													
1	ST 18	ST 19	13.0	400	0.400	400	0.90	0.93	0.92	12.65	13.0	0.0	0.0	0.0
2	ST 19	ST 20	13.0	400	0.400	400	0.93	0.97	0.95	12.99	13.0	0.0	0.0	0.0
3	ST 20	ST 21	14.0	400	0.400	400	0.97	1.00	0.98	14.36	14.0	0.0	0.0	0.0
4	ST 21	ST 22	8.0	400	0.400	400	1.00	1.02	1.01	8.38	8.0	0.0	0.0	0.0
5	ST 22	ST 23	9.5	400	0.400	400	1.02	1.04	1.03	10.12	9.5	0.0	0.0	0.0
6	ST 23	ST 24	8.0	400	0.400	400	1.04	1.06	1.05	8.66	8.0	0.0	0.0	0.0
7	ST 24	ST 25	12.0	400	0.400	400	1.06	1.09	1.08	13.24	12.0	0.0	0.0	0.0
8	ST 25	RWH-4	10.0	400	0.400	400	1.09	1.12	1.11	11.25	10.0	0.0	0.0	0.0
9	RWH-4	ST 26	5.0	400	0.400	400	1.12	1.13	1.13	5.70	5.0	0.0	0.0	0.0
10	ST 26	EXT	2.0	400	0.400	400	1.13	1.14	1.13	2.29	2.0	0.0	0.0	0.0
	START													
1	ST 27	ST 28	13.0	400	0.400	400	0.90	0.93	0.92	12.65	13.0	0.0	0.0	0.0
2	ST 28	ST 29	12.0	400	0.400	400	0.93	0.96	0.95	11.98	12.0	0.0	0.0	0.0
3	ST 29	ST 30	12.0	400	0.400	400	0.96	0.99	0.98	12.26	12.0	0.0	0.0	0.0
4	ST 30	ST 31	9.0	400	0.400	400	0.99	1.02	1.00	9.39	9.0	0.0	0.0	0.0
5	ST 31	ST 33	7.0	400	0.400	400	1.02	1.03	1.02	7.41	7.0	0.0	0.0	0.0
	START													
1	ST 32	ST 33	17.5	400	0.400	400	0.90	0.94	0.92	17.11	17.5	0.0	0.0	0.0
2	ST 33	ST 34	16.7	400	0.400	400	1.03	1.07	1.05	18.08	16.7	0.0	0.0	0.0
3	ST 34	ST 35	15.0	400	0.400	400	1.07	1.11	1.09	16.72	15.0	0.0	0.0	0.0
4	ST 35	ST 36	13.0	400	0.400	400	1.11	1.14	1.13	14.85	13.0	0.0	0.0	0.0
5	ST 36	ST 37	13.0	400	0.400	400	1.14	1.18	1.16	15.19	13.0	0.0	0.0	0.0
6	ST 37	RWH-1	10.0	400	0.400	400	1.18	1.20	1.19	11.91	10.0	0.0	0.0	0.0
7	RWH-1	ST 38	5.0	400	0.400	400	1.20	1.21	1.21	6.03	5.0	0.0	0.0	0.0
8	ST 38	ST 50	18.0	400	0.400	400	1.21	1.26	1.24	22.13	18.0	0.0	0.0	0.0
	START													
1	ST 46	ST 47	13.0	400	0.400	400	1.12	1.15	1.14	14.94	13.0	0.0	0.0	0.0
2	ST 47	ST 48	12.0	400	0.400	400	1.15	1.18	1.17	14.09	12.0	0.0	0.0	0.0
3	ST 48	ST 49	12.0	400	0.400	400	1.18	1.21	1.20	14.38	12.0	0.0	0.0	0.0
4	ST 49	ST 50	12.0	400	0.400	400	1.21	1.24	1.23	14.66	12.0	0.0	0.0	0.0
5	ST 50	ST 51	8.0	400	0.400	400	1.26	1.28	1.27	10.04	8.0	0.0	0.0	0.0
6	ST 51	ST 52	13.0	400	0.400	400	1.28	1.31	1.30	16.59	13.0	0.0	0.0	0.0
7	ST 52	ST 53	13.0	400	0.400	400	1.31	1.34	1.33	16.93	13.0	0.0	0.0	0.0
8	ST 53	ST 54	13.0	400	0.400	400	1.34	1.38	1.36	17.27	13.0	0.0	0.0	0.0
9	ST 54	ST 59	5.5	400	0.400	400	1.38	1.39	1.38	7.41	5.5	0.0	0.0	0.0
	START													
1	ST 55	ST 56	13.0	400	0.400	400	0.90	0.93	0.92	12.65	13.0	0.0	0.0	0.0
2	ST 56	ST 57	13.0	400	0.400	400	0.93	0.97	0.95	12.99	13.0	0.0	0.0	0.0
3	ST 57	ST 58	13.0	400	0.400	400	0.97	1.00	0.98	13.33	13.0	0.0	0.0	0.0
4	ST 58	ST 59	19.0	400	0.400	400	1.00	1.05	1.02	20.08	19.0	0.0	0.0	0.0
5	ST 59	ST 60	10.0	400	0.400	400	1.39	1.42	1.40	13.62	10.0	0.0	0.0	0.0
6	ST 60	RWH-5	8.0	400	0.400	400	1.42	1.44	1.43	11.04	8.0	0.0	0.0	0.0
7	RWH-5	ST 61	7.0	400	0.400	400	1.44	1.45	1.44	9.77	7.0	0.0	0.0	0.0
8	ST 61	ST 62	13.0	400	0.400	400	1.45	1.49	1.47	18.40	13.0	0.0	0.0	0.0
9	ST 62	ST 63	13.0	400	0.400	400	1.49	1.52	1.50	18.74	0.0	13.0	0.0	0.0
10	ST 63	ST 64	18.0	400	0.400	400	1.52	1.56	1.54	26.50	0.0	18.0	0.0	0.0

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S.No.	Line No.		Length	Dia of Pipe		Slope	Depth			Excavation Depth	EXCAVATION			
							Start	End	Avg.		0.0 -1.5	1.5 - 3.0	3.0 - 4.5	4.5 - 6.0
	From	To	(mtr.)	(mm)	(mtr.)		(mtr.)	(mtr.)	(mtr.)	(cum.)	(mtr.)	(mtr.)	(mtr.)	(mtr.)
11	ST 64	EXT	2.0	400	0.400	400	1.56	1.57	1.57	2.98	0.0	2.0	0.0	0.0
Total			**758.0**							**861.0**	**725.0**	**33.0**	**0.0**	**0.0**

Pipe in excavation depth					
	(0.0 - 1.5)	(1.5 - 3.0)	(3.0 - 4.5)		(4.5 - 6.0)
400 mm Dia pipe	725.0	33.0	0.0		0.0
500 mm Dia pipe	0.0	0.0	0.0		0.0

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PROJECT-AFFORDABLE GROUP HOUSING COLONY SECTOR-78 GURUGRAM, MANESAR URBAN COMPLEX, HARYANA

Summary of Electrical Load

S. No.	Description	No. of Unit	Connected Load (KW)	Diversity	Maximum Demand (KW)	Essential Load
1	Residential					
1.1	Total Flat	798	7980.00	0.50	3990.00	3990.00
2	Lift					
2.1	Lifts 2Nos. Per Plot @ 15 KW Each		180.00	1.00	180.00	180.00
3	Pumps and Water Treatment Plant		60.00	0.70	42.00	42.00
4	STP		30.00	0.70	21.00	21.00
5	External Development		25.00	0.50	12.50	12.50
6	Server / IT Rack/BMS / ELV Load, PA System & Surveillance system, Data, Fire alarm etc.		10.00	1.00	10.00	10.00
	Total		8285.00		4255.50	4255.50
Transformer Capacity						
	Overall Diversity @0.8				3404.4	
Adopting Transformer loading 0.8 and Power factor 0.95						
Transformer Capacity works out to be in KVA			=		4479.47KVA	
Transformer Capacity Selected			=		4Nos. x 1250 kVA	
DG Set Capacity						
Over All Diversity @0.5			=			2127.75
Adopting DG Set loading 0.8 and Power factor 0.8						
DG Set Capacity works out to be in KVA			=			3324.61KVA
DG Capacity Selected			=		1Nos. x 1010 kVA + 2Nos. x1200 kVA	
	Solar Load (KWp-Kilo Watt Peak)				200.00	

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Area statement for METTALIC ROAD								
S.no.	Discription	Type	Number	Dimension		Calculation	Result	UNIT
				Length	Breadth			
Addition								
1	R1	Rectangle	1	108.915	6.000	Length X breadth	653.490	SQ.MT
2	R2	Rectangle	1	111.570	6.000	Length X breadth	669.420	SQ.MT
3	R3	Rectangle	1	75.980	6.000	Length X breadth	455.880	SQ.MT
4	R4	Rectangle	1	136.275	6.000	Length X breadth	817.650	SQ.MT
5	R5	Rectangle	1	24.565	6.000	Length X breadth	147.390	SQ.MT
6	R6	Rectangle	1	55.620	6.000	Length X breadth	333.720	SQ.MT
7	R7	Rectangle	1	29.875	6.000	Length X breadth	179.250	SQ.MT
8	R8	Rectangle	1	36.070	6.000	Length X breadth	216.420	SQ.MT
9	R9	Rectangle	1	82.040	6.000	Length X breadth	492.240	SQ.MT
						Total Addition =	**3965.460**	SQ.MT
						ADD 10 % FOR CURVED ROAD	**396.546**	SQ.MT
						Total Mettalic Road Area (A1)=	**4362.006**	SQ.MT

TOTAL NO.OF APARTMENTS	=	798	
PARKING REQUIRED @0.5 ECS PER DU	=	399	ECS
PARKING REQUIRED BY AREA			
PROPOSED OPEN PARKING AREA	=	10801.09	SQMT
TOTAL NOS. OF PARKING IN OPEN SPACE@23SQ.M / ECS	=	469.61	ECS
	SAY	470	ECS
PROPOSED STILT PARKING AREA			
PROPOSED STILT PARKING	=	106	ECS
TOTAL ECS PROVIDED		576	ECS
PARKING PROVIDED			
TWO WHEELER PARKING REQUIRED @1PARKING PER DU		798	
2WHEELERS PROVIDED ON STILIT		212	NO.S
2 WHEELERS PROVIDED ON OPEN SITE		940	NO.S
TOTAL 2 WHEELERS PROVIDED		1152	NO.S

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HYDRAULIC STATEMENT OF FLUSHING WATER SUPPLY - AFFORDABLE GROUP HOUSING COLONY SECTOR-78 GURUGRAM, MANESAR URBAN COMPLEX, HARYANA

S.no	Line Reference		Unit / plot			Polpulation @ 5 person per plot	Water Requirment @172.5 LPCD	Other Water Requirement i.e Comerical , Community Centre / Anganwadi in LPD	Total Water Requirement	Flushing Water requirement @33% of total water requirement	Average Domestic Water Requirement (Total / (24))	Peak Flow in LPH (Average x 3)	Velocity	Size of the pipe	Unit head Loss	Length in	Loss of head in line (m)			Cummulative	Total head loss
1	2	3	5	6	7	6	7	8	9	10	11	12	13	14	15	16	17	15	19	20	21
	From	To	Self	Previous	Total		(in LPD)	(in LPD)	(in LPD)	(in LPD)	(in LPH)	(in LPH)	(m2/s)	(in mm)	(in M/M)	(m)	SELF	ADD FOR FITTINGS @10% OF PIPE LENGTH	TOTAL		(m)
1	F11	F10	0		0	0	0	2607	2607	1747	73	219	0.01	80	0.0000	10.00	0.000	0.000	0.000	13.479	13.479
1	F10	F9	0		0	0	0		0	0	0	0	0.00	80	0.0000	47.40	0.000	0.000	0.000	12.500	12.500
2	F9	STP	0	595	595	2975	513188		513188	343836	14327	42981	1.52	100	0.0231	19.28	0.445	0.044	0.489	12.989	13.479
3	F8	F9	0	595	595	2975	513188		513188	343836	14327	42981	2.38	80	0.0684	10.50	0.718	0.072	0.790	12.500	12.500
4	F7	F8	141	454	595	2975	513188		513188	343836	14327	42981	2.38	80	0.0684	68.00	4.653	0.465	5.118	11.710	11.710
5	F4	F7	0	454	454	2270	391575		391575	262355	10931	32793	1.81	80	0.0415	40.00	1.658	0.166	1.824	6.591	6.591
6	F6	F4	141	0	141	705	121613		121613	81481	3395	10185	0.56	80	0.0048	68.00	0.323	0.032	0.356	4.411	4.767
7	F5	F6	0	313	313	1565	269963		269963	180875	7536	22608	1.25	80	0.0208	10.50	0.219	0.022	0.240	0.240	0.240
8	F3	F4	157	156	313	1565	269963		269963	180875	7536	22608	1.25	80	0.0208	68.00	1.416	0.142	1.557	2.258	3.815
9	F2	F3	0	156	156	780	134550		134550	90149	3756	11268	0.62	80	0.0057	43.00	0.247	0.025	0.271	0.700	0.700
10	F1	F3	156		156	780	134550		134550	90149	3756	11268	0.62	80	0.0057	68.00	0.390	0.039	0.429	0.429	0.429

LENGTH OF 50MM DIA PIPE	=	0.0	
LENGTH OF 65MM DIA PIPE	=	0.0	
LENGTH OF 80MM DIA PIPE	=	434.0	
LENGTH OF 100MM DIA PIPE	=	20.0	
TOTAL LENGTH OF LOOP	=	**454.0**	
HEIGHT OF BUILDING FROM	=	49.0	MTR
PRESSURE REQUIRED AT	=	15.0	MTR
MAXIMUM HEAD LOSS IN THE	=	13.48	MTR
LOSS IN PLATROOM	=	10.0	MTR
HEAD REQUIRED AT PUMP FOR	=	87.48	
ADDING SAFETY FACTOR 10%	=	96.23	
say	=	**97 MTR**	

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

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HYDRAULIC STATEMENT OF DOMESTIC WATER SUPPLY - AFFORDABLE GROUP HOUSING COLONY SECTOR-78 GURUGRAM, MANESAR URBAN COMPLEX, HARYANA

S.no	Line Reference		Unit / plot			Polpulation @ 5 person per unit	Water Requirment @172.5L PCD	Other Water Requirement i.e Comerical , Community Centre in LPD	Total Water Requirement	Domestic Water requirement @67% of total water requirement	Average Domestic Water Requirement (Total / (24))	Peak Flow in LPH (Average x 3)	Velocity	Size of the pipe	Unit head Loss	Length in	Loss of head in line (m)			Cummulative	Total head loss
1	2	3	5	6	7	6	7	8	9	10	11	12	13	14	15	16	17	15	19	20	21
	From	To	Self	Previous	Total		(in LPD)	(in LPD)	(in LPD)	(in LPD)	(in LPH)	(in LPH)	(m2/s)	(in mm)	(in M/M)	(m)	SELF	ADD FOR FITTINGS @10% OF PIPE LENGTH	TOTAL		(m)
1	D10	UGT	0	595	595	2975	513188		513188	343836	14327	42981	1.52	100	0.0231	10.00	0.231	0.023	0.254	14.774	15.028
2	D11	D12	0	595	595	2975	513188		513188	343836	14327	42981	1.52	100	0.0231	47.40	1.094	0.109	1.203	19.363	20.566
3	D10	D11	0	595	595	2975	513188	2607	515795	345583	14399	43197	1.53	100	0.0233	71.00	1.654	0.165	1.819	16.340	18.159
4	D9	D10	0	595	595	2975	513188		513188	343836	14327	42981	1.52	100	0.0231	9.00	0.208	0.021	0.228	14.292	14.521
5	D8	D9	0	595	595	2975	513188		513188	343836	14327	42981	1.52	100	0.0231	10.50	0.242	0.024	0.267	14.064	14.064
6	D7	D8	141	454	595	2975	513188		513188	343836	14327	42981	2.38	80	0.0684	68.00	4.653	0.465	5.118	13.797	13.797
7	D6	D8	0	454	454	2270	391575		391575	262355	10931	32793	1.16	100	0.0140	40.00	0.559	0.056	0.615	8.679	8.679
8	D5	D6	141	0	141	705	121613		121613	81481	3395	10185	0.56	80	0.0048	68.00	0.323	0.032	0.356	7.708	8.063
9	D4	D6	0	313	313	1565	269963		269963	180875	7536	22608	0.80	100	0.0070	10.50	0.074	0.007	0.081	3.717	3.717
10	D3	D4	157	156	313	1565	269963		269963	180875	7536	22608	1.25	80	0.0208	68.00	1.416	0.142	1.557	2.078	3.635
11	D2	D4	0	156	156	780	134550		134550	90149	3756	11268	0.40	100	0.0019	43.00	0.083	0.008	0.091	0.520	0.520
12	D1	D2	156		156	780	134550		134550	90149	3756	11268	0.62	80	0.0057	68.00	0.390	0.039	0.429	0.429	0.429

LENGTH OF 50MM DIA PIPE	=	0.0
LENGTH OF 65MM DIA PIPE	=	0.0
LENGTH OF 80MM DIA PIPE	=	272.0
LENGTH OF 100MM DIA PIPE	=	242.00
TOTAL LENGTH OF LOOP	=	**514.00**
HEIGHT OF BUILDING FROM	=	49.00 MTR
PRESSURE REQUIRED AT	=	15.00 MTR
MAXIMUM HEAD LOSS IN	=	15.03 MTR
LOSS IN PLATROOM	=	10.00 MTR
HEAD REQUIRED AT PUMP	=	89.03
ADDING SAFETY FACTOR	=	97.93
say	=	**100 MTR**

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

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