GROUP HOUSING SCHEME MEASURING 5.9125 ACRES AT SECTOR-79 GURGAON

ESTIMATE

FOR

PROVIDING WATER SUPPLY, SEWERAGE, STORM WATER DRAINAGE, ROADS, HORTICULTURE, STREET LIGHTING & FIRE SERVICE

IN

GROUP HOUSING SCHEME BEING DEVELOPED

BY

M/S SIGNATURE GLOBAL (INDIA) PVT. LTD.

FEBRUARY 2020

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ESTIMATE FOR PROVIDING EXTERNAL DEVELOPMENT WORK IN GROUP HOUSING SCHEME MEASURING 5.9125 ACRES AT SECTOR-79 GURGAON

1. INTRODUCTION

Gurgaon Town is an important town of Haryana State situated on Delhi – Jaipur Highway at a distance of approximately 30 Kms. from Delhi. Being in the National Capital Region, the town has fast developing tendency and potential. Further it has also started sharing the growing industrial load of Delhi and Faridabad. In order to relieve the growing pressure of population in Delhi, it has been decided by the Haryana Govt. to establish various sectors in Gurgaon. Keeping in view, the above facts, group housing has been planned on total plot area measuring 5.9125 Acres (LIC No. 33 of 2018 dated 26.05.2018), in Revenue Estate of village Naurangpur, Sector-79, Gurgaon.

2. WATER SUPPLY

At present the source of water supply in this area is tubewell as the underground water is potable. Provision of 2 Nos. tubewell has been made with in the boundary limits of this Group Housing for initial stage and the tubewell will be abundant as & when sufficient canal based water supply is provided from HUDA. The installation of tubewell will be as approval from competent authority. It has been proposed to construct 1 no underground tanks of capacity 410 KL, for domestic purposes and 400 KL as static storage for fire fighting purposes. The underground tanks will be filled up from the proposed tubewell and the water will be pumped into the tanks proposed on the terrace of each building.

3. DESIGN

The scheme has been designed for approximately 4260 persons considering 5 persons for each apartment. The rate of water supply has been taken as 172.50 litres per capita per day (lpcd). Besides the above, necessary provisions for water requirement for Community Buildings like Community Centre, Aaganwardi and Commercial Complex, Grassy Lawns and Road side plantations, Road washing etc. have also been taken into consideration.

4. PUMPING EQUIPMENT

It has been proposed to install a pumping station next to underground tank. At pumping station, there would be two pumping systems each comprising two pumps, one working and one standby. The provision for Diesel Generating set as a stand-by source of power in case of any electricity failure has also been made. Provision is also made for chlorination of water before distribution.

5. SEWERAGE SCHEME

The sewerage network of the Group Housing Complex shall be connected to the proposed Sewage Treatment plant (STP). The treated effluent will be used for landscape irrigation. Surplus effluent will be discharged into the sewerage system being planned by HUDA on the Sector Road.

The sewerage system has been designed for 3 times of average DWF. It has been assumed that 75% of domestic water supply shall find its way into the proposed sewer. All the sewer upto 400 mm dia. have been designed to run half-full. Necessary design statement for the entire sewerage system has been prepared and attached. Sewer lines have been designed for a minimum self cleansing velocity of 0.75 M/sec. S.W. pipes will be used for sewer lines. All the manholes and related appurtenances shall be constructed as per standard design.

6. STORM WATER DRAINAGE

The design rainfall intensity has been considered as ¼" per hour for the proposed development. The average co-efficient of run-off has been considered as 0.5 for the proposed development. Pipe drains formed of minimum 400 mm dia R.C.C. NP3 pipe has been proposed for the storm water drainage. Road Gully Chambers will collect the storm water from the surface and discharge into the manholes through 300 mm dia. R.C.C. NP3 pipes. The internal storm water drains shall be connected to the proposed storm water drainage system of the surrounding plotted development, which ultimately gets connected to peripheral departmental storm water drainage system on sector road. The velocity of water in the pipe has been considered as a minimum of 0.60 M/sec. all the pipes are considered as running full. Necessary design statement for the entire storm water drainage system has been prepared and attached.

7. SPECIFICATIONS

The work will be carried out in accordance with the standard specification of P.H. Department as laid down by Haryana Govt. /HUDA.

8. RATE

The estimate has been based on the present market rates with escalation.

9. COST

The total cost of the scheme, including cost of all services works out of **Rs. 504.26 Lacs** including 3% contingencies and 49% Departmental Charges.

REPORT ON DESIGN CALCULATION FOR GROUP HOUSING MEASURING 5.9125 ACRES AT SECTOR-79 GURGAON, HARYANA

A. DAILY REQUIREMENT OF WATER

I. a) APARTMENT BUILDINGS

Total No. of dwelling units	=	852
Population @ 5 person per dwelling unit, Total population	=	852 x 5
	=	**4260 persons**
Total water requirement @ 172.5 lpcd	=	4260 x 172.5
	=	7,34,850 litres/day
	=	**735 KL/Day**

II. COMMUNITY BUILDING AND AAGANWARDI -1 NO. @ 25 KLD = **25 KL/Day**

III. COMMERCIAL CENTER-1 NO. @ 50KLD = **50 KL/Day**

TOTAL DOMESTIC WATER REQUIREMENT = 735 + 25 + 50
= 810 KL/Day

IV. HORTICULTURE REQUIREMENT

Total area of site	=	5.9125 Acres
Total soft area (approx.)	=	1.23 Acres
Total water requirement for horticulture Work @ 25 KL/Acre / Day	=	1.23 x 25
	=	**30.75 KL/Day, Say 31 KL/Day**

V. ROAD WASHING

Total Road area (approx.)	=	0.75 Acres
Water requirement for road washing @ 5 KL/Acre	=	0.75 x 5
	=	**3.75 KL/Day, Say 4 KL/Day**

Hence, total daily requirement	=	I + II + III + IV + V
	=	735 + 25 + 50 + 31 + 4
	=	**845 KL/Day**

Capacity of underground tank
Domestic requirement **= $\frac{\textbf{810 x 12}}{\textbf{24}}$**
= 405 KL

Say = 410 KL

XII. STATIC STORAGE FOR FIRE FIGHTING SYSTEM:

Static storage as per norms of National Building code- 2016

The height of the proposed building is above 60 M in height. Hence, as per National Building Code it falls under category I-c) 5) – Apartment houses above 60 m in height. The required underground static storage of fire reservoir is as follows:

No. of Fire Pump Sets – 1 Set of Multistage Multi-outlet Pumps
Diesel engine standby, Hydrant pump, Sprinkler Pump, Jockey Pumps for Hydrant and Sprinkler with one no. additional Diesel Engine Pump as nos. of Hydrants above 100 nos.

Required Storage = 200 KL x 2
= 400 KL

Total proposed Static Storage for Fire = 400 KL

B. TUBEWELL

Assumed discharge of each tubewell = 18 KL/Hour

Total No. of tubewell required considering 16 hours of pumping every day = $\frac{810}{18 \times 16}$

= 2.813

Add 10% standby = 0.281

Total = 3.094 i.e, 3 Nos.

Provide 3 nos. of tubewell with a discharge Capacity of 18 KL/Hour.

However, as it is expected that the water supply would be made available by HUDA, it is proposed to install only 2 no. tubewell as standby/ makeup source of water.

Expected yield of tubewell	:	18 KL
Total yield per day	:	18 x 2 x 16 = 576 KL
Pumping Machinery	:	
Av Spring level	:	35 M
Av fall in S.L.	:	3 M
Depression head	:	6 M
Friction loss in mains	:	12 M
Total		**56** M

BHP $= \frac{18000 \times 56}{60 \times 60 \times 75 \times 0.60}$ = 6.22 BHP

The nearest higher size of motor available is 7.5 BHP

C. UNDERGROUND TANK

Total daily domestic water requirement = 810 KL
Water Requirement for Fire Fighting = 400 KL

Considering half day storage for daily requirement and full storage for fire fighting requirement, the total storage requirement works out to be

For daily requirement	=	405 KL
For Fire Fighting requirement	=	400 KL
Total	**=**	**805 KL**

It is proposed to provide underground storage tanks at a strategic location with following capacities.

	DOMESTIC STORAGE	STATIC STORAGE FOR FIRE FIGHTING
UGT	410 KL	400 KL

D. Design of Rising Mains for UG Tanks from Colony Supply Main:

Daily requirement	=	810 KL
Requirement @ 1.2 times assuming the reservoir will be filled in 16 hrs.	=	972 KL
Loss of head per 1000 M for 972 KL in 150 MM i/d pipe	=	11.52 M
Length of rising main (From HUDA rising main to UGR)	=	110 M
Add equivalent length for fittings	=	22 M
Total head loss in 132 M	=	1.52 M

E. PUMPING MACHINERY FOR BOOSTING WATER TO OVERHEAD TANK

It is proposed a ring main on the periphery of the Apartment buildings. The details of pumping machinery for buildings is given as below:

I) FOR FRESH WATER SUPPLY:

Pumping Machinery for Apartment Buildings, Commercial Centre, Community Building and Aaganwardi etc.

Daily demand for Apartment Buildings = 8,10,000 litres

Fresh water demand for Apartment Buildings = $2/3^{rd}$ of total domestic water demand
= 5,40,000 litres

i) Pumping rate assuming 8 hours of pumping per day

$$= \frac{5,40,000}{8 \times 60 \times 60}$$

= **18.75 litres per second.**

ii) Pumping head

a) Suction head	=	0.0 M (positive suction)
b) Static head	=	77.0 M
c) Residual head	=	5.0 M
d) Frictional head loss	=	18.0 M
Total	**=**	**100.0 M**

Hence, provide three pumps (2W+1S) with a discharge of 9.38 litres per second at 100.0 M head of each pump

BHP of Motor $= \frac{100.0 \times 9.38}{0.6 \times 0.9 \times 76.04}$

= 22.84

Say = 25 B.H.P

II) FOR RECYCLED WATER SUPPLY FOR FLUSHING:

Pumping Machinery for Apartment Buildings, Commercial Centre, Community Building and Aaganwardi etc.

Daily demand for Apartment Buildings = 8,10,000 litres

Recycled water demand for Apartment Buildings = $1/3^{rd}$ of total domestic water demand
= 2,70,000 litres

iii) Pumping rate assuming 8 hours of pumping per day

$= \frac{2,70,000}{8 \times 60 \times 60}$

= 9.38 litres per second.

iv) Pumping head

a) Suction head	=	0.0 M (positive suction)
b) Static head	=	77.0 M
c) Residual head	=	5.0 M
d) Frictional head loss	=	18.0 M
Total	**=**	**100.0 M**

Hence, provide two pumps (1W+1S) with a discharge of 9.38 litres per second at 100.0 M head of each pump

BHP of Motor $= \frac{100.0 \times 9.38}{0.6 \times 0.9 \times 76.04}$

= 22.84

Say = 25 B.H.P

F. PUMPING MACHINERY FOR FIRE FIGHTING SYSTEM

i) Pumping Machinery — As per norms of National Building Code 2016, the pumping capacity given below:

a) Electric Fire Hydrant Pump - Discharge 2850 LPM with 3.5 Kg/cm^2 pressure available at the terrace of the building - 1 No.

b) Electric Fire Sprinkler Pump - Discharge 2850 LPM with minimum 0.35 Kg/cm^2 pressure available at the farthest point in the uppermost floor - 1 No.

c) Electric Jockey Pump - Discharge 180 LPM with 3.5 Kg/cm^2 pressure available at the terrace of the building - 1 No.

d) Electric Jockey Pump - Discharge 180 LPM with minimum 0.35 Kg/cm^2 pressure available at the farthest point in the uppermost floor - 1 No.

e) Diesel Standby pump - Discharge 2850 LPM with 3.5 Kg/cm^2 pressure available at the terrace of the building - 2 No.

Fire pumps are provided in the pumproom beside the underground reservoir (but away from the blocks) so that always flooded suction is available for the pumps. The pumps are designed to cater for the flow and pressure requirement at any point of the fire fighting system.

ii) Pumping head

a) Height of building (Maximum height of block)	=	77.0 M
b) Depth upto pump room	=	6.0 M
c) Required Minimum Pressure at terrace. (As per NBC)	=	35.0 M
d) Frictional head loss	=	22.0 M
Total	**=**	**140.0 M**
		Say 150 M

Hence, provide one main pump with a discharge of 47.5 litres per second and one jockey pump with a discharge of 3 litres per second at 150.0 M head.

I) BHP of Motor (for main pump) $= \frac{150.0 \times 47.5}{0.6 \times 0.9 \times 76.04}$

$= \mathbf{173.52}$

Say = 180 B.H.P.

And

II) BHP of Motor (for jockey Pump) $= \frac{150.0 \times 3}{0.6 \times 0.9 \times 76.04}$

$= 10.96$

Say = **12.50 B.H.P.**

GROUP HOUSING MEASURING 5.9125 ACRES AT SECTOR-79 GURGAON, HARYANA

FINAL ABSTRACT OF COST

SUB WORK NO. I	WATER SUPPLY	Rs.	236.56	LACS
SUB WORK NO. II	SEWERAGE	Rs.	128.93	LACS
SUB WORK NO. III	STORM WATER DRAIN	Rs.	33.69	LACS
SUB WORK NO. IV	ROAD & FOOTPATHS	Rs.	47.97	LACS
SUB WORK NO. V	STREET LIGHTING	Rs.	6.35	LACS
SUB WORK NO. VI	HORTICULTURE	Rs.	1.62	LACS
SUB WORK NO. VII	MAINTENANCE CHARGES for 10 years including resurfacing of roads after 1st 5 years & 2nd 5 years m/c.(as per HUDA norms)	Rs.	49.14	LACS
		Rs.	**504.26**	**LACS**

Say 504.26 Lacs

Development Cost per Acre = 504.26/ 5.9125 = Rs. 85.29 Lac per Gross Acre

GROUP HOUSING MEASURING 5.9125 ACRES AT SECTOR-79 GURGAON, HARYANA

ABSTRACT OF COST OF SUB-WORK NO. I (WATER SUPPLY)

SUB HEAD NO. I	HEAD WORKS	Rs.	51.30 Lacs
SUB HEAD NO. II	PUMPING MACHINERY	Rs.	63.00 Lacs
SUB HEAD NO. III	DISTRIBUTION SYSTEM FOR FRESH WATER SUPPLY AND FLUSHING	Rs.	14.29 Lacs
SUB HEAD NO. IV	RISING MAIN	Rs.	2.89 Lacs
SUB HEAD NO. V	FIRE RING	Rs.	15.54 Lacs
SUB HEAD NO. VI	RECYCLED DISTRIBUTION SYSTEM FOR IRRIGATION	Rs.	7.12 Lacs
		Rs.	154.14 Lacs
ADD : 3% Contingencies & P.E. Charges		Rs.	4.62 Lacs
		Rs.	158.76 Lacs
ADD : 49% Departmental Charges		Rs.	77.79 Lacs
		Rs.	**236.56 Lacs**

(**TOTAL C.O TO SUMMARY**)

GROUP HOUSING MEASURING 5.9125 ACRES AT SECTOR-79 GURGAON, HARYANA

SUB WORK NO. I **WATER SUPPLY**

SUB HEAD NO. I **HEAD WORKS**

AMOUNT (RS.)

S.No.	Description	Qty.	Unit	Rate	Amount
1	Boring and installing 510 mm i/d tubewells with reverse rotary rig complete with pipe and strainer to depth of about 65 m complete in all respect	2	No.	4,00,000	8,00,000/-
2.	Construction of boundary wall, gate around the tubewells site and water works etc.	2	No.	50,000	1,00,000/-
3.	Provision of footpath hedges and lawns at Water Works / Tubewells site	L.S.			1,00,000/-
4.	Construction of Chowkidar Quarters, completed with P.H. services and electricity fittings etc.	L.S			1,00,000/-
5.	Provision for rising mains, connecting tubewells with water main and Bye-Pass arrangements	L.S.			1,00,000/-
6.	Construction of 1 No. Boosting arrangement and underground tank of total 810 KL capacity	810	KL	3000	24,30,000/-
7.	Boosting Chamber	L.S.			4,00,000/-
8.	Boosting Machinery for **Fresh Water Supply**				
	i) 3 Nos. 9.38 LPS at 100 mtrs head– 25 BHP	3	No.	2,00,000	6,00,000/-
9.	Boosting Machinery for Flushing Water Supply **(Recycled Water Supply)**				
	i) 2 Nos. 9.38 LPS at 100 mtrs head– 25 BHP	2	No.	2,00,000	4,00,000/-
10.	Provision for Carriage for material and other unforeseen items	LS			1,00,000/-
				Rs.	**51,30,000/-**
				Say	**51.30 Lacs**

(C.O. TO ABSTRACT OF COST SUB WORK NO. I)

GROUP HOUSING MEASURING 5.9125 ACRES AT SECTOR-79 GURGAON, HARYANA

SUB WORK NO. I **WATER SUPPLY**

SUB HEAD NO. II **PUMPING MACHINERY**

S.No.	Description	Qty.	Unit	Rate	Amount
1.	Providing and installing electrical driven submersible pumping set capable of delivering about 18 KL water per hour against a total head of 56 mtrs. Complete with motor and other accessories complete in all respects **NOTE:** The power supply to the submersible tubewell pumps and the booster pumps is to be provided from two sources one from the electric substation and another from the standby diesel generators being provided in the Colony for the essential services.	2	No.	2,00,000	4,00,000/-
2.	Provision and installing pumping set 2850 LPM cap. at 150 mtrs head for fire protection and 180 LPM cap at 150 m head as per NBC				
	Electrical driven 2850LPM at 150M head–180HP	2	No	8,00,000	16,00,000/-
	Diesel driven 2850 LPM at 150M head – 180HP	2	No	15,00,000	30,00,000/-
	Electrical driven 180 LPM at 150 M head– 12.5 HP	2	No	2,50,000	5,00,000/-
	Terrace Pump Electrical driven 900 LPM at 35M head over Commercial Block –15HP	1	No	2,00,000	2,00,000/-
3.	Providing for chlorination plant complete in all respect	1	No	1,00,000	1,00,000/-
4.	Provision for making foundations and erection of pumping machinery.	L.S		50,000	50,000/-
5.	Provision for pipes valves and specials inside the pump chamber and boosting chambers	L.S		100,000	1,00,000/-
6.	Provision for electric services connection including electric fittings for tubewells chambers and boosting chamber etc.	L.S.			3,00,000/-
7.	Provision for carriage of materials and other unforseen items.	L.S.			50,000/-
				Rs.	**63,00,000/-**

Say 63.00 Lacs

(C.O. TO ABSTRACT OF COST SUB WORK NO. I)

GROUP HOUSING MEASURING 5.9125 ACRES AT SECTOR-79 GURGAON, HARYANA

SUB WORK NO. I — **WATER SUPPLY**

SUB WORK NO. III — **DISTRIBUTION SYSTEM FOR FRESH WATER SYPPLY AND FLUSHING**

S.No.	Description	Qty.	Unit	Rate	Amount
1.	Providing, laying, jointing and testing C.I./ D.I. lines including cost of excavation, specials etc. complete in all respect C.I. PIPE				
	100 mm i/d	530	M	1200	6,36,000/-
	150 mm i/d	220	M	1575	3,46,500/-
2.	Providing and fixing G.I. pipes complete with G.I. fittings including trenching and refilling etc.				
	40 mm i/d	122	M	360	43,920/-
	50 mm i/d	122	M	400	48,800/-
3.	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end):				
	40 mm i/d	1	No.	600	600/-
	50 mm i/d	1	No.	760	760/-
4.	Providing and fixing sluice including cost of surface boxes & masonary chambers etc. complete				
	100 mm i/d	6	Nos.	10,000	60,000/-
	150 mm i/d	4	Nos.	15,000	60,000/-
5.	Providing and fixing scour valves and including cost of bricks masonary chamber	12	Nos.	10,000	1,20,000/-
6.	Providing and fixing indicating plates for sluice valves and air valves	12	Nos.	1,000	12,000/-
7.	Provision for carriage of material	LS			50,000/-
8.	Provision for cutting of roads & making good to its original conditions	L.S.			50,000/-
					Rs. 14,28,580/-
					Say 14.29 Lacs

(C.O. TO ABSTRACT OF COST SUB WORK NO. I)

GROUP HOUSING MEASURING 5.9125 ACRES AT SECTOR-79 GURGAON, HARYANA

SUB WORK NO. I **WATER SUPPLY**

SUB HEAD NO. IV **RISING MAIN FROM HUDA**

S.No.	Description	Qty.	Unit	Rate	Amount
1.	Providing, laying, jointing and testing C.I. Pipes including cost of excavation complete				
	150 mm i/d	110	M	1575	1,73,250/-
2.	Providing and fixing sluice valves including cost of surface boxes and masonary chambers, indication plates etc. complete				
	150 mm i/d	1	No.	15,000	15,000/-
3.	Providing and fixing indicating plates with sluice valves	1	No.	1,000	1,000/-
4.	Provision for carriage of materials.	L.S.			50,000/-
5.	Provision for cutting of roads and making good of its original conditions	L.S.			50,000/-
				Rs.	**2,89,250/-**

Say Rs. 2.89 Lacs

(C.O. TO ABSTRACT OF COST SUB WORK NO. I)

GROUP HOUSING MEASURING 5.9125 ACRES AT SECTOR-79 GURGAON, HARYANA

SUB WORK NO. I **FIRE RING MAIN**

SUB HEAD NO. V

S.No.	Description	Qty.	Unit	Rate	Amount
1.	Providing, laying, jointing and testing M.S. Pipes including cost of excavation complete				
	100 mm i/d	179	M	1400	2,50,600/-
	150 mm i/d	566	M	1800	10,18,800/-
2.	Providing and fixing fire hydrants with chambers and indication plate	16	No.	10,000	1,60,000/-
3.	Provision for carriage of materials.	L.S.			25,000/-
4.	Provision for fixing sluice valve i.e cost of surface box and masonry chamber complete with indicating plates	L.S.			50,000/-
5.	Provision for cutting of roads and maintaining good to the original cost.	L.S			50,000/-
				Rs.	**15,54,400/-**
					Say Rs. 15.54 Lacs

(C.O. TO ABSTRACT OF COST SUB WORK NO. I)

GROUP HOUSING MEASURING 5.9125 ACRES AT SECTOR-79 GURGAON, HARYANA

SUB WORK NO. I **RECYCLED WATER SUPPLY**

SUB WORK NO. VI **DISTRIBUTION SYSTEM FOR IRRIGATION**

S.No.	Description	Qty.	Unit	Rate	Amount
1.	Providing, laying, jointing and testing HDPE lines including cost of excavation, specials etc. complete in all respect				
	HDPE PIPE				
	63 mm (OD)	807	M	650	5,24,550/-
2.	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end):				
	50 mm i/d	4	No.	760	3,040/-
3.	Providing and fixing QRCV (Quick Release Coupling Valves) with chambers	20	No.	2,000	40,000/-
4.	Providing and fixing scour valves and including cost of bricks masonary chamber	4	No.	10,000	40,000/-
5.	Providing and fixing indicating plates for sluice valves and air valves	4	No.	1,000	4,000/-
6.	Provision for carriage of material	LS			50,000/-
7.	Provision for cutting of roads & making good to its original conditions	L.S.			50,000/-
				Rs.	**7,11,590/-**
					Say Rs. 7.12 Lacs

(C.O. TO ABSTRACT OF COST SUB WORK NO. I)

GROUP HOUSING MEASURING 5.9125 ACRES AT SECTOR-79 GURGAON, HARYANA

SUB WORK NO. II **SEWERAGE (INTERNAL SEWER)**

S.No.	Description	Qty.	Unit	Rate	Amount
1.	Providing, lowering, jointing & cutting salt glazed stone ware pipe and spls. Into trenches including cost of excavation, bed concrete, cost of manholes, etc. complete in all respect.				
	i) 200 mm dia i/d S.W. pipes Av. Depth upto 2 M	338	M	800	2,70,400/-
	ii) 200 mm dia i/d S.W. pipes Av. Depth upto 3 M	352	M	950	3,34,400/-
	iii) 250 mm dia i/d S.W. pipes Av. Depth upto 3.0 M	65	M	1100	71,500/-
	iv) 300 mm dia i/d S.W. pipes Av. Depth upto 3.0 M	23	M	1500	34,500/-
2.	Provision for providing oblique junction etc.	L.S.			40,000/-
3.	Provision for temporary timbering etc.	L.S.			50,000/-
4.	Provision for lighting watching etc.	L.S.			50,000/-
5.	Provision for cutting the road and carriage of materials etc. and other unforeseen charges	L.S.			50,000/-
6.	Provision for 650 KLD STP (including landscape irrigation pump etc.)	L.S.			75,00,000/-
				Rs.	84,00,800/-
	Add 3% Contingencies & P.E. Charges			Rs.	2,52,024/-
				Rs.	86,52,824/-
	Add 49% Departmental Charges			Rs.	42,39,884/-
				Rs.	**128,92,708/-**
				Say	**128.93 Lacs**

(C.O. TO FINAL ABSTRACT OF COST)

GROUP HOUSING MEASURING 5.9125 ACRES AT SECTOR-79 GURGAON, HARYANA

STORM WATER R.C.C. PIPE DRAIN

SUB WORK NO. III **STORM WATER DRAIN**
RCC PIPE DRAIN

S.No.	Description	Qty.	Unit	Rate	Amount
1.	Providing lowering, cutting and jointing salt glazed RCC NP3 pipes and specials into trenches, including cost of excavation, bed concrete cost of manholes etc. complete in all respects				
	a) 400 mm dia i/e R.C.C. Pipe AV. Depth Upto 2 M	731	M	1750	12,79,250/-
2.	Provision for road gullies	L.S.			75,000/-
3.	Rain Water Harvesting Pit for 5.9125 acres @ Rs. 1.00 lac per acre				5,91,250/-
4.	Provision for lighting, watching and temporary diversion	L.S.			1,00,000/-
5.	Provision for cutting of roads and carriage of materials etc. and other unforeseen items	L.S.			1,00,000/-
6.	Provision for making connection with existing system	LS.			50,000/-
				Rs.	21,95,500/-
	Add 3% contingencies & P.E. Charges			Rs.	65,865/-
				Rs.	22,61,365/-
	Add 49% Departmental Charges			Rs.	11,08,069/-
				Rs.	**33,69,434/-**

Say Rs. 33.69 Lacs

(C.O. TO FINAL ABSTRACT OF COST)

GROUP HOUSING MEASURING 5.9125 ACRES AT SECTOR-79 GURGAON, HARYANA

SUB WORK NO. IV **ROADS AND FOOTPATHS**

			AMOUNT (RS.)
1.	Provision for leveling and earth filling as per site conditions		
	5.9125 Acres @ 50000/- per acre	L.S.	Rs. 2,95,625/-
2.	GSB =300 MM stone aggregate 250 mm 50 mm thick…BM….. 20 mm thick M.S.S.. 3030 sq. m. @ Rs. 800/- per sq. m.		Rs. 24,24,000/-
3.	Providing for Kerbs & Channels of C. Conc. 1 : 2 ½ : 5 with base concrete and pointing etc.		
	757 @ Rs. 140/- per meter		Rs. 1,05,980/-
4.	Provision for cement concrete payment 1:2:4 with base concrete 1:8:16 complete in all respects	L.S.	Rs. 1,00,000/-
5.	Provision for Indicator Board, Guide Map & making parking arrangements		Rs. 1,00,000/-
6.	Provision for demarcation burji, carriage of material & unforeseen items		Rs. 1,00,000/-
			Rs. 31,25,605/-
	ADD : 3% Contingencies & P.E. Charges		Rs. 93,768/-
			Rs. 32,19,373/-
	ADD : 49% Departmental Charges		Rs. 15,77,493/-
			Rs. 47,96,866/-

Say Rs. 47.97 Lacs

(C.O. TO FINAL ABSTRACT OF COST)

GROUP HOUSING MEASURING 5.9125 ACRES AT SECTOR-79 GURGAON, HARYANA

SUB WORK NO. V **STREET LIGHTING**

		AMOUNT (RS.)
Providing street lighting with underground on roads as per standard DHBVN Specifications		
Total Area: 5.9125 Acres		
5.9125 acres @ Rs. 70,000/- per acre	Rs.	4,13,875/-
ADD : 3% contingencies & P.E. Charges	Rs.	12,416/-
	Rs.	4,26,291/-
ADD : 49% Departmental Charges	Rs.	2,08,883/-
	Rs.	**6,35,174/-**
	Say	**Rs. 6.35 Lacs**

(C. O. TO FINAL ABSTRACT OF COST)

GROUP HOUSING MEASURING 5.9125 ACRES AT SECTOR-79 GURGAON, HARYANA

ESTIMATE FOR DEVELOPMENT OF LAWNS & PLANTATION OF ROAD SIDE TREES

AMOUNT (RS.)

Sub work No VI plantation and road side trees

Amount in Rs

1) development of lawn areas

a) trenching of ordinary soil up to a depth of 60cms i/c removal and stacking of serviceable material and disposing by spreading and leveling within a lead of 50 m and making up the trench area for proper levels by filling with earth or earth mixed with manure before and after flooding trench with water.i/c cost of imported earth and manure.

b) Rough dressing of turf area.

c) Grassing with "DOOB GRASS" i/c watering and maintenance of lawns for 30 days till the grass forms a thick lawn, free from weeds and fit for moving in row 7.5cm part in either direction.

1.23 acres organized green @ 70,000/acre 86,100/-

2) providing and planting trees along boundary @ 12m interval
total road length =757 m
no of trees = 757/12 = 63trees, Say 65 trees

cost details: -

excavation	= 30/-
manure	= 60/-
tree planting	= 60/-
Tree guard	= 600/-
Total	**= 750/-**

65 trees @ 300 /tree 19,500/-

Total 1,05,600/-

Add 3% contingencies and PH charges 3,168/-

Total 1,08,768/-

Add 49% departmental charges price
Escalation and other unforeseen charges 53,296/-

Grand total **1,62,064/-**

Say Rs. 1.62 Lacs

(C.O. TO FINAL ABSTRACT OF COST)

GROUP HOUSING MEASURING 5.9125 ACRES AT SECTOR-79 GURGAON, HARYANA

SUB WORK NO. VII **MAINTENANCE OF SERVICES**

			AMOUNT (RS.)
1.	Provision for maintenance charges for water supply, sewerage, drainage, roads, street light, horti-culture etc. complete including operation and establishment charges as per HUDA norms after completion		
	5.9125 acres @ Rs. 3,75,000/- per acre	Rs.	22,17,188/-
2.	Provision for resurfacing of roads after five years of Ist Phase		
	3030 sq. m. @ Rs. 200/- per sq.m.	Rs.	6,06,000/-
3.	IInd Phase after five years of Ist Phase		
	One layer of 10mm thick 53 to 22.4 mm guage complete of 75 mm thick WBM specification and aggregate to MOT specification, Table 500-9 and Table 400-6, Grading Number 3 with 25 mm thick pre-mix carpet.		
	3030 sq. m. @ Rs. 125/- per sq. m.	Rs.	3,78,750/-
		Rs.	32,01,938/-
	Add : Contingencies @ 3%	Rs.	96,058/-
		Rs.	32,97,996/-
	Add : Departmental Charges @ 49%	Rs.	16,16,018/-
		Rs.	**49,14,014/-**
			Say 49.14 Lacs

(C.O. TO FINAL ABSTRACT OF COST)

GROUP HOUSING MEASURING 5.9125 ACRES AT SECTOR-79 GURGAON, HARYANA

SUBHEAD : BASIS FOR STP CAPACITY

1.0 DAILY REQUIREMENT OF WATER

I. a) APARTMENT BUILDINGS

Total No. of dwelling units = 852

Population @ 5 person per dwelling unit,
Total population = 852 x 5
= **4260 persons**

Total water requirement @ 172.5 lpcd = 4260 x 172.5
= 7,34,850 litres/day
= **735 KL/Day**

II. COMMUNITY BUILDING AND AAGANWARDI -1 NO. @ 25 KLD = 25 KL/Day

III. COMMERCIAL CENTER-1 NO. @ 50KLD
= 50 KL/Day

TOTAL DOMESTIC WATER REQUIREMENT = 735 + 25 + 50
= 810 KL/Day

2.0 PROPOSED CAPACITY OF SEWAGE TREATMENT PLANT

Quantum of water finding its way into the sewer @80% of water consumption
= 810KLD x 0.80
= 648KLD

It is proposed to provide a sewage treatment plant capable of treating **650 KLD** of raw sewage per day.

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PROJECT : GROUP HOUSING SCHEME MEASURING 5.9125 ACRES IN SECTOR 79, GURGAON

SUBHEAD : WATER SUPPLY SCHEME

HYDRAULIC STATEMENT OF RECYCLED (FLUSHING) WATER SUPPLY

Sl. No.	Line Referances	Nos. Of Dwelling Unit			Total Population @ 5 Persons per Dwelling Unit & EWS and 2 persons per service	Daily Water Requirement @ 172.5 Ltrs. Per Person Per Day (KLD)	REQUIREMENT OF Community Building and Commercial (KLD)	TOTAL WATER REQUIREMENT (KLD)	TOTAL RECYCLED (FLUSHING) REQUIREMENT (1/3RD OF Total Water Requirement. (KLD)	Peak Water Requirement @ 3 Times Of Daily Demand (KLD)	Size Of the Pipe (mm)	Loss Of Head in M. in 1000 M	Length (M)	Loss Of Head in Line (M)	Formation Level At Lower End	Hydraulic Level		Head At Lower End (M)
		Self (Nos.)	Branch (Nos.)	Total (Nos.)												Upper End	Lower End	
1.	3 - 1	0 Comm.		0 Comm.	0	0.00	50.0	50.0	16.67	50.0	40	13.8547	122	1.69	100.40	193.79	192.10	91.70
2.	3 - 2	271	0	271	1355	233.74	0.0	233.7	77.91	233.7	100	2.7914	65	0.18	100.30	193.79	193.61	93.31
3.	5 - 3	207	271 Comm.	478 Comm.	2390	412.3	50.0	462.3	154.09	462.3	100	9.8713	56	0.55	100.35	194.34	193.79	93.44
4.	5 - 4	374 C.B.		374 C.B.	1870	322.6	25.0	347.6	115.86	347.6	100	5.8205	84	0.49	100.45	194.34	193.86	93.41
5.	STP - 5	0	852 C.B. + Comm.	852 C.B. + Comm.	4260	734.9	75.0	809.9	269.95	809.9	100	27.8806	2	0.06	100.40 STP at (-) 6.00	200.40	194.34	93.94

PROJECT : GROUP HOUSING SCHEME MEASURING 5.9125 ACRES IN SECTOR 79, GURGAON

SUBHEAD : SEWERAGE SCHEME

MATERIAL STATEMENT SEWERAGE

Sl. No.	Line Referances	200 mm		250 mm		300 mm	
		0 to 1.50 m	0 to 3.00 m	0 to 1.50 m	0 to 3.00 m	0 to 1.50 m	0 to 3.00 m
1.	N1 - N4		105				
2.	N2 - N4	85					
3.	N3- N4	62					
4.	N4 - N6				65		
5.	N5 - N6		132				
6.	N6 - N8						21
7.	N7 - N8		115				
8	N8 - STP						2
9	STP - OUTFALL	191					
	TOTAL	**338**	**352**	**0**	**65**	**0**	**23**

PROJECT : GROUP HOUSING SCHEME MEASURING 5.9125 ACRES IN SECTOR 79, GURGAON

SUBHEAD : STORM WATER DRAINAGE SCHEME

MATERIAL STATEMENT STORM WATER DRAINAGE

Sl. No.	Line Referances	400 mm (M)	
		0 to 1.50 m	0 to 3.00 m
1	N1- N3	130.0	
2	N2- N3	66.0	
3	N3- OUTFALL	20.0	
4	N4- N5	216.0	
5	N5- OUTFALL	20.0	
6	N6- N7	259.0	
7	N7- OUTFALL	20.0	
	TOTAL	**731.0**	**0.0**

PROJECT : GROUP HOUSING SCHEME MEASURING 5.9125 ACRES IN SECTOR 79, GURGAON

SUBHEAD : WATER SUPPLY DISTRIBUTION

MATERIAL STATEMENT FOR DOMESTIC WATER SUPPLY PIPE (FRESH WATER SUPPLY)

Sl. No.	Line Referances	150 mm (M)	Sluice Valve (No.)	100 mm (M)	Sluice Valve (No.)	50 mm (M)	Sluice Valve (No.)	40 mm (M)	Sluice Valve (No.)
1	3 - 1	143	1						
2	3 - 2					122	1		
3	5 - 3	17	1						
4	5 - 4	45	1						
5	UGR - 5	15	1						
28	FROM TUBWELL-1,2			**323**	**2**				
TOTAL		**220**	**4**	**323**	**2**	**122**	**1**	**0**	**0**

1	FROM HUDA MAIN TO UGR	**110**	1

PROJECT : GROUP HOUSING SCHEME MEASURING 5.9125 ACRES IN SECTOR 79, GURGAON

SUBHEAD : WATER SUPPLY DISTRIBUTION

MATERIAL STATEMENT FOR RECYCLED (FLUSHING) WATER SUPPLY PIPE

Sl. No.	Line Referances	100 mm (M)	Sluice Valve (No.)	50 mm (M)	Sluice Valve (No.)	40 mm (M)	Sluice Valve (No.)
1.	3 - 1					122	1
2.	3 - 2	65	1				
3.	5 - 3	56	1				
4.	5 - 4	84	1				
5.	STP - 5	2	1				
TOTAL		**207**	**4**	**0**	**0**	**122**	**1**

PROJECT : GROUP HOUSING SCHEME MEASURING 5.9125 ACRES IN SECTOR 79, GURGAON

SUBHEAD : RECYCLED WATER SUPPLY DISTRIBUTION FOR IRRIGATION

MATERIAL STATEMENT FOR RECYCLED WATER SUPPLY PIPE (FOR IRRIGATION)

Sl. No.	Line Referances	63 mm OD (M)	Sluice Valve (No.)
1.	1-2	193.0	1.0
2.	2-3	153.0	
3.	3-4	159.0	1.0
4.	2-4	299.0	1.0
5.	STP Plant -4	3.0	1.0
TOTAL		807.0	4.0

QRCV = 30 Nos.

PROJECT : GROUP HOUSING SCHEME MEASURING 5.9125 ACRES IN SECTOR 79, GURGAON

SUBHEAD : FIRE RING MAIN

MATERIAL STATEMENT FOR FIRE RING MAIN

Sl. No.	Line Referances	150 mm (M)	100 mm (M)
1.	1 - 2	81.0	
2.	2 - 3	35.0	
3.	3 - 4	41.0	
4.	4 - 5	50.0	
5.	5 - 6	42.0	
6.	6 - 9	10.0	
7.	1 - 7	184.0	
8.	7 - 8	73.0	
9.	8 - 9	43.0	
10.	9 - UGR	7.0	
11.	10 - 11		61.0
12	11 - 13		86.0
16.	12 - 13		24.0
17.	Pump Room - 13		8.0
TOTAL		**566.0**	**179.0**

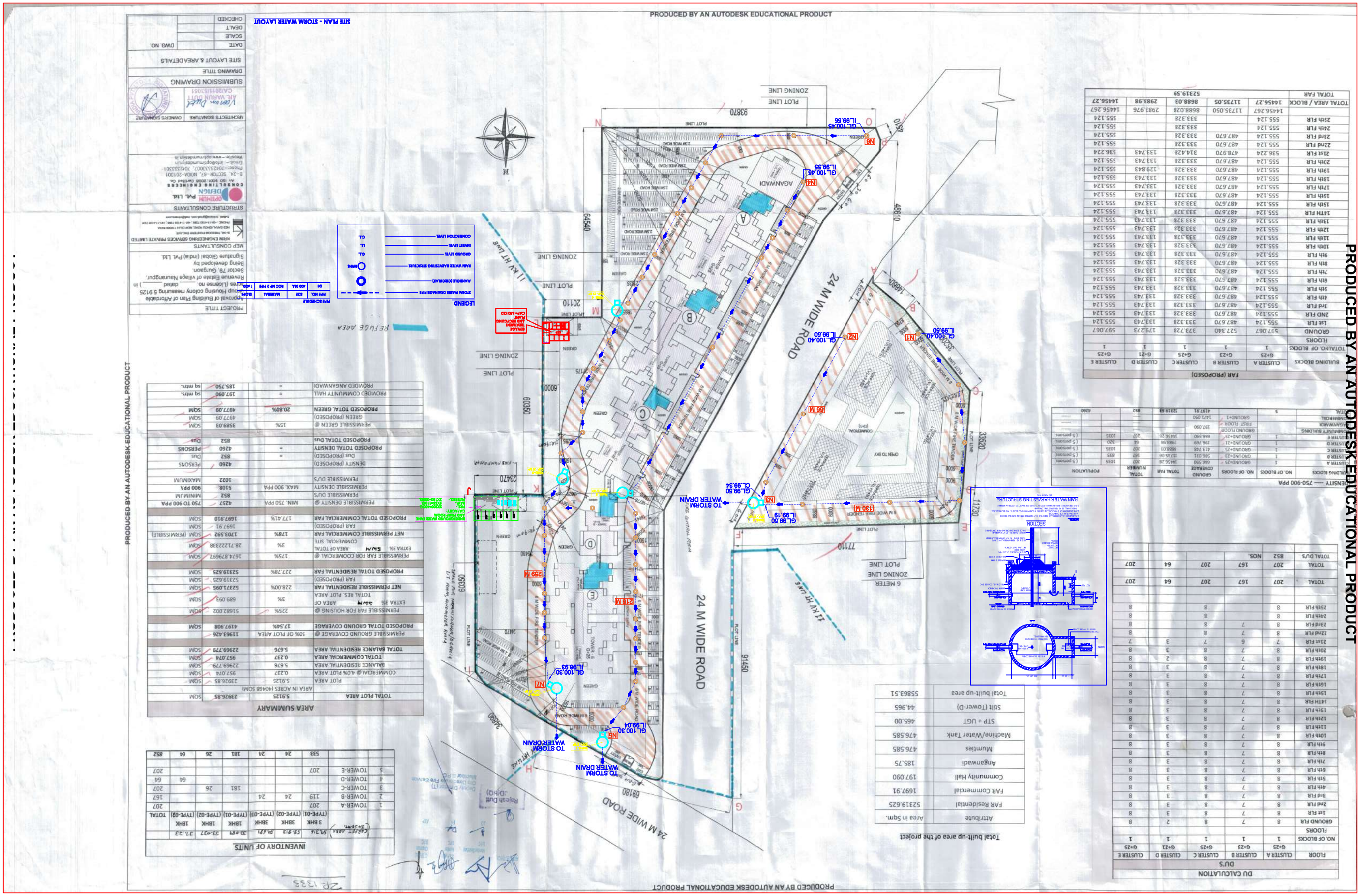
NO. OF EXTERNAL HYDRANTS = 16 NOS.

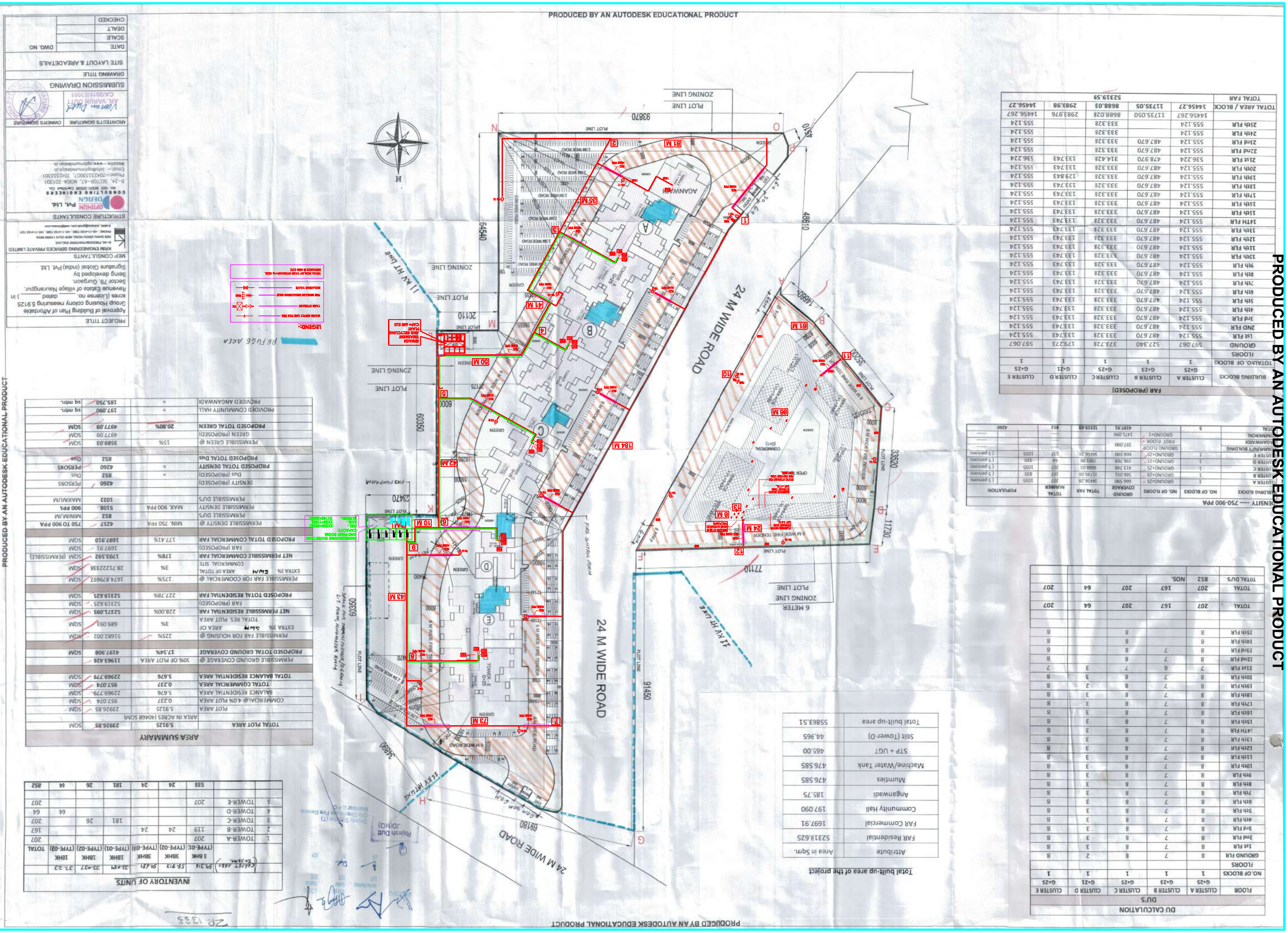
PROJECT : GROUP HOUSING SCHEME MEASURING 5.9125 ACRES IN SECTOR 79, GURGAON

SUBHEAD : DETAILS OF LENGTH OF THE ROAD

Road No.	Length in M (6 M wide)	REMARKS
1.	226	
2.	230	
3.	265	
TOTAL	721	
Add 5% for curves	36	
TOTAL	**757**	

Road Width (M)	Length in M (6 M wide)	Mettalled width (M)	Mettalled width (Sq.m)	kerb & Channels Fixing	No. of Trees
6 m wide road	757	4	3028.2	One side 757	63
			Say 3030 sq. m.		Say 65 nos.





ZP-1333

DU CALCULATION

DU'S					
FLOOR	CLUSTER A	CLUSTER B	CLUSTER C	CLUSTER D	CLUSTER E
	G+25	G+23	G+25	G+21	G+25
NO. OF BLOCKS	1	1	1	1	1
FLOORS					
GROUND FLR	8	7	8	2	8
1st FLR	8	7	8	3	8
2nd FLR	8	7	8	3	8
3rd FLR	8	7	8	3	8
4th FLR	8	7	8	3	8
5th FLR	8	7	8	3	8
6th FLR	8	7	8	3	8
7th FLR	8	7	8	3	8
8th FLR	8	7	8	3	8
9th FLR	8	7	8	3	8
10th FLR	8	7	8	3	8
11th FLR	8	7	8	3	8
12th FLR	8	7	8	3	8
13th FLR	8	7	8	3	8
14TH FLR	8	7	8	3	8
15th FLR	8	7	8	3	8
16th FLR	8	7	8	3	8
17th FLR	8	7	8	3	8
18th FLR	8	7	8	3	8
19th FLR	8	7	8	2	8
20th FLR	8	7	8	3	8
21st FLR	7	6	7	3	7
22nd FLR	8	7	8		8
23rd FLR	8	7	8		8
24th FLR	8		8		8
25th FLR	8		8		8
TOTAL	207	167	207	64	207
TOTAL	207	167	207	64	207
TOTAL DU'S	852	NOS.			

Total built-up area of the project

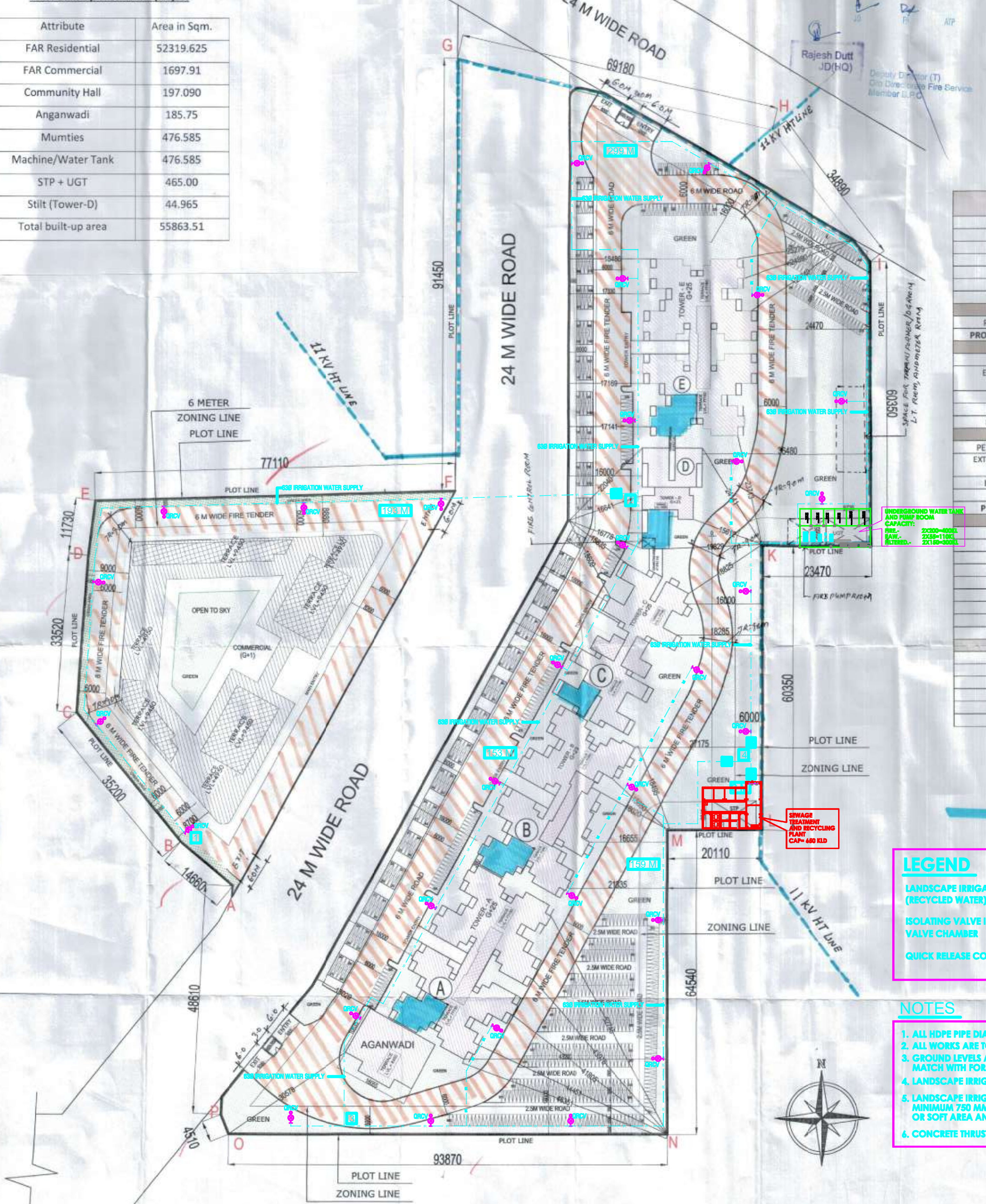
Attribute	Area in Sqm.
FAR Residential	52319.625
FAR Commercial	1697.91
Community Hall	197.090
Anganwadi	185.75
Mumties	476.585
Machine/Water Tank	476.585
STP + UGT	465.00
Stilt (Tower-D)	44.965
Total built-up area	55863.51

DENSITY ---- 750-900 PPA

BUILDING BLOCKS	NO. OF BLOCKS	NO. OF FLOORS	GROUND COVERAGE	TOTAL FAR	TOTAL NUMBER	POPULATION		
CLUSTER A	1	GROUND+25	666.590	14456.28	207	1035		(5 persons)
CLUSTER B	1	GROUND+23	586.031	11735.06	167	835		(5 persons)
CLUSTER C	1	GROUND+25	413.748	8688.03	207	1035		(5 persons)
CLUSTER D	1	GROUND+21	196.769	2983.98	64	320		(5 persons)
CLUSTER E	1	GROUND+25	666.590	14456.28	207	1035		(5 persons)
COMMUNITY BUILDING		GROUND FLOOR	197.090		----			----
AAGANWARDI		FIRST FLOOR			----			----
COMMERCIAL		GROUND+1	1471.090		----			----
TOTAL	5		4197.91	52319.63	852	4260		

FAR (PROPOSED)

BUILDING BLOCKS	CLUSTER A	CLUSTER B	CLUSTER C	CLUSTER D	CLUSTER E
	G+25	G+23	G+25	G+21	G+25
TOTALNO. OF BLOCKS	1	1	1	1	1
FLOORS					
GROUND	597.067	527.340	373.728	179.273	597.067
1st FLR	555.124	487.670	333.328	133.743	555.124
2ND FLR	555.124	487.670	333.328	133.743	555.124
3rd FLR	555.124	487.670	333.328	133.743	555.124
4th FLR	555.124	487.670	333.328	133.743	555.124
5th FLR	555.124	487.670	333.328	133.743	555.124
6th FLR	555.124	487.670	333.328	133.743	555.124
7th FLR	555.124	487.670	333.328	133.743	555.124
8th FLR	555.124	487.670	333.328	133.743	555.124
9th FLR	555.124	487.670	333.328	133.743	555.124
10th FLR	555.124	487.670	333.328	133.743	555.124
11th FLR	555.124	487.670	333.328	133.743	555.124
12th FLR	555.124	487.670	333.328	133.743	555.124
13th FLR	555.124	487.670	333.328	133.743	555.124
14TH FLR	555.124	487.670	333.328	133.743	555.124
15th FLR	555.124	487.670	333.328	133.743	555.124
16th FLR	555.124	487.670	333.328	133.743	555.124
17th FLR	555.124	487.670	333.328	133.743	555.124
18th FLR	555.124	487.670	333.328	133.743	555.124
19th FLR	555.124	487.670	333.328	129.843	555.124
20th FLR	555.124	487.670	333.328	133.743	555.124
21st FLR	536.224	478.970	314.428	133.743	536.224
22nd FLR	555.124	487.670	333.328		555.124
23rd FLR	555.124	487.670	333.328		555.124
24th FLR	555.124		333.328		555.124
25th FLR	555.124		333.328		555.124
	14456.267	11735.050	8688.028	2983.976	14456.267
TOTAL AREA / BLOCK	14456.27	11735.05	8688.03	2983.98	14456.27
TOTAL FAR	52319.59				



INVENTORY OF UNITS

	(CARPET AREA In Sqmt.)	59.316	58.813	59.681	33.089	33.037	37.123	
		3 BHK (TYPE-01)	3BHK (TYPE-02)	3BHK (TYPE-03)	1BHK (TYPE-01)	1BHK (TYPE-02)	1BHK (TYPE-03)	TOTAL
1	TOWER-A	207						207
2	TOWER-B	119	24	24				167
3	TOWER-C				181	26		207
4	TOWER-D						64	64
5	TOWER-E	207						207
		533	24	24	181	26	64	852

AREA SUMMARY

TOTAL PLOT AREA	5.9125	23926.85	SQM
	AREA IN ACRES (40468 SQM)		
PLOT AREA	5.9125	23926.85	SQM
COMMERCIAL@ 4.0% PLOT AREA	0.237	957.074	SQM
BALANCE RESIDENTIAL AREA	5.676	22969.779	SQM
TOTAL COMMERCIAL AREA	0.237	957.074	SQM
TOTAL BALANCE RESIDENTIAL AREA	5.676	22969.779	SQM
PERMISSIBLE GROUND COVERAGE @	50% OF PLOT AREA	11963.426	
PROPOSED TOTAL GROUND COVERAGE	17.54%	4197.908	SQM
PERMISSIBLE FAR FOR HOUSING @	225%	51682.002	SQM
EXTRA 3% SWM AREA OF TOTAL RES. PLOT AREA	3%	689.093	SQM
NET PERMISSIBLE RESIDENTIAL FAR	228.00%	52371.095	SQM
FAR (PROPOSED)		52319.625	SQM
PROPOSED TOTAL RESIDENTIAL FAR	227.78%	52319.625	SQM
PERMISSIBLE FAR FOR COOMERCIAL @	175%	1674.879697	SQM
EXTRA 3% SWM AREA OF TOTAL COMMERCIAL SITE	3%	28.71222338	SQM
NET PERMISSIBLE COMMERCIAL FAR	178%	1703.592	SQM (PERMISSIBLE)
FAR (PROPOSED)		1697.91	SQM
PROPOSED TOTAL COMMERCIAL FAR	177.41%	1697.910	SQM
PERMISSIBLE DENSITY @	MIN. 750 PPA	4257	750 TO 900 PPA
PERMISSIBLE DU'S		852	MINIMUM
PERMISSIBLE DENSITY	MAX. 900 PPA	5108	900 PPA
PERMISSIBLE DU'S		1022	MAXIMUM
DENSITY (PROPOSED)		4260	PERSONS
Dus (PROPOSED)	=	852	Dus
PROPOSED TOTAL DENSITY	=	4260	PERSONS
PROPOSED TOTAL Dus		852	Dus
PERMISSIBLE GREEN @	15%	3589.03	SQM
GREEN (PROPOSED)		4977.09	SQM
PROPOSED TOTAL GREEN	20.80%	4977.09	SQM
PROVIDED COMMUNITY HALL	=	197.090	sq mtrs.
PROVIDED ANGANWADI	=	185.750	sq mtrs.

Rajesh Dutt JD(HQ)

Deputy Director (T) O/o Director Fire Service Member B.P.C.

LEGEND

- LANDSCAPE IRRIGATION LINE (RECYCLED WATER)
- ISOLATING VALVE IN RECTANGULAR VALVE CHAMBER
- QUICK RELEASE COUPLING VALVE — QRCV

NOTES

1. ALL HDPE PIPE DIAMETERS ARE IN MM.
2. ALL WORKS ARE TO BE CARRIED OUT AS PER SPECIFICATIONS.
3. GROUND LEVELS AS MENTIONED ARE TENTATIVE. THESE SHALL MATCH WITH FORMATION LEVELS AS GIVEN BY ARCHITECTS.
4. LANDSCAPE IRRIGATION MAINS SHALL BE LAID IN SEPARATE TRENCHES.
5. LANDSCAPE IRRIGATION MAINS SHALL BE LAID DEEP ENOUGH SO THAT A MINIMUM 750 MM COVER IS AVAILABLE WHEN LAID UNDER FOOTPATH OR SOFT AREA AND 900 MM WHEN LAID UNDER ROAD.
6. CONCRETE THRUST BLOCKS SHALL BE PROVIDED AT ALL BENDS, TEES ETC.

SITE PLAN - IRRIGATION LAYOUT PLAN

SHEET SIZE- A1, SACLE-1:350

PROJECT TITLE

Approval of Building Plan of Affordable Group Housing colony measuring 5.9125 acres (License no. _____ dated ______) in Revenue Estate of village Naurangpur, Sector 79, Gurgaon. Being developed by Signature Global (India) Pvt. Ltd.

MEP CONSULTANTS

KRIM ENGINEERING SERVICES PRIVATE LIMITED

STRUCTURE CONSULTANTS

OPTIMUM DESIGN Pvt. Ltd.
CONSULTING ENGINEERS
An ISO 9001:2008 Certified Co.
B-24, SECTOR-67, NOIDA-201301
Phone:-70423333007, 7042333301
Email:- info@optimumdesign.in
Website:-www.optimumdesign.in

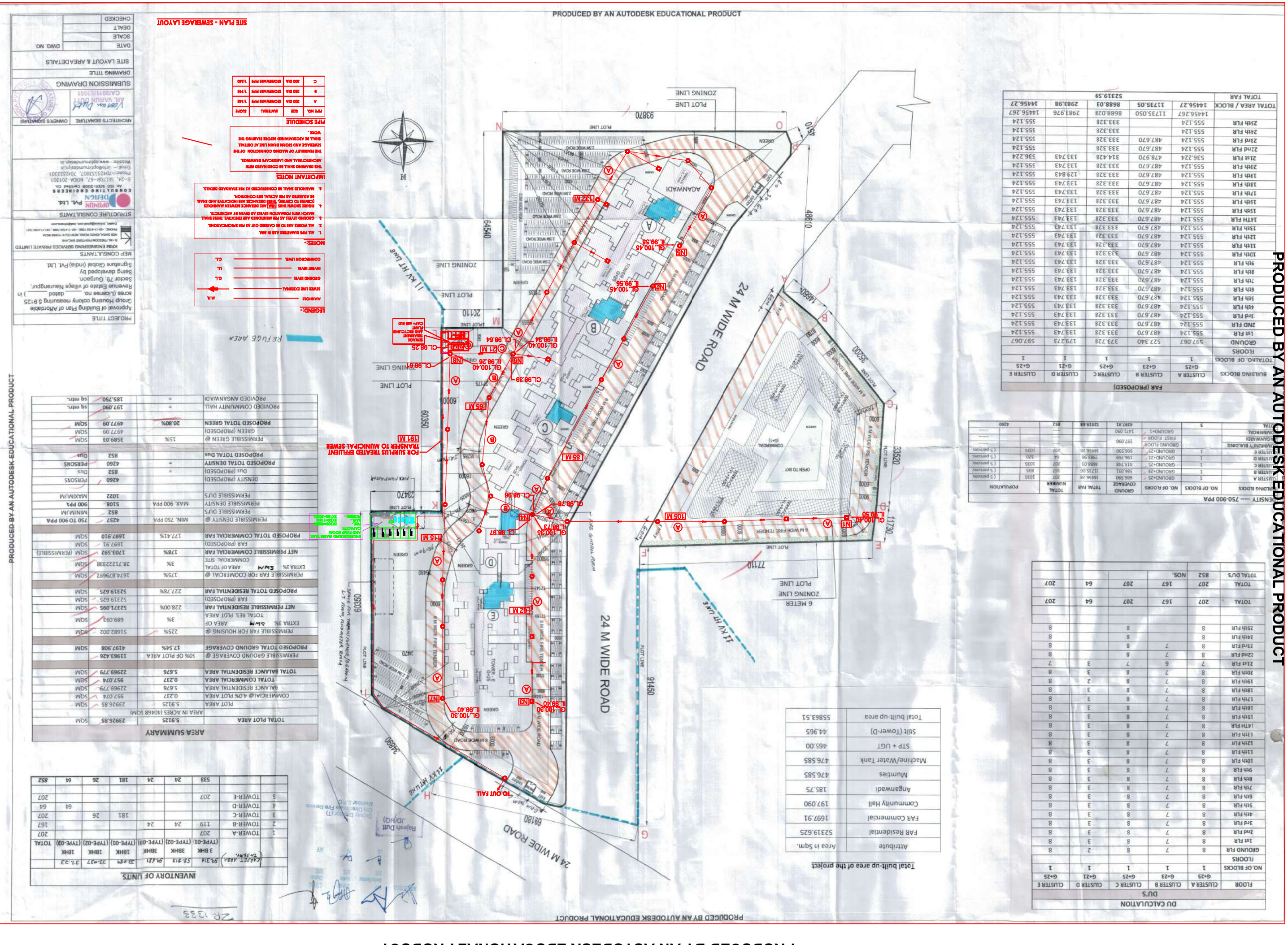
ARCHITECT'S SIGNATURE	OWNER'S SIGNATURE
AR. VARUN DUTT CA/2011/53051	

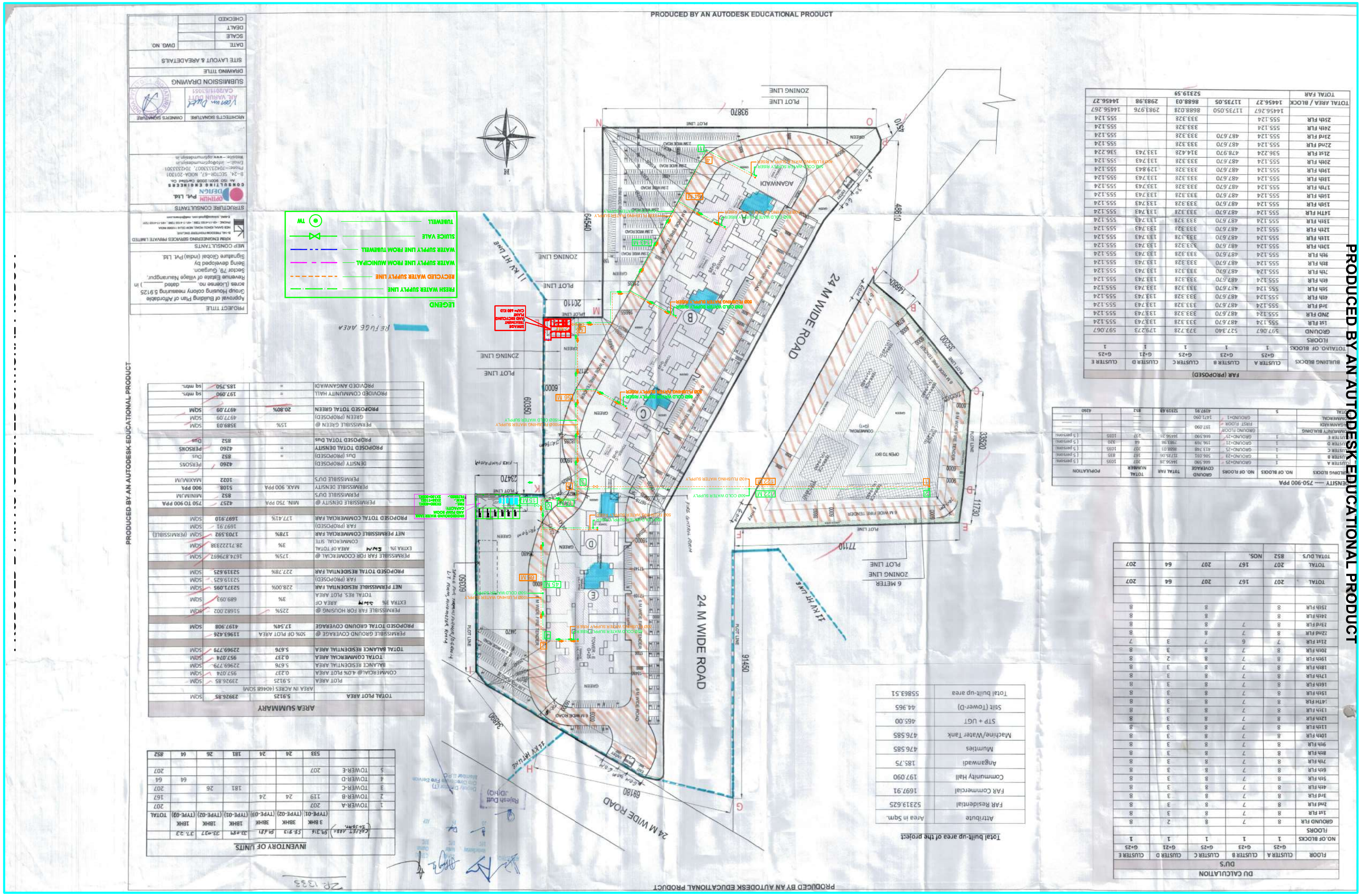
SUBMISSION DRAWING

DRAWING TITLE

SITE LAYOUT & AREA DETAILS

DATE		DWG. NO.
SCALE		
DEALT		
CHECKED		





FAR (PROPOSED)						
BUILDING BLOCKS	CLUSTER A	CLUSTER B	CLUSTER C	CLUSTER D	CLUSTER E	TOTAL
TOTAL NO. OF BLOCKS	1	1	1	1	1	5
	G+25	G+23	G+25	G+21	G+25	
TOTAL AREA / BLOCK	14456.27	11735.05	8688.03	2983.98	14456.27	52319.59
TOTAL FAR	14456.267	11735.050	8688.028	2983.976	14456.267	
25th FLR	555.124		333.328		555.124	
24th FLR	555.124		333.328		555.124	
23rd FLR	555.124	487.670	333.328		555.124	
22nd FLR	555.124	487.670	333.328		555.124	
21st FLR	536.224	478.970	314.428	133.743	536.224	
20th FLR	555.124	487.670	333.328	133.743	555.124	
19th FLR	555.124	487.670	333.328	129.843	555.124	
18th FLR	555.124	487.670	333.328	133.743	555.124	
17th FLR	555.124	487.670	333.328	133.743	555.124	
16th FLR	555.124	487.670	333.328	133.743	555.124	
15th FLR	555.124	487.670	333.328	133.743	555.124	
14TH FLR	555.124	487.670	333.328	133.743	555.124	
13th FLR	555.124	487.670	333.328	133.743	555.124	
12th FLR	555.124	487.670	333.328	133.743	555.124	
11th FLR	555.124	487.670	333.328	133.743	555.124	
10th FLR	555.124	487.670	333.328	133.743	555.124	
9th FLR	555.124	487.670	333.328	133.743	555.124	
8th FLR	555.124	487.670	333.328	133.743	555.124	
7th FLR	555.124	487.670	333.328	133.743	555.124	
6th FLR	555.124	487.670	333.328	133.743	555.124	
5th FLR	555.124	487.670	333.328	133.743	555.124	
4th FLR	555.124	487.670	333.328	133.743	555.124	
3rd FLR	555.124	487.670	333.328	133.743	555.124	
2ND FLR	555.124	487.670	333.328	133.743	555.124	
1st FLR	555.124	487.670	333.328	133.743	555.124	
GROUND	597.067	527.340	379.728	179.273	597.067	
FLOORS						
TOTAL NO. OF BLOCKS	1	1	1	1	1	5
	G+25	G+23	G+25	G+21	G+25	
BUILDING BLOCKS	CLUSTER A	CLUSTER B	CLUSTER C	CLUSTER D	CLUSTER E	TOTAL

DU CALCULATION					
DU'S					
FLOOR	CLUSTER A	CLUSTER B	CLUSTER C	CLUSTER D	CLUSTER E
NO. OF BLOCKS	1	1	1	1	1
	G+25	G+23	G+25	G+21	G+25
BUILDING BLOCKS	CLUSTER A	CLUSTER B	CLUSTER C	CLUSTER D	CLUSTER E	TOTAL
TOTALNO. OF BLOCKS	1	1	1	1	1	5
	G+25	G+23	G+25	G+21	G+25	
GROUND FLR	8	7	8	2	8	33
1st FLR	8	7	8	3	8	34
2nd FLR	8	7	8	3	8	34
3rd FLR	8	7	8	3	8	34
4th FLR	8	7	8	3	8	34
5th FLR	8	7	8	3	8	34
6th FLR	8	7	8	3	8	34
7th FLR	8	7	8	3	8	34
8th FLR	8	7	8	3	8	34
9th FLR	8	7	8	3	8	34
10th FLR	8	7	8	3	8	34
11th FLR	8	7	8	3	8	34
12th FLR	8	7	8	3	8	34
13th FLR	8	7	8	3	8	34
14TH FLR	8	7	8	3	8	34
15th FLR	8	7	8	3	8	34
16th FLR	8	7	8	3	8	34
17th FLR	8	7	8	3	8	34
18th FLR	8	7	8	3	8	34
19th FLR	8	7	8	2	8	33
20th FLR	8	7	8	3	8	34
21st FLR	7	6	7	3	7	30
22nd FLR	8	7	8	3	8	34
23rd FLR	8	7	8	3	8	34
24th FLR	8	7	8	3	8	34
25th FLR	8	7	8	3	8	34
TOTAL	207	167	207	64	207	852
TOTAL DU'S	207	167	207	64	207	852

Total built-up area of the project	
Attributte	Area in Sqm.
FAR Residential	52319.625
FAR Commercial	1697.91
Community Hall	197.090
Anganwadi	185.75
Mumties	476.585
Machine/Water Tank	476.585
STP + UGT	465.00
Silit (Tower-D)	44.965
Total built-up area	55863.51

AREA SUMMARY			
TOTAL PLOT AREA	5.9125	239276.85	SQM
AREA IN ACRES (40468 SQM)			
PLOT AREA	5.9125	239276.85	SQM
COMMERCIAL@ 4.0% PLOT AREA	0.237	9570.74	SQM
BALANCE RESIDENTIAL AREA	5.676	229697.79	SQM
TOTAL COMMERCIAL AREA	0.237	9570.74	SQM
TOTAL BALANCE RESIDENTIAL AREA	5.676	229697.79	SQM
PROPOSED TOTAL GROUND COVERAGE	17.54%	41970.908	SQM
PERMISSIBLE GROUND COVERAGE @	50% OF PLOT AREA	119634.26	SQM
PERMISSIBLE FAR FOR HOUSING @	225%	51682.002	SQM
EXTRA 3% SWM AREA OF TOTAL RES. PLOT AREA	3%	689.093	SQM
NET PERMISSIBLE RESIDENTIAL FAR	228.00%	52371.095	SQM
PROPOSED TOTAL RESIDENTIAL FAR	227.78%	52319.625	SQM
FAR (PROPOSED)		52319.625	SQM
PERMISSIBLE FAR FOR COMMERCIAL @	17.5%	1674.8.79657	SQM
EXTRA 3% SWM AREA OF TOTAL COMMERCIAL SITE	3%	28.71222.38	SQM
NET PERMISSIBLE COMMERCIAL FAR	17.8%	1703.592	SQM (PERMISSIBLE)
FAR (PROPOSED)		1697.91	SQM
PROPOSED TOTAL COMMERCIAL FAR	17.4%	1697.910	SQM
PERMISSIBLE DENSITY @	MIN. 750 PPA	4257	750 TO 900 PPA
PERMISSIBLE DU'S		852	MAXIMUM
PERMISSIBLE DENSITY	MAX. 900 PPA	5108.	900 PPA
PERMISSIBLE DU'S		1022	MAXIMUM
PROPOSED TOTAL DENSITY	=	4260	PERSONS
Dus (PROPOSED)	=	852	Dus
DENSITY (PROPOSED)		4260	PERSONS
PROPOSED TOTAL Dus		852	Dus
PERMISSIBLE GREEN @	15%	3589.03	SQM
GREEN (PROPOSED)		4977.09	SQM
PROPOSED TOTAL GREEN	20.80%	4977.09	SQM
PROVIDED COMMUNITY HALL	=	197.090	sq mtrs.
PROVIDED ANGANWADI	=	185.750	sq mtrs.

INVENTORY OF UNITS									
	(CARPET AREA)	3 BHK (TYPE-01)	3BHK (TYPE-02)	3BHK (TYPE-03)	1BHK (TYPE-01)	1BHK (TYPE-02)	1BHK (TYPE-03)		TOTAL
		59.716	59.913	59.471	32.691	29.927	32.33		
1	TOWER-A	207							207
2	TOWER-B	119	24	24					167
3	TOWER-C				181	26			207
4	TOWER-D							64	64
5	TOWER-E	207							207
		533	24	24	181	26	64		852

POPULATION						
BUILDING BLOCKS	NO. OF BLOCKS	NO. OF FLOORS	GROUND COVERAGE	TOTAL FAR	TOTAL NUMBER	POPULATION
TOTAL	5		4197.91	52319.63	852	4260
COMMERCIAL						
FIRST FLOOR			197.090			
GROUND FLOOR			1421.090			
ANGANWADI						
COMMUNITY BUILDING						
CLUSTER A	1	GROUND+25	666.590	14456.26	207	1035 (5 persons)
CLUSTER B	1	GROUND+23	541.090	11735.06	167	835 (5 persons)
CLUSTER C	1	GROUND+25	666.590	14456.26	207	1035 (5 persons)
CLUSTER D	1	GROUND+21	196.769	2983.98	64	320 (5 persons)
CLUSTER E	1	GROUND+25	666.590	14456.26	207	1035 (5 persons)

DENSITY ---- 750-900 PPA