

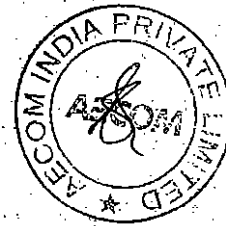
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INTERNAL DEVELOPMENT WORKS DESIGN AND COST ESTIMATES

FOR

PROPOSED BUILDING PLAN OF GROUP HOUSING (ON 13.762 Acres)

Date: February 25, 2013



Nishit Gupta
NISHIT GUPTA
ARCHITECT
LIC. No:- CA/91/13697

IN

SECTOR – 106,

AT GURGAON, MANESAR URBAN COMPLEX
HARYANA

DEVELOPED BY
M/S. SEPSET PROPERTIES. LTD.

REPORT

GURGAON town of Haryana State is situated on National Highway No.8 at a distance of 20 kms for 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. In order to relieve the growing pressure of population in National Capital of Delhi, it has been decided by the Haryana Government to establish various residential Sectors alongwith infrastructure facilities in Gurgaon. This report is for Proposed Group housing on 13.762 Acres in Group Housing Sector - 106 at Gurgaon.

1. WATER SUPPLY

The source of water supply in this area bore well. As the underground water is potable, provision for 4 number of tube-well has been made in this estimate, it has been proposed to construct underground tanks of capacity as per attached details, and at location for domestic purpose and for fire protection. The under ground tanks will be fed from the tube-wells and HUDA supply, which will feed O. H. tanks on the roof of the Buildings. The water supply system has been designed as per the Hazen Williams formula.

2. DESIGN

The scheme has been designed for population of approx. 4018 persons considering five persons for each main dwelling unit and 2 persons per EWS unit. The rate of water supply per head/day has been taken as 172.50 Liters per head per day.

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 also been provided in case of any electricity failure. Generator will be provided separately or added to the capacity of main generator.

4. SEWERAGE SCHEME

This scheme is designed for sewer connecting to the STP and overflow to HUDA sewer scheme.

The sewer lines have been designed for three times average D. W. F. in relation to water supply demand. It has been assumed that about 75% of the domestic water supply shall find its way into the proposed sewer. Sewer lines shall be laid to a gradient maintaining minimum 2.46 ft/sec self cleaning velocity. Sewer line upto 200mm dia has been designed to run half full and above 400mm dia has been designed to run three fourth full at peak flow. Necessary provision for laying SW/ RCC pipe sewer line; construction of required number of manholes etc. have been made in the estimate.

Necessary design statement for entire sewerage system has been prepared and attached with estimate. Manning's formula has been used on the design of sewerage system.

5. STORM WATER DRAINAGE

It is proposed to lay underground RCC pipe drains with required number of catch basins for disposal of storm water which will be connected to the HUDA drain. The intensity of rainfall has been taken as 40 mm per hour. A minimum size of 400 mm dia RCC storm water line will be provided and designed as per manning's formula. Necessary rain water harvesting arrangement also has been provided.

6. SPECIFICATIONS

The work will be carried out in accordance with the standard specifications of PHE as laid down by the Haryana Govt./ HUDA.

7. ROADS

Roads have been provided to above zones and estimate is prepared as revised specifications adopted by HUDA.

8. STREET LIGHTING

Provision for external lighting of proposed area has been made.

9. HORTICULTURE

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

10. RATES

The estimate has been based on the present market rates.

11. COST

The total cost of the scheme, including cost of all services works out to be Rs. ~~580~~ ^{1538.85} Lacs
(Rupees Five ~~Cr~~ ^{eighty} Lakh only) including 3% contingencies @ 49% departmental charges, price escalation, unforeseen, Admin. charges

For M/s. Sepset Properties Ltd.

For Sepset Properties Limited

[Signature]
Authorised Signatory

(Authorized Signatory)

2. DESIGN CALCULATION**1.1 AREA STATEMENT****a. Site Area**

Area of site as per Zoning = 13.762 Acres
= (55692.749 sqm)

b. FAR

Permissible FAR@175% = (97462.31) sqm
Proposed FAR = 97294.435 sqm
(174.698 %)

c. Ground Coverage

Permissible Ground Coverage@35% = 19492.462 sqm
Proposed Ground Coverage = 7371.77 sqm
(13.24 %)

d. Convenient Shopping

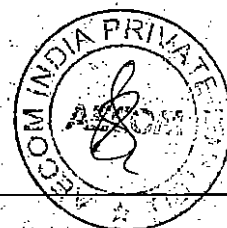
Permissible Area of Convenient Shopping @0.5% = 278.46 sqm
Proposed Area of Convenient Shopping = 278.02 sqm
(0.5 %)

e. Permissible density

= 300 PPA
Proposed density = 291.96 PER ACRE

f. Public Amenities

Required EWS Units = 10% of Total Units (722 No.)
= 72.2 nos.
Proposed EWS Units = 132 Nos.
Required Servant Rooms = 10% of Main Units.
Proposed Servant Rooms = 72 Nos.



(Both Packets)

3. POPULATION CALCULATION

Main Units	650 without Service Personnel 72 with Service Personnel <u>722 Nos</u>	=	722 x 5	=	3610 persons ✓
EWS		=	132 x 2.5	=	⁶⁶⁰ 264 persons
Servants		=	72 x 2	=	144 persons
Total		=		=	4018 persons 4414
Green Area Provided		=	8353.912 sqm	=	15% of the plot.
Green Area Proposed		=	17226.52 sqm	=	30 % of the plot

i) Domestic Water Requirement

a) Apartment Buildings

Total No. of occupancy

4414
4018

Total water requirement @ 172.5 lpcd =

4414
4018 x 172.5

= ~~693405~~ litres/day ⁶⁹³ KL/Day
761415 ^{761.42}

⊗ Pl. See oppo.

Total Domestic demand = 810 KL

45.60
806.42 KL say 810 KL

(ii) Horticulture requirement

Total area of site

= 13.762 Acres

Total soft area (approx.)

= 4.25 Acres

Total water requirement for horticulture
Work @ 25 KL/Acre / Day

= 4.25 x 25
106.25 KL/Day

will be met from
Treated effluent

(iii) Road side plantation

Total Road area (approx.)

= 2.25 Acres

Water requirement for road washing
@ 5 KL/Acre

= 2.25 x 5 = 11.25 KL/Day

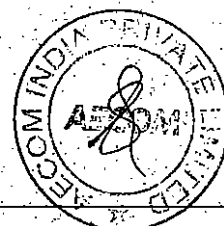
(iv) Fire Demand

= 600 KLD

Hence, total daily requirement

= i + ii + iii +

= ~~693~~ + 106.25 + 11.25 = ~~810.5~~ KLD
(excluding Fire demand) **117.50**



Tube well:

Approx discharge of tube-wells @ 14 KL = KL/hr. and working 16 hrs/day

a)	Total Water demand	=	810.5
b)	Number of tube-wells 810.5/14/16	=	3.6 No.
c)	Add 10% as standby	=	0.36 No.
			3.60
	Total	=	3.97 No.
	Say	=	4 No.

Entire water to the proposed development is to be supplied by HUDA from the canal filtration scheme and therefore, it is proposed to install ~~five~~ ^{4 Nos.} tube-wells as standby.

iv. Pumping machinery for tubewell

Gross working head	=	40.00 mts.
Average fall in S. L	=	5.00 mts.
Depression Head	=	5.00 mts.
Friction loss in main	=	10.00 mts.
	Total	= 60.00 mts.
HP = $\frac{1000 \times 14 \times 60}{60 \times 60 \times 75 \times 0.6}$	=	5.19 SAY = 7.5 HP

v. Underground Water Tank (at two locations)

a)	Total domestic water demand	=	⁵³⁰ 810 KLD
	Half day's requirement ⁵³⁰ (810/2)	=	²⁶⁵ 405 KLD or 300KL (2 x 150KL) Each

300 KL Dom
300 KL addl
600 KL Re

1200 KL vi.
200 KL Reqd
1400 KL

But it is proposed to construct an under ground tank (2No.) of 300 KL for raw water in four compartments, 300 KL for domestic use in four compartments and 600 KL for fire fighting purpose in four compartments as the locations shown in the plan i.e. total under ground water tank capacity of 1200 KL.

Boosting Machinery

Total Domestic Water Requirement	=	⁵³⁰ 800 KLD
Pumping per hour @ 10 hr pumping / day	=	⁵³ 80 KL / hr.
2 Nos Pump working	Total	= $\frac{883.33}{60 \text{ lpm}} = 441.66 \text{ LPM}$ Say 500 LPM
Gross working head	=	⁵³⁰
- Suction lift	=	0.00 mts.
- Frictional loss in mains & specials	=	10.00 mts.
- Clear Head required	=	80.00 mts.
Total	=	90.00 mts.
Pump HP	=	$\frac{500 \times 90}{60 \times 75 \times 0.65} = 16.67$ 15.5 HP
Pump HP = SAY 16 HP		Say = 20 HP



It is proposed to provide 2 nos. of pumping sets of 300 lpm discharge at 90 mts. Head (two pump is working and other as standby) for domestic purpose. ⁵⁰⁰ at both location (one working & other as standby) at each UGT.

vii. Pumps for fire protection

S. No.	Parameters	Location	Pump Sets		
			Jockey	Main	Diesel
a.	Discharge in lpm	Pump Room	180 lpm	2850 lpm	2850 lpm
b.	Head in meters		150	150	150
c.	HP		15	150	150
d.	Quantity in nos.		4	4	2

viii. Generating Sets

HP of Tube-well pump = $7.5 \times 4 = 30$

= 30

HP of Domestic pump = $2 \times 42.5 = 85$

HP of Flushing pump = $2 \times 15 = 30$

HP of Jockey Pump = $15 \times 4 = 60$

= 60

Total = 165 HP

= 119.36 kW

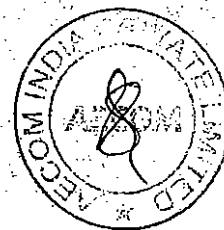
SAY = 90 kW

= 90 kVA

$119.36 \times 1.5 = 179.04 \text{ kW}$
Add Flushing = 15
194.04 kW

Generator back up required for the above equipments will be added on to the capacity of main generator. 200 kVA (100 + 100 kVA) at two location Say 200 kVA

Proposed Group Housing at sector - 106 Gurgaon (Haryana)

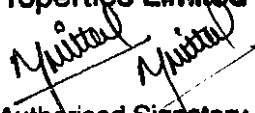


3. FINAL ABSTRACT OF COST

S. No.	Description	Rs. in Lakh
1.	Sub Work No. I Water Supply	412.18 ²⁷⁵ 348.15
2.	Sub Work No. II Sewerage	157.45 ¹⁹ 142.80 175.00
3.	Sub Work No. III Storm water Drainage	106.43 ⁰⁶ 109.75
4.	Sub Work IV Road Network	295.30 ^{64.5} 136.25
5.	Sub Work V Street Lighting	21.11 ¹⁵ 21.15 33.80
6.	Sub Work VI Horticulture	10.00 ^{12.5} 24.55 45.12
7.	Sub Work VII Services & Resurfacing of Roads	352.70 ⁰⁶ 217.75
	Total	Rs. 579 Lakh 980.40 1065.82
	(C.O. to Final Abstract of Cost) Say Rupees	1355.30 ²⁷ Rs. 580 Lakh 980.50 1066.00

Say of 1355.30 Lacs

For Sepset Properties Limited


 Authorised Signatory

1355.30
+ 0.66
Say Rs. Per Lakh / Acre = 980.50 / 13.762 = 71.25 Lacs
98.48 Lacs

Say Rs. 71.25 Lacs / Acre
77.50

Executive Engineer
HUDA Division No. V.
Gurgaon

Sub Divisional Engineer
HUDA Sub Divn. No. 14
GURGAON

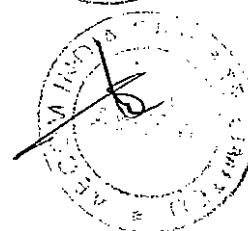
Superintending Engineer
HUDA Circle No. 1,
Gurgaon

Checked subject to comments
in forwarding letter No. 17478.
Dt. 1.11.13 and notes attached
with the estimate

Executive Engineer (W)
for Chief Engineer
HUDA Panchkula

4. ABSTRACT OF COST OF SUB WORK NO.1 (WATER SUPPLY)

S. No.	Description	Rs. in Lakh
1.	Sub Head No. I Head Works	91.83 ⁵⁶ 82.90
2.	Sub Head No. II Pumping Machinery	96.50 ⁶⁶ 69.50
3.	Sub Head No. III Distribution System (Dom. + Flushing)	30.31 ^{5.5} 8.80
4.	Sub Head No. IV Rising main from HUDA	11.05 ^{9.5} 9.50
5.	Sub Head No. V Flushing water supply	6.5 7.80
5	Sub Head No. VI Fire ring	35.55 ⁸¹ 24.85
6	Sub Head No. VII Irrigation	3.33 ^{6.5} 12.50
	Total	Rs. 180 Lakh 268.57 226.85
	Add 3% contingencies & PH charges	8.06 ^{5.4} 6.84
	Add 49% Deptt. Charges, Price Escalation Unforeseen, charge	276.63 ^{28.3} 114.49
	TOTAL	135.55 ^{273.7} 348.15
	SAY Rupees	412.18 ^{Rs. 273 Lacs} 348.15



Sub Work-1

Sub Head I : Water Supply Head Works

S. No.	Description	Amount
1.	Boring and installing 310 mm i/d tubewells with reverse rotary rig complete with pipe and strainer to a depth of about 80 m. in all respect 4 No. @ 4,00,000/- each <i>700000/-</i>	16,00,000 <i>28,00,000</i>
2.	Provision for rising mains, connecting tubewells with Water main and Bye-pass arrangements. <i>218 1200/-</i>	0
	a) 100 mm dia - 250 m @ Rs. 950/- b) 150 mm dia 140 m @ Rs. 1575/-	2,27,500 <i>2.52 lacs</i>
3.	Providing Booster Pumps Capacity 500 lpm at 90 M head 2 No. <i>Dom.</i> @ Rs. 3,25,000/- <i>2 lacs</i> <i>Flushing pump 450 lpm at 90 m head 2 nos @ 61.50 lacs</i>	6,50,000 <i>2.50 lacs</i>
4.	Provision for carriage of materials & other unforeseen items <i>1400</i>	70,000 <i>0.50 + 100000</i>
5.	Construction of U.G. tanks 1200 KL Rs. 2500/- KL incl. for 600 KL <i>2000 KL Flushing near S.P. 3500</i>	30,00,000 <i>26,00,000</i>
6.	Provision for construction of pump chamber of size 1.5m x 1.5 m for housing 4 tubewell No @ Rs. 6,000/- each <i>(L.S.)</i> <i>100000</i>	24,000 <i>400000</i>
7.	Provision for facilities staff for maintenance	500000
	Total	5581500 <i>8287500/-</i>
	SAY 56 LACS <i>82.90</i>	

49.2 lacs

2.50 lacs

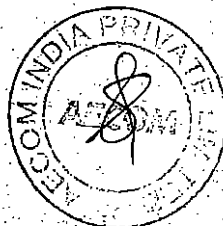
91.83 lacs

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

T.W. Line

$$100 \text{ mm } d = 120 + 98 \text{ m} = 218 \text{ m}$$

$$150 \text{ mm } d = 50 + 90 \text{ m} = 140 \text{ m}$$



Sub Work I
Sub Head II : Pumping Machinery

S. No.	Description	Amount
1.	Providing and installing electricity driven submersible pumping set capable of delivering about 14 KL / Hr. of water against a total Head of 80 M complete with motor and other accessories 1 No. @ Rs. 200,000/- <i>2.00 Lacs</i>	8,00,000/- 5,00,000/- <i>8.00 Lacs</i>
2.	Provision for diesel engine gen set each for stand by arrangements for T.W. of booster pump complete with gear head arrangement of following capacities 2 No. 45-KVA <i>100 + 100</i>	15,50,000/- 1,50,000/- <i>20.00 Lacs</i>
	Providing and installing pumping set of following capacities for fire protections <i>125000/-</i>	<i>5,00,000/-</i>
	- 180 lpm at 150M head 4 No. @ Rs. 75,000/-	3,00,000
	- 2850 lpm at 150 M head 4 No. @ Rs. 4,50,000/- <i>(150 hp)</i> <i>7.50</i>	18,00,000 <i>30.00 Lacs</i>
	- 2850 lpm at 150 M head 2 No. DG pump @ Rs. 6,00,000/- <i>(150 hp)</i> <i>10.00</i>	12,00,000 <i>20.00 Lacs</i>
4.	Provision for Chlorination plant complete 2 No. @ Rs. 40,000/- <i>1,00,000/-</i>	80,000 <i>2,00,000/-</i>
5.	Provision for making foundations & erection of pumping machinery	2,40,000 <i>2,50,000/-</i>
6.	Provision for pipes, valves & specials inside boosting chamber	3,00,000
7.	Provision for electric services connection including electric fittings for tube wells chambers & boosting chambers etc. <i>Transformer</i>	2,00,000 <i>5.00 Lacs</i>
8.	Provision for carriage for materials and other unforeseen items L.S	1,00,000
	Total	65,70,000/- 67,50,000/-
	SAY 68 LACS <i>69.50</i>	<i>96.50 Lacs</i>

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



Sub Work I

Sub Head III : Rising Main from HUDA

S. No.	Description	Amount
1.	Providing, laying, jointing & testing pipe lines including cost excavation etc. complete in all respects - 100mm dia. GI. Pipes 200 m @ 4400/- 150	2,00,000/- 3.15 Lacs
2.	Providing and fixing sluice valve including cost of surface box and masonry chamber etc. complete in all respects 100 mm i/d 1 No. @ Rs. 7000/- 150	28,000/- 48,000/- 0.28 Lacs
3.	Providing and fixing indicating plates for sluice valve and air Valves - 2 No. @ Rs. 1000/- each	2,000
4.	Provision for carriage for materials and other unforeseen items	25,000/- 1,00,000/-
5.	Provision for making connection with HUDA Pipe on master main	1,00,000/- 2,50,000/-
6.	Provision for cutting the road and making good the same	50,000 1,50,000/-
7.	Total Provision for fixing sluice valve & seal valves 04 No. @ 10000/-	5,23,000/- 4,00,000/-
8.	Provision for 100 mm dia inter connecting line SAY 5.5 LACS from UG1 1 to UG1 No 2 = 350 m @ Rs 1200/-	872,000/- 4,20,000/-

(C.O. to abstract of cost of Sub-work No.1)

Rs 11.05 Lacs

Rising main = $530 \times 1.50 = 795 \text{ m}$ or 175110 gals.

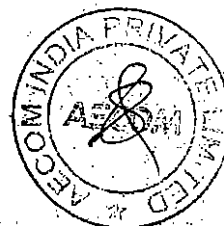
Length = 200 m

Size = 150 mm

V. = 1.73 m

Loss = 3.71 / 100

line losses = 0.74 m

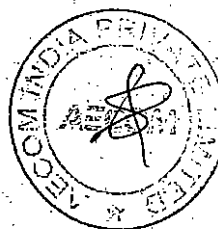


Sub Work I

Sub Head IV : Domestic Water Supply - Distribution system (Domestic + Flushing)

S. No.	Description	Amount
1.	Providing, laying, jointing and testing pipe lines including Fitting, valves, cost of excavation etc. complete in all respects	
	GI Pipe 40 mm, 310 M @ Rs. 300/-	93,000/-
	GI Pipe 50 mm, 270 M @ Rs. 450/-	1,21,500/-
	GI Pipe 65 mm, 215 M @ Rs. 650/-	1,39,750/-
	GI Pipe 80 mm, 200 M @ Rs. 950/-	1,90,000/-
	GI Pipe 100 mm, 150 M @ Rs. 1250/-	1,87,500/-
2.	Provision for carriage of materials and unforeseen items	24.66 Lacs
3.	Providing and fixing sluice valve	
	30 12000/-	3.60 Lacs
	- 100 mm dia 2 No. @ Rs. 10000/- each	20,000/-
	- 80 mm dia 2 No. @ Rs. 8000/- each	16,000/-
	- 50 mm dia 8 No. @ Rs. 5000/- each	40,000/-
4.	Providing and fixing Indicating plate 20 No. @ Rs. 1000/- each	20,000/-
5.	Provision for 10 nos. fixing valve @ 5500	55,000/-
	Total	2,37,750/-
	SAY 2.37 LACS	2,37,750/-
	2.37	30.31 Lacs

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



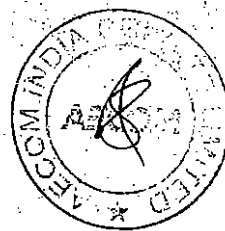
Nishit Gupta
NISHIT GUPTA
ARCHITECT
 LIC. No:- CA/91/13697

Sub Work I
Sub Head V : Flushing Water Supply - Distribution system

S. No.	Description	Amount
1.	Providing, laying, jointing and testing G.I pipe lines including Fitting, valves, cost of excavation etc. complete in all respects	
	- GI Pipe 32 mm, 20 M @ Rs. 200/- 400	8000/- 4,000
	- GI Pipe 40 mm, 460 M @ Rs. 300 550	1,38,000/-
	- GI Pipe 50 mm, 380 M @ Rs. 450 650	253,000/-
	- GI Pipe 65 mm, 65 M @ Rs. 650 850	1,71,000/-
	- GI Pipe 80 mm, 10 M @ Rs. 950/-	247,000/-
		12,250/-
		9,500/-
2.	Provision for carriage of materials and unforeseen item	50,000/-
3.	Providing and fixing sluice valve	75,000/-
	- 65 mm dia 4 No. @ Rs. 6500/- each 7000	28,000/- 26,000
	- 50 mm dia 4 No. @ Rs. 3000/- each 3500	14,000/- 12,000
	- 40 mm dia 10 No. @ Rs. 2000/- each 2500	25,000/- 20,000
4.	Providing and fixing Indicating plate 10 No. @ Rs. 1000/- each	10,000/-
5.	Provision for 10 nos. fixing valve @ 5500	55,000/-
	Total	5,28,750/-
	SAY 5.5 LACS	7,76,750/-
	7.80	

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

Cost added in Distribution line
(Dom. + Flushing)



Sub Work I

Sub Head VI : Water Supply Fire ^{Rising} Main

S. No.	Description	Amount
1.	Providing, Laying, jointing and testing M. S. pipes for fire rising main including cost of fittings, valves, connection etc. complete in all respect	
	(i) 150 mm MS. pipe line 1710 m @ Rs. 4500/- ^{1515/-} M	26,65,000/- ^{26.93 lacs}
	(ii) 80 mm MS 72 m @ Rs. 600/- ^{950/-} 1000/-	48,000/- ^{43,200/-} ^{0.72 lacs}
2.	Providing & fixing valve including cost of surface boxes and masonry chambers etc. complete in all respects - 150mm dia 10 Nos. @ Rs. 12000/- ^{15000/-} each	1,20,000/- ^{1,50,000/-}
3.	Providing and fixing fire Hydrant with accessories 36 Nos. @ Rs. 7000/- ^{10000/-}	2,52,000/- ^{3,60,000/-}
4.	Providing for carriage of material & cutting of Roads	1,00,000/- ^{1,50,000/-}
5.	Providing and fixing Indicating plate - 10 No. @ Rs. 1000/- each	10,000/-
6.	Providing & fixing & testing NRV complete 36 No's @ 5000/-	1,80,000/-
	Total	30,90,200/- ^{34,83,100/-}
	SAY 31 LACS ^{34.85}	^{35.55 lacs}

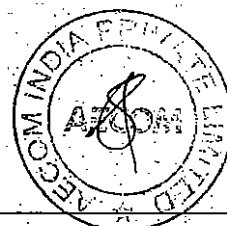


Sub Work I

Sub Head VII : Irrigation

S. No.	Description	Amount
1.	Providing, laying, jointing and testing PVC pipe line conforming to IS 4985 including cost of excavation etc. complete in all respect.	
	32 ¹⁵⁰ 150 ⁴⁵⁰	1144000/-
	a) 80 mm dia 1700 M @ Rs. 300 /M	5,28,000/- 0.68 Lacs
	b) 25 mm dia 114 M @ Rs. 150 /M	20,250/- 17,100/- 0.40 Lacs
2.	Providing and fixing 20 mm dia, irrigation hydrant valve complete in all respect. 57 Nos. @ Rs. 550/ each 31,350/- ³⁵⁰⁰	45000/- 31,350/- 2.00 Lacs
3.	Providing & fixing of valves 5 mm Dia 57 No's @ 400/-	22,800/-
4.	Provision for carriage of Material and other as foreseen items	100,000/- 50,000/-
5.	Providing & fixing including plots & other 5 No's @ 1000/-	5000/-
	Total	6,26,450/- 10,45,000/-
	SAY 6.5 LACS	
	13.50	

0.25
3.33 Lacs



Nishit Gupta
NISHIT GUPTA
ARCHITECT
LIC. No:- CA/91/13697

Sub Work II

Sub Head : Sewerage Scheme

S. No.	Description	Amount
1.	Providing, jointing, cutting & testing S.W. pipe Class 'A' and lowering into trenches including cost of excavation, bed concrete cost of manholes etc. complete in all respects	
	a) SW pipe 200 mm i/d avg. depth 0.9-1.5 M 255 M @ Rs. 800 1250 / M	204,000 3.19 lacs
	b) SW pipe 200 mm i/d avg. depth 1.6-3.0 M 482 M @ Rs. 1000 1400 / M	4,82,000 6.75 lacs
	c) SW pipe 200 mm i/d avg. depth 3.0-4.5 M 130 M @ Rs. 1500 1500 / M	1,95,000 1.95 lacs
	d) SW pipe 250 mm i/d avg. depth 3-4.5 M 10 M @ Rs. 1800 2000 / M	18,000 0.18 lacs
2.	Provision of lighting and watching etc	1,00,000
3.	Provision for cartage of material	1,00,000
4.	Provision for making connection with HUDA on master road	4,00,000 0.50 lacs
5.	Provision for temporary debris arrangement (810x80x) = 650	50,000
6.	Cost of 650 KID STP or 0.65 MLD	5,00,000 85.00 lacs
7.	Total	12,49,000
	Prov. for C.I./D.I. Pipe 150 mm Dia (STP to HUDA main line)	300,000
	Add 3% contingencies & PH charges	27,470
	Add 49% Deptt. Charges, Price Escalation Unforeseen, charge	612,010
	Total	18,98,480
	SAY 19 LACS	105.67 lacs
	Say Rs. 112.80 lacs	51.78 lacs
	175.00	157.45 lacs

(C.O. to abstract of cost of Sub-work No. 1)

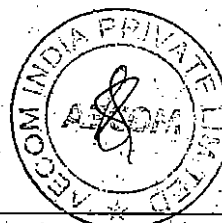


Sub Work III

Sub Head : Storm Water Scheme

S. No.	Description	Amount
1.	Providing, lowering, laying, jointing RCC pipe class NP2 with cement joint, manholes, specials into trenches including manholes, chambers etc. excavation, backfilling and disposal of surplus earth complete in all respect.	
	a) RCC pipe 400 mm i/d avg. depth 0-2 M 1359 M @ Rs. 1690 / M	23.78 lacs
	b) RCC pipe 500 mm i/d avg. depth 0-2 M 490 M @ Rs. 2150 / M	12.25 lacs
	c) RCC pipe 500 mm i/d avg. depth 2-4 M 45 M @ Rs. 2550 / M	
	d) RCC pipe 600 mm i/d avg. depth above 4 M 40 M @ Rs. 2750 / M	
2.	Provision for road gully & pipe connection 300 mm d	10,00,000
3.	Provision for lighting and watching	1,00,000
4.	Provision for timbering and shoring	2,00,000
5.	Provision for cartage of material	1,50,000
6.	Providing Rain Harvesting arrangements (approx 13.762 acre @ 1 lacs/acre)	14,00,000
7.	Provision for Connection with HUDA on master C.S. road	20,00,000
	Total	69.35 lacs
	Add 3% contingencies & PH charges	2.08 lacs
	Add 49% Deptt. Charges, Price Escalation Unforeseen, charge	71.43 lacs
	Total	35.00 lacs
	SAY 86 LACS	106.43 lacs

(C.O. to abstract of cost of Sub-work No. 1)



Sub Work No. IV

Sub Head: Road Work.

Road Area : 6 metre wide x 1640 long
9840 Sq.mtrs
Car Parking Area : 600 Sq.Mtr
Total Area : 10440 Sq.Mtr

PL see of/30.

S. No.	Description	Amount
1	Provision for leveling & earth filling as per site conditions 13.762 Acres @ 70000/- 100000/-	9,63,340/- 13,76,200/-
2.	i) Soling coat 100 mm thick (63-45) mm gauge compacted to 75 mm thick WBM conforming to MOT specification (Table 400-6, Grading No.2) 1044 sq.mtr @ 950/- Sub grad = WBM + GSB + 50 mm thick Bm, 20 mm ms	991,800/-
	ii) Wearing coat (Top coat) 100 mm thick (53-22.4) mm gauge compacted to MOT specifications (Table - 400-6, Grading No. 3) 1044 sq.mtr @ 950/-	991,800/-
	iii) 25 mm thick pre-mix carpet with seal coat 10440 sqm @ Rs. 180/Sqm. 2460	18,79,200/- 2,36,600/-
3.	Provision for kerbs & channels of CC 1:2, 5:5, 1500 M @ Rs. 350/m	5,25,000/- 7,50,000/-
4.	Provision for making approach and pavement to building Provision for C.C. Pavement, 2200 sqmt @ Rs. 300/- per sqmt. 500	6,60,000/- 1,00,000/-
5.	Provision for parking arrangement (L.S)	4,00,000/- 5,00,000/-
6.	Provision for carriage of material	2,00,000/- 1,00,000/-
7.	Prov for Traffic lighting & guide map/indicating L.S.	2,00,000/-
	Total	42,27,540/- 88,76,400/-
	Add 3% contingency & P.E. Charges	1,26,826/- 2,00,292/-
	Add 49% dept. charges, price escalation, unforeseen	20,71,495/- 44,79,911/-
	Total	64,25,867/- 1,36,22,611/-
	SAY 64.5 Lacs 136.25	

144.90 Lacs

14.76 Lacs

192.42 Lacs

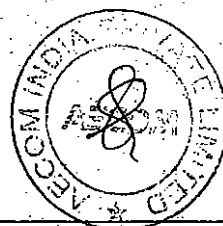
5.77 Lacs

198.19

97.11 Lacs

295.30

C.O. to final abstract of cost



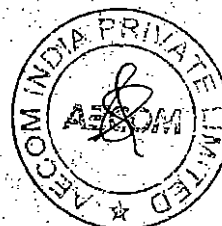
Sub Work No. V

Sub Head No. Street Lighting

S. No.	Description	Amount
1.	Providing lighting at surrounding area as per standard specifications of HVPN 13.762 acres @ Rs. 70000/acre <i>with 100000%</i>	9,63,340 <i>13,76,200</i> <i>13,76,200</i>
	Add 3% contingencies & P.E. Charges	28,989 <i>0.41</i> <i>4,12,861</i>
	Add 49% departmental charges, <i>pro escalation</i>	4,72,035 <i>14.17</i> <i>6,94,568</i>
	<i>unforeseen, admin charges</i>	<i>6.94</i> <i>21.11</i>
	Total	Rs. 14,64,276 <i>21.11</i> <i>21,11,205</i>
	SAY 15 LACS <i>21.15</i> <i>33.80</i>	

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C.O. to final abstract of cost



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LIC. No:- CA/91/13697

Sub Work No. VI

Sub Head No. Horticulture

S. No.	Description	Amount
1.	Development of Lawn Areas	
	a) Trenching of ordinary soil upto depth of 60 cm i/c removal & stacking of serviceable material & disposing by spreading and leveling within a lead of 50 M and making up the trench area for proper levels by filling with earth mixed with manure before and after flooding trench with water i/c cost of imported earth and manure.	
	b) Rough dressing of turfed 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 mowing in row 7.5 cm part in either direction. 17226.52 Sqm or 4.26 Acre	4.26 lacs
	d. 43,762 acres organized green @ Rs. 60000/acre 1.00 4.26 1.50 2.00	8,25,720 20,64,305 27,52,400
2.	Providing and planting trees along boundary @ 12 m interval. Total road length = 1640-340 No. of trees 1840/12 = 153 No. Say 283.30 Cost details: Excavation = 20 Manure = 40 Tree Plant = 40 Tree Guard = 200 Total Rs. = 300 750 Say 300 Nos	2.25 lacs 187,500
300	1840 Trees @ Rs. 200/- Each 250 750	6.51 lacs 40,800
	Total	0.21 8,66,520 6.71 lacs 22,51,800 29,29,900
	Add 3% contingencies & P.H. Charges	3.29 lacs 25,005 67,554 88,197
	Add 49% departmental charges, price escalation unforeseen, Admin. charges	10.06 lacs 4,24,595 1,13,648 1,48,376
	Total	43,17,110 24,55,837 45,11,865
	SAY 13.51 Lacs 34.55 Say Rs. 45.12 lacs	

C.O. to final abstract of cost



Sub Work No. VII

Sub Head No. MTC of services & Resurfacing of road

S. No.	Description	Amount
1.	MTC of w/s, sew swd, roads, street light, hort, etc., for period of 10 years including operation charges, full establishment etc., complete in all respects 13.762 acres @ Rs. 2.50 lacs per acre 5.00	34,40,500 6881000/-
2.	Provision for resurfacing of roads after 5 years i.e 100mm 10440 sq.m @ Rs. 180 per sq.m. 16100 350 400/-	18,79,200 64.40 3654000/-
3.	Provision for resurfacing of roads after 10 years 10440 sq.m @ Rs. 200 per sq.m. 16100 250 600/-	2,39,600 96.60 2654000/-
	Total	229.81 62,59,300 4489000/-
	Add 3% contingencies @ P.E Charges	6.89 1,87,770 425670/-
	Add 49% department charges	236.76 30,67,057 115.98 7164188/-
	Total	352.68 95,14,136 21778858/-
	SAY 95 Lakh 217.75	

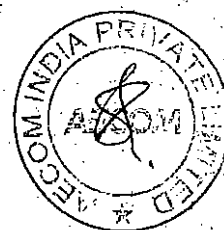
Say Rs. 352.70 lacs

C.O. to final assessment of cost



SUMMARY OF DESIGN REQUIREMENT

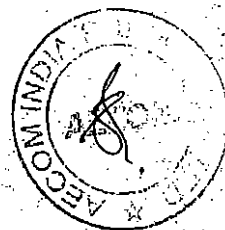
S. No.	Description		
1.	Total Population	4018	persons
2.	Total water requirement (Domestic)	127.5	KLD
3.	Total water requirement (Horticulture)	106.25	KLD
4.	U.G tank (Raw-300 KL, domestic-300 KL)	6	No.
5.	U.G Fire tank (600 KL)	4	No.
6.	No. of Tubewell	4	No.
7.	HP of each Tubewell	7.5	HP
8.	No. of WS boosting pumps	2	set
9.	Main electrical pumps	4	No.
10.	Sprinkler electrical fire pumps	2	No.
11.	Diesel fire pumps	2	No.
12.	Jokey fire pumps	4	No.
13.	Generating sets (KVA)	45	KVA



PROJECT : PARAS GROUP HOUSING AT SECTOR -106, GURGAON

SUBHEAD : SEWERAGE SCHEME - DESIGN CALCULATION.

S.No.	Line References	Length (M)	Water Consumption @ 172.5/ LPCD or 0.1725 KL (KLD) FOR H.SCH @ .045(KLD)			Average Discharge in Cusec @ 75% of Daily	Peak Discharge @ 3DWF In Cusec	Size of the Pipe (mm)	Gradient	Velocity (M/Sec)	Carrying Capacity (Cusec)	Road Level	BED LEVEL		Depth		Fall In Line (mm)
			Self	Branch	Total								Invert Level (for starting Manhole)	Invert Level (for next Manhole)	Starting (Depth) manhole	Last (Depth) manhole	
DESIGN STATEMENT OF SEWERAGE SYSTEM-ZONE-I																	
1	A - B	130	586		586	101.1	0.0009	200	150	0.75	0.53	216.00	214.50	213.63	1.50	2.37	0.86
2	B - C	65	940	586	1526	263.2	0.0023	200	150	0.75	0.53	216.00	213.63	213.20	2.37	2.80	0.43
3	C - K	130	0	1526	1526	263.2	0.0033	200	150	0.75	0.53	216.00	213.20	212.33	2.80	3.67	0.86
4	D - E	15	175		175	30.2	0.0008	200	150	0.75	0.53	216.00	214.50	214.40	1.50	1.60	0.10
5	E - F	50	265	175	440	75.9	0.0007	200	150	0.75	0.53	216.00	214.40	214.07	1.60	1.93	0.33
6	F - G	27	64	440	504	86.9	0.0006	200	150	0.75	0.53	216.00	214.07	213.89	1.93	2.11	0.18
7	G - H	30	0	504	504	86.9	0.0009	200	150	0.75	0.53	216.00	213.89	213.69	2.11	2.31	0.20
8	H - I	60	940	504	1444	249.1	0.0022	200	150	0.75	0.53	216.00	213.69	213.29	2.31	2.71	0.40
9	I - J	20	100	1444	1544	266.3	0.0023	200	150	0.75	0.53	216.00	213.29	213.15	2.71	2.85	0.13
10	J - K	15	1544	1544	1544	266.3	0.0023	200	150	0.75	0.53	216.00	213.15	213.05	2.85	2.95	0.10
11	K - STP	10	1526	1544	3070	529.6	0.0046	250	200	0.76	0.54	216.00	213.05	212.95	2.95	3.00	0.05
DESIGN STATEMENT OF SEWERAGE SYSTEM-ZONE-II																	
1	A - B	110	510		510	88.0	0.0008	200	150	0.75	0.53	216.00	214.50	213.77	1.50	2.23	0.73
2	B - E	110	340	510	850	146.6	0.0013	200	150	0.75	0.53	216.00	213.77	213.03	2.23	2.97	0.73
3	C - D	35	200		200	34.5	0.0003	200	150	0.75	0.53	216.00	214.50	214.27	1.50	1.73	0.23
4	D - E	40		200	200	34.5	0.0003	200	150	0.75	0.53	216.00	214.27	214.00	1.73	2.00	0.23
5	E - STP	30	850	200	1050	181.1	0.0016	200	150	0.75	0.53	216.00	214.00	213.80	2.00	2.20	0.20



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 LIC. No:- CA/91/13697

PROJECT : PARAS GROUP HOUSING AT SECTOR -106, GURGAON

SUBHEAD : STORM WATER DRAINAGE SCHEME - DESIGN CALCULATION

DESIGN STATEMENT OF STORM WATER DRAINAGE SCHEME

INTENSITY OF RAINFALL 0.40 MTR/HR

IMPERMEABILITY FACTOR, 0.5

FOR LANDSCAPE

MANNINGS CONSTANT 0.013 FOR RCC PIPES

PROPOSED PIPE DIA. IN MM

GRADIENT M/Sec

VELOCITY IN M/Sec

CAPACITY IN CUBIC METER/SEC

INVERT LEVEL (FOR STARTING MANHOLE)

INVERT LEVEL (FOR NEXT MANHOLE)

STARTING (DEPTH) MANHOLE

LAST (DEPTH) MANHOLE

FALL IN LINE (MM)

DESIGN STATEMENT OF STORM SYSTEM-ZONE-I

S. No.	Line References	Length	Catchment area In Acres	Discharge In (Cubic meter/sec)	Discharge In (Liter/sec)	Proposed Pipe Dia. In MM	Gradient M/Sec	Velocity In M/Sec	Capacity In (Cubic meter/sec)	Road Level	Invert Level (for starting Manhole)	Invert Level (for next Manhole)	Starting (Depth) manhole	Last (Depth) manhole	Fall in Line (MM)
1	A-B	35	0.415	0.0933	93.33	400	450	0.80	0.0500	216.00	215.4	215.3	1.208	1.207	0.1
2	B-C	60	0.150	0.0565	127.06	400	450	0.80	0.0500	216.00	215.3	215.2	1.208	1.208	0.1
3	C-D	70	0.350	0.0565	205.77	400	450	0.80	0.0500	216.00	215.2	215.0	1.508	1.610	0.2
4	D-E	60	0.220	0.0915	255.25	400	450	0.80	0.0500	216.00	215.0	214.9	1.610	1.711	0.1
5	E-F	60	0.220	1.355	304.72	400	450	0.80	0.0500	216.00	214.9	214.8	1.711	1.812	0.1
6	F-G	55	1.355	2.710	609.45	400	450	0.80	0.0500	216.00	214.8	214.6	1.812	1.914	0.1
7	G-H	50	0.210	2.920	656.68	500	550	0.84	0.0500	216.00	214.6	214.5	1.914	2.015	0.1
8	H-I	35	0.150	2.920	690.41	500	550	0.84	0.0500	216.00	214.5	214.3	2.015	2.116	0.1
9	I-J	40	0.250	3.320	746.63	500	550	0.84	0.0500	216.00	214.3	214.1	2.116	2.217	0.1
10	J-K	65	0.450	3.320	847.83	500	550	0.84	0.0500	216.00	214.1	213.9	2.217	2.318	0.1
11	K-L	60	0.250	0.250	56.22	400	450	0.80	0.0500	216.00	213.9	213.7	2.318	2.419	0.1
12	L-M	20	3.770	0.250	904.05	600	750	0.81	0.1145	216.00	213.7	213.5	2.419	2.520	0.1
13	M-N	50	0.300	0.300	67.47	400	450	0.80	0.0500	216.00	213.5	213.3	2.520	2.621	0.1
14	N-O	70	0.400	0.300	157.42	400	450	0.80	0.0500	216.00	213.3	213.1	2.621	2.722	0.1
15	O-P	50	0.250	0.700	213.64	400	450	0.80	0.0500	216.00	213.1	212.9	2.722	2.823	0.1
16	P-Q	60	0.220	0.220	49.48	400	450	0.80	0.0500	216.00	212.9	212.7	2.823	2.924	0.1
17	Q-R	95	0.550	0.220	173.16	400	450	0.80	0.0500	216.00	212.7	212.5	2.924	3.025	0.1
18	R-S	85	1.150	0.770	431.79	400	450	0.80	0.0500	216.00	212.5	212.3	3.025	3.126	0.1
19	S-T	25	0.210	1.920	479.01	400	550	0.72	0.0821	216.00	212.3	212.1	3.126	3.227	0.0
20	T-U	85	0.650	2.130	625.19	500	550	0.84	0.0821	216.00	212.1	211.9	3.227	3.328	0.2
21	U-V	40	0.250	2.780	681.41	500	550	0.84	0.0821	216.00	211.9	211.7	3.328	3.429	0.1
22	V-W	20	0.220	3.030	730.89	600	750	0.81	0.1145	216.00	211.7	211.5	3.429	3.530	0.1
23	W-X														

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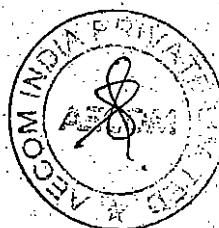
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PROJECT : PARAS GROUP HOUSING AT SECTOR -106, GURGAON

SUBHEAD : STORM WATER DRAINAGE SCHEME - DESIGN CALCULATION
DESIGN STATEMENT OF STORM WATER DRAINAGE SCHEME

DESIGN STATEMENT OF STORM SYSTEM-ZONE-II

S. No.	Line References	Length	Catchment area in Acres		Discharge In (Cubic meter/sec)	Proposed Pipe Dia. in MM	Gradient	0.013 Velocity in M/Sec	Capacity in (Cubic meter/sec)	Road Level	Bed Level		Depth		Fall in Line (MM)
			Self	Branch	Total						Invert Level (for starting Manhole)	Invert Level (for next Manhole)	Starting (Depth) manhole	Last (Depth) manhole	
1	A-B	100	0.550		0.550	0.1237	123.69	450	0.80	0.550	216.00	214.8215.4	0.6	0.8	0.2
2	B-C	120	0.600	0.550	1.150	0.2586	258.62	450	0.80	0.550	216.00	214.9	1.5	1.6	0.3
3	C-D	100	1.000	1.150	2.150	0.4835	483.51	450	0.80	0.550	216.00	214.9	1.7	1.8	0.2
4	D-E	115	0.850	2.150	3.000	0.6747	674.67	450	0.80	0.550	216.00	214.7	1.8	1.9	0.3
5	E-F	65	0.220	3.000	3.220	0.7241	724.14	450	0.93	0.088	216.00	214.3	1.6	1.7	0.1
12	TO OUT FALL	20			3.220	0.7241	724.14	750	0.72	0.0763	216.00	214.3			
												TO MUNICIPAL EXTERNAL LINE			



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PROJECT : 'PARAS' GROUP HOUSING PROJECT, SECTOR-106, GURGAON

SUBHEAD : WATER SUPPLY SCHEME - DESIGN CALCULATION

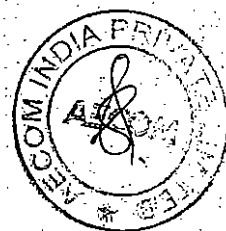
HYDRAULIC STATEMENT OF WATER SUPPLY

Sl. No.	Line References	Self LPD	Branch LPD	Total LPD	Domestic water requirement@ 127.5 lpcd	Total water requirement in KLD	Discharge per hr considering 8 hrs pumping (kl/hr)	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 Upper End Lower End	Head At Lower End (M)
FOR ZONE-1														
1.	Plantroom 1 TO TOWER-A	101085		101085		101	12.6	100	10.00	45	0.450	216.000	300.00	299.550
2.	Primary School to TowerD	30000		30000		30	3.8	40	5.50	75	0.413	216.000	300.00	299.588
3.	Tower D to Tower C	75555	30000	105555		106	13.2	50	5.50	120	0.660	216.000	300.00	299.340
4.	Tower C to Tower B	162150	105555	267705		268	33.5	80	5.40	215	1.161	216.000	300.00	298.839
5.	Tower B to Plant Room	162150	267705	429855		430	53.7	80	3.25	105	0.341	216.000	300.00	299.659
6.	TOTAL			429855		430	53.7	100	1.50	40	0.060	216.000	300.00	299.940
7.	Municipal to Plantroom	530940		530940		531	66.4	100	1.05	150.00	0.16	216.000	221.00	220.843
HYDRAULIC STATEMENT OF WATER SUPPLY														
Sl. No.	Line References	Self LPD	Branch LPD	Total LPD	Domestic water requirement@ 127.5 lpcd	Total water requirement in KLD	Discharge per hr considering 8 hrs pumping (kl/hr)	Size of the Pipe	Loss Of Head in M. in 1000 M	Length	Loss Of Head in Line	Formation Level At Lower End	Hydraulic Level Upper End Lower End	Head At Lower End
FOR ZONE-2														
1.	EWS-2 TO Tower E	10000		10000		10	1.3	40	5.00	195	0.975	216.000	275.00	274.025
2.	Tower E to Tower F	87975	10000	97975		98	12.2	50	4.30	105	0.452	216.000	275.00	274.549
3.	Tower F to EWS-1	58650	97975	156625		157	18.6	65	3.70	40	0.148	216.000	275.00	274.852
4.	EWS-1 TO Plant room 2	34500	156625	191125		191	23.9	80	2.50	45	0.113	216.000	275.00	274.888
11	Municipal to Plantroom	156625		156625		157	19.6	80	1.05	50.00	0.05	216.000	221.00	220.948
														58.03
														58.55
														58.85
														58.89
														4.95

$$Ht \text{ of Bulb} = 72 + 10 \text{ f. loss} + \text{Bisect} =$$

$$= 72 + 8 + 8 = 88 \text{ m}$$

$$= 90 \text{ m.}$$



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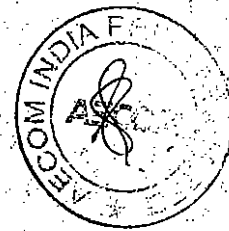
ARCHITECT

LIC. No.:- CA/91/13697

PROJECT : 'PARAS' GROUP HOUSING PROJECT, SECTOR-106, GURGAON

SUBHEAD : WATER SUPPLY SCHEME - DESIGN CALCULATION

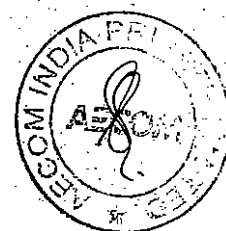
PROJECT : 'PARAS' GROUP HOUSING PROJECT, SECTOR-106, GURGAON													
SUBHEAD : WATER SUPPLY SCHEME - DESIGN CALCULATION													
HYDRAULIC STATEMENT OF FLUSHING WATER SUPPLY													
Sl. No.	Line References	Flushing water requirement@ 127.5 lpcd		Total water requirement In KLD	Discharge per hr considering 8 hrs pumping (kl/hr)	Size of the Pipe (mm)	Loss Of Head In 1000 M	Length (M)	Loss Of Head In Line (M)	Formation Level At Lower End	Hydraulic Level		Head At Lower End (M)
		Self LPD	Branch LPD								Total LPD	Upper End	
	FOR ZONE-1												
1.	TOWER-A TO TOWER-B	26370		26370	3.3	100mm	10.00	150	1.500	216.000	300.00	298.500	82.50
2.	TOWER-B TO STP	42300	26370	68670	8.6	50	5.50	160	0.880	216.000	300.00	299.120	83.12
3.	Primary Sctol to Tower-D	5000		5000	0.6	40	5.50	75	0.413	216.000	300.00	299.588	83.59
4.	Tower-D to Tower-C	20000	5000	25000	3.1	50	5.40	115	0.621	216.000	300.00	299.379	83.38
5.	Tower C to STP	42300	25000	67300	8.4	65	3.25	50	0.163	216.000	300.00	299.838	83.84
HYDRAULIC STATEMENT OF FLUSHING WATER SUPPLY													
Sl. No.	Line References	Flushing water requirement@ 127.5 lpcd		Total water requirement In KLD	Discharge per hr considering 8 hrs pumping (kl/hr)	Size Of the Pipe	Loss Of Head In 1000 M	Length	Loss Of Head In Line	Formation Level At Lower End	Hydraulic Level		Head At Lower End
		Self LPD	Branch LPD								Total LPD	Upper End	
	FOR ZONE-2												
1.	EWS-2 TO Tower E	3000		3000	0.4	100mm	5.00	195	0.975	216.000	275.00	274.025	58.03
2.	Tower E to Tower F	15000	3000	18000	2.3	50	4.30	105	0.452	216.000	275.00	274.549	58.55
3.	Tower F to EWS-1	23000	18000	41000	5.1	65	3.70	40	0.148	216.000	275.00	274.852	58.85
4.	EWS-1 TO Plant room 2	9000	41000	50000	6.3	90mm	2.50	20	0.050	216.000	275.00	274.950	58.95



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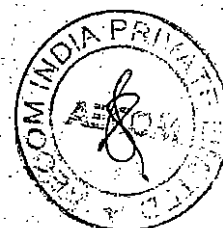
	A	B	C	D	E	F	G	H	I
1	PROJECT : 'PARAS GROUP HOUSING PROJECT, SECTOR-106, GURGAON								
2									
3	SUBHEAD : SEWERAGE SCHEME								
4	MATERIAL STATEMENT SEWERAGE								
5	S.No.	Line References	Length of Line	200 mm			250 mm		
6				0 to 1.50 m	1.5 to 3.0 m	3.0 to 4.5 m	0 to 1.50 m	1.5 to 3.0 m	3.0 to 4.5 m
7	ZONE-I								
8	1	A-B	130	130 ✓					
9	2	B-C	65		65				
10	3	C-K	130 ✓			130.0			
11									
12	4	D-E	15 ✓	15					
13	5	E-F	50 ✓		50				
14	6	F-G	27 ✓		27				
15	7	G-H	30 ✓		30				
16	8	H-I	60 ✓		60				
17	9	I-J	20 ✓		20				
18	10	J-K	15 ✓		15				
19	11	K-STP	10 ✓						10
20	ZONE-II								
21	1	A-B	110 ✓	110					
22	2	B-E	110 ✓		110				
23									
24	3	C-D	35 ✓		35				
25	4	D-E	40 ✓		40				
26	5	E-STP	30 ✓		30				
27									
28									
29	TOTAL			255.0	482.0	130.0	0.0	0.0	10.0

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	A	B	C	D	E	F	G	H
1	PROJECT : 'PARAS' GROUP HOUSING PROJECT, SECTOR-106, GURGAON							
2	SUBHEAD : STORM WATER DRAINAGE SCHEME							
3	MATERIAL STATEMENT STORM WATER DRAINAGE							
4	Sl. No.	Line References	400 mm (0-2M DEPTH) (M)	450 mm (0-2M DEPTH) (M)	450 mm (2-4 M DEPTH) (M)	500 mm (0-2 M DEPTH) (M)	500 mm (2-4 M DEPTH) (M)	600 mm (2-4 M DEPTH) (M)
5	STORM WATER FOR ZONE-I							
6	1	A-B	35 ✓					
7	2	B-C	60 32 ✓					
8	3	C-D	70 ✓					
9	4	D-E	60 ✓					
10	5	E-F	60 ✓					
11	6	F-G	55 ✓					
12	7	G-H				50 ✓		
13	8	H-I				35 ✓		
14	9	I-J				40 ✓		
15	10	J-K				65 80 ✓		
16	11	K1-K				60.0 85		
17		K-OUTFALL						20.0 ✓
18	12	L-M	50 ✓					
19	13	M-N	30 60				45.0	
20	14	N-O	50 ✓					
21	15	O-U	60 ✓			25.0		
22	16	P-Q	95 132 ✓					
23	17	Q-R	85 ✓					
24	18	R-S HWP	25					
25	19	F-B	53 ✓			85.0		
26	20	U-O T	50 ✓			40.0		
27	21	G-OUTFALL	40 28					20.0 ✓
28	ZONE-II							
29	1	A-B	100.0 ✓					
30	2	B-C	120.0 ✓					
31	3	C-D	100.0 ✓			40.0		
32	4	D-E	115.0 ✓					
33	5	E-F				65 85.0		
34	6	F-OUTFALL				20.0 ✓		
35	TOTAL		1359.0	0.0	0.0	490.0	45.0	40.0

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	A	B	C	D	E	F	G	H
1	PROJECT : 'PARAS' GROUP HOUSING PROJECT, SECTOR-95, GURGAON							
2	SUBHEAD : WATER SUPPLY EXTERNAL							
3	MATERIAL STATEMENT DOMESTIC WATER SUPPLY							
4	Sl. No.	Line References	Length of Pipes In Mtrs	Size of Pipes				
5		ZONE -1		40MM DIA	50MM DIA	65MM DIA	80 MM DIA	100 MM DIA
6	1	Plantroom 1 TO TOWER-A	45		45			45
7	2	Primary School to TowerD	75	75				75
8	3	Tower D to Tower C	120		120			120
9	4	Tower C to Tower B	215			215		215
10	5	Tower B to Plant Room	105				105	105
11	6	MUNICIPAL TO PLANT ROOM	350					350
12		CONNECTING LINE	350					350
13		ZONE-2						
14	1	EWS-2 TO Tower E	195	195				195
15	2	Tower E to Tower F	105		105			105
16	3	Tower F to EWS-1	40	40				40
17	4	EWS-1 TO Plant room 2	45				45	45
18	5	Municipal to Plantroom	50				50	50
19								
20		TOTAL	1145	310	270	215	200	150

1145 m

995 m

+ 350

1345 m

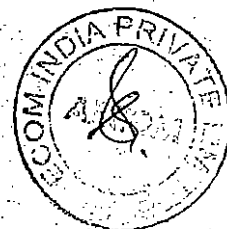
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	A	B	C	D	E	F	G	H
1	PROJECT : 'PARAS' GROUP HOUSING PROJECT, SECTOR-95, GURGAON							
2	SUBHEAD : FLUSHING WATER SUPPLY EXTERNAL							
3	MATERIAL STATEMENT FLUSHING WATER SUPPLY							
4	Sl. No.	Line Referances	Length of Pipes in Mtrs	Size of Pipes				
5		ZONE -1		32MM DIA	40MM DIA	50MM DIA	65MM DIA	80 MM DIA
6	1	TOWER-A TO TOWER-B	150		150			150
7	2	TOWER-B TO STP	160			160		160
8	3	Primary Schol to Tower-D	75		75			75
9	4	Tower-D to Tower-C	115			115		115
10	5	Tower C to STP	50				45	45
11		ZONE-2						
12	1	EWS-2 TO Tower E	195		195			195
13	2	Tower E to Tower F	105			105		105
14	3	Tower F to EWS-1	40		40			40
15	4	EWS-1 TO Plant room 2	20				20	20
16								
17								
18		TOTAL	910		460	380	65	0

910 m

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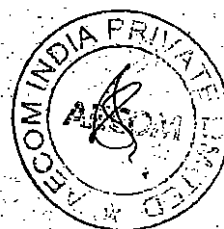
PROJECT :PARAS GROUP HOUSING AT GURGAON					
MATERIAL STATEMENT FOR GARDEN HYDRANT RING MAIN PIPE					
S. No.	Sector	Line Referances	80 mm (M)	25 mm (M)	Garden Hydrants (No.)
	ZONE-I				
1	TOWER-A TO TOWER-B	External Garden hydrant ring	320.00	24.00	12
2	TOWER-B TO TOWER-C		215.00	14.00	7
3	TOWER-C TO CLUB HOUSE		145.00	10.00	5
4	CLUB HOUSE TO TOWER-D		285.00	12.00	6
5	TOWER-D TO TOWER-A		350.00	24.00	12
	ZONE-II				
1	TOWER-F TO TOWER-E	External Garden hydrant ring	210.00	16.00	8
2	TOWER-E TO TOWER-F		235.00	14.00	7
		TOTAL	1760.0	114.0	57

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PROJECT :PARAS GROUP HOUSING AT GURGAON					
MATERIAL STATEMENT FOR FIRE HYDRANT RING MAIN PIPE					
S. No.	Sector	Line References	150 mm (M)	80 mm (M)	FIRE Hydrants (No.)
	ZONE-I				
1	TOWER-A TO TOWER-B	External fire hydrant ring	290.00	10.00	5
2	TOWER-B TO TOWER-C		225.00	12.00	6
3	TOWER-C TO CLUB HOUSE		150.00	6.00	3
4	CLUB HOUSE TO TOWER-D		280.00	12.00	6
5	TOWER-D TO TOWER-A		325.00	12.00	6
	ZONE-II				
1	TOWER-F TO TOWER-E	External fire hydrant ring	210.00	8.00	4
2	TOWER-E TO TOWER-F		230.00	12.00	6
		TOTAL	1710.0	72.0	36

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SUB:- Approval of service plan /estimate of Group Housing Colony on area measuring 13.762 acres (License No. 61 of 2012 dated 21.06.2012) in Sec- 106, Gurgaon Manesar Urban Complex being developed by Sepset Properties Ltd. and others.

Technical note and comments:-

1. All detailed working drawings would have to be prepared by the colonizer for Integrating the internal services proposals with the master proposals of town.
2. The correctness of the levels will be the sole, responsibility of the colonizer for the integration of internal proposals, with the master proposals, of town and will be got confirmed before execution.
3. The material to be used shall the same specifications as are being adopted by HUDA and further shall also confirm to such directions, as issued by Chief Engineer, HUDA from time to time.
4. The work shall be carried out according to Haryana PWD specification or such specifications as are being followed by HUDA. Further it shall also confirm to such other directions, as are issued by Chief Engineer, HUDA from time to time.
5. The colonizer will be fully responsible to meet the demand of water supply and allied services till such time these are made available by State Government/ HUDA. All link connections with the State Government/ HUDA system and services will be done by the colonizer. If necessary extra tube-wells shall also be installed to meet extra demand of water beyond the provision according to EDC deposited.
6. Structural design & drawings of all the structures, such as pump chamber, boosting chamber, RCC OHSR underground tanks quarters, manholes chamber, sections of RCC pipes sewer and SW pipes, sewer, ventilating shafts for sewerage and Masonry Ventilation Chamber for Chamber for storm water drainage, temporary disposal/ arrangement etc. will be as per relevant I.S codes and PWD specifications colonizer himself will be responsible for structural stability of all structures.
7. Potability of water will be checked and confirmed and the tube-wells will be put into operation after getting chemical analysis of water tested.

SFL
↓
28/9
F.F.(W)
L

C.E. No. 13440

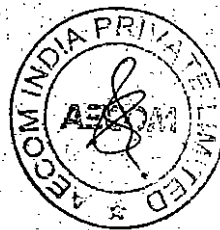
Dated:- 11/10/13

8. Only C.I/D.I pipes will be used in water supply and flushing system, UPVC/HDPE pipe for irrigation purposes.
9. A minimum 100 i/d C.I/D.I, 200mm i/d SW and 400mm id RCC NP-3 pipes will be used for water supply, sewerage and storm water drainage respectively.
10. Standard X-section for S.W. pipes sewer, RCC pipes sewer etc. will be followed as are being adopted in Haryana Public Health Engineering Deptt.or HUDA.
11. The X-section, width of roads, will be followed as approved by the Chief Town Planner, Haryana, Chandigarh. The kerbs and channels will also be provided as per approved X-section and specifications.
12. The specifications for various roads will be followed as per IRC/MORTH specifications.
13. The wiring system of street lighting and specifications of street lighting fixture will be as per relevant standards.
14. This shall confirm to such other conditions as are incorporated in the approved estimate and the letter of approval.

For
Executive Engineer (W),
Chief Administrator, HUDA,
Panchkula

PROJECT : PARAS GROUP HOUSING AT GURGAON**MATERIAL STATEMENT FOR DOMESTIC (MUNICIPAL) WATER SUPPLY PIPE**

S. No.	Sector	Line References	100 mm (Domestic) (M)	Sluice Valve 100 mm (No.)
1	ZONE-I	Municipal to Plant Room	100.00	4.00
2	ZONE-II	Municipal to Plant Room	50.00	2.00
		TOTAL	150.0	6



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PROJECT : PARAS GROUP HOUSING AT GURGAON

MATERIAL STATEMENT OF BOREWELL RISING MAINS

S. No.	Line	Discharge	Length		Loss Of Head in M. in 1000 M	Friction		Velocity ft/s.
			(Meter)	100mm		Loss	M	
1	ZONE-I	14 KL / hr.	100		0.1	0.01		1.4
2	ZONE-II	14 KL / hr.	150		0.1	0.015		1.4




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