

# SERVICES PLANS & ESTIMATE

"RESIDENTIAL PLOTTED COLONY "  
AREA -6.225 acres)"  
SECTOR-59

AT GURUGRAM (Haryana)

M/s CORONA REALTORS PVT. LTD

GURUGRAM

**PROJECT REPORT/ESTIMATES FOR PROVIDING INTERNAL SERVICES e.g. WATER SUPPLY, SEWERAGE & STORM WATER DRAINAGE ETC. IN RESPECT OF PLOTTED RESIDENTIAL COLONY , SECTOR - 59, AT GURUGRAM.**

PLOTTED COLONY is proposed at sector 59, at Gurugram for development by M/s CORONA REALTORS PVT. PVT, GURUGRAM

**Water Supply**

**1 Source**

The source of water supply in this area is tubewells as the underground water is sweet and fit for human consumption, moreover, the water is available at reasonable depth. The average yield of tubewell with 60'–80' stainer will be about 36000 lph per hour. The recharging of under ground water table in this belt is stated to be good. However still we shall resort to rain water harvesting system to keep up the recharging system. The number of tubewells required for the above area has been worked out to 1 Nos and the tubewell will be bored in tune with growth of demand to avoid absence of the tubewells. The ultimate requirement of tubewells includes provision of 10% standby.

**2 Design**

The scheme has been designed for population of 3977 persons. The rate of water supply per head per day has been taken assumed as 172.5 for residential part and 45 litres per head per day for non residential part as per HSVP norms. In addition to above necessary provision of water for parks etc. have been taken into account for calculating the maximum number of tubewell water required.

**3 Pump Chambers and Pumping Machinery**

It is proposed to equip each tubewell with an electrically driven pumping set-Ejecto type or submersible pump capable of delivering about 15000 litre per hour. It is also proposed to equip 1 Nos pumping sets with stand by diesel gen set engines for operation during failure of electricity at three locations.

**4 Under Ground Storage**

Underground storage tank provision has been made for 250 KL in two compartments near the UGSR, which caters for the present and of future requirement. The water for domestic water compartment shall over flow from the fire compartment of 250 KL so that the water in the fire compartment also remains fresh.

**5     Boosting Station**

The boosting station is being planned near UGSR catering to the above requirement.

**6     Distribution System**

The distribution systems for this development are has been designed to supply @ 172.5 LITRES PER PER PERSON AND 45 Litres per head per day @ 3 times the average rate of flow on 'Hazen William's formula with C-120. Necessary provision for laying D.I. CLASS K9 pipes only conforming to relevant IS standards along with valves and specials has been made in this estimate. The minimum terminal head at any point in this system will be about 27.00 metres . Minimum pipe diameters for distribution are kept as 80 mm dia.

**7     Rising Mains**

Rising mains from HSVP water main on sector road to water works have also been designed and provision for 80 mm i/d D.I. pipe line has been made in this estimate.

**8     Sewerage**

The sewer lines have been designed for 3 times average DWR in relation to the water supply demand assuming that 75% fo the domestic water supply shall find its way into the proposed sewer RCC NP-3. pipe sewers have been proposed designed to run half full. The sewers have been designed on 2.50 ft. per second velocity ie. Self cleansing velocity. Necessary provisions for laying S.W. pipes manholes etc. has been made in this estimate.

**9     Storm Water Drainage**

The storm water drain is being designed to carry 6.25 mm rain fall per hour. Also suitable provisions are contemplated in our scheme to ensure better recharging of under ground water table in the area. RCC Hume pipe drain with minimum 400 mm dia is proposed in this area.

**10    Roads**

The roads in the colony are being planned such that minimum width of road provided is 7 m carrier road leading to higher width of roads. The roads shall be premixed 20 mm bituminous layer over 22.5 cm avg. water bound macadam over 25.5 cm thick (GSB) as per MORTH specs..

**11 Street Lighting**

The provision has been made on lump sum basis

**12 Horticulture**

The usual provision of road side plantation of trees with tree guards has been made for all roads. The parks shall also be developed by providing lawns etc.

**13 Specifications :**

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

**14 Rates**

Estimates for providing services in this pocket has been prepared on the recent market rates.

**15 Cost**

The total cost of development in this Project phase one including various PH & B & R services works out to Rs 355.56 Lacs which includes 3% contingency and P.E. charges and 49% departmental charges, Price escalation, unforeseen, Admn. charges also.

The cost per gross acre for this phase works out to Rs. 57.12 Lacs/acre which covers the provision of services like water supply, sewerage, storm water drainage, roads, street lighting and plantations including plantations maintenance thereof as well as future expansion whatsoever indicated.

**AREA 6.225 ACRES**  
**FINAL ABSTRACT OF COST**

1.	SUB WORK NO. I	WATER SUPPLY	RS.	214.82	Lacs.
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2.	SUB WORK NO. II	SEWERAGE SCHEME	RS.	191.25	Lacs.
3.	SUB WORK NO. III	STORM WATER DRAIN	RS.	156.53	Lacs.
4.	SUB WORK NO. IV	ROAD WORK	RS.	239.96	Lacs.
5.	SUB WORK NO. V	STREET LIGHT	RS.	26.02	Lacs.
6.	SUB WORK NO. VI	HORTICULTURE	RS.	34.66	Lacs.
7.	SUB WORK NO. VII	MAINTANCE CHARGES & RESURFACING OF ROADS 10 years i/c resurfacing of roads after 1st 5 years & 2nd 5 years.	RS.	136.55	Lacs.

**TOTAL RS. 999.79 Lacs.**

**COST/GROSS ACRE (IN LACS/ ACRE)**

**Total RS. 160.61 Lacs./ acre**

**RESIDENTIAL PLOTTED COLONY, SECTOR - 59, GURUGRAM**  
**AREA 6.225 ACRES**

**WATER SUPPLY ABSTRACT OF COST**

Sub Head 1	Head Works	Rs.	<b>72.00</b>	Lacs.
Sub Head 2	Pumping Machinery	Rs.	<b>16.30</b>	Lacs.
Sub Head 3	Distribution System	Rs.	<b>52.11</b>	Lacs.

	<b>Total</b>	<b>Rs.</b>	<b>140.41</b>	<b>Lacs.</b>
Add 4% Contingencies		<b>Rs.</b>	<b>5.62</b>	<b>Lacs.</b>
Add 49% Departmental Charges		<b>Rs.</b>	<b>68.80</b>	<b>Lacs.</b>
	<b>Total</b>	<b>Rs.</b>	<b>214.82</b>	<b>Lacs.</b>
<b>C.O. to Final Abstract of cost</b>		<b>Say</b>	<b>214.82</b>	<b>Lacs.</b>

**RESIDENTIAL PLOTTED COLONY, SECTOR - 59, GURUGRAM**  
**AREA 6.225 ACRES**

**DESIGN CALCULATION**

**Daily water requirement**

**A NO OF RESIDENTIAL PLOTS = 101**

**NO OF PERSONS @ 18 PERSON PER plot**

**TOTAL POPULATION**

**1818**

**WATER DEMAND =@172.5 per person (A)**

**313605 Liters**

**B Commercial**

**317 Person**

Commercial Building (951.28 sqm @ 3 sqmt/ person

20% staff / shopkeepers

**63.4 Person**

For staff @ 45 lpcd

**2853 Liters/**

80% Visitors

**253.6 Person**

For staff @ 15 lpcd

**3804 Liters/**

**Total Water demand for commercial (B)**

**6657 Liters/**

**c Community Building =2550.24 sqm area**

**2550.24 SQM**

For community building @ 1.4 sqmt / person	1821.6	Person
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<b>Water Demand @ 15 lpcd</b>	<b>45540</b>	<b>Liters</b>
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Maintenance Staff (Such as Gardener, ESS Staff, Security Guards etc.)	20	Person
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<b>@45 LPCD</b>	<b>900</b>	<b>Liters</b>
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<b>Total water Demand cor community building ( C )</b>	<b>46440</b>	<b>Liters</b>
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**Liters**

<b>Total Water Demand For 6.225 acre plotted development (A + B + C)</b>	<b>366702</b>
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**TOTAL WATER DEMAND FOR PLOTTED COLONY = 366.702 M3 PER DAY**

<b>TOTAL WATER REQUIREMENT OF COLONY</b>	<b>370</b>	<b>M3/DA</b>
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<b>Total water required</b>	<b>370.00</b>	<b>KLD</b>
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### **Tubewell**

I Assuming working hours of tubewells	8	hours
Assuming discharge/hour of each tubewell	15	KL/hours

<b>Total domestic demand</b>	<b>370.00</b>	<b>KLD</b>
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No. of tubewells required	370.00	/8/15	3.08
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Add 5% standby			0.15
		Total	<u>3.24</u>

It is proposed to provide 1  
Nos. Tube well to cater the  
present requirement

**Pumping machinery for  
tubewell**

II	Gross working load	=	45.00	m
	Average fall in SL	=	3.05	m
	Depression head	=	6.10	m
	Friction loss in main	=	2.50	m
		=	56.65	m
	Say	=	60.00	m

BHP =  $250(\text{lpm}) \times 60 \times 4500 \times 0.6$  = 5.50 BHP

With 60% efficiency Say 6 BHP

**Underground Tank**

III	Daily requirement for domestic use	=	370.00	KL
	Capacity of under ground tank			
	16 hours storage	370.00	x 16 / 24	= 246.67 KL
			Say	250.00 KL
			Total	250.00 KL



It is proposed to provide under ground tank of capacity 250KL.

This tank will have two compartments, for domestic use.

## BOOSTING MACHINERY

### IV

Daily requirement for domestic use			=	370.00	KL
Assuming 8 hours running one pumps (with one standby)1w+1s					
Discharge/hour	370.00	/ 8 / 1	=	46.25	KL/HR
Head of pump					
i) Suction lifts			=	0.00	m
ii) Friction loss in main & specials			=	10.00	m
iii) Clear head			=	25.00	m
iv) residual head				15.00	
			=	50.00	m
<b>BHP of motor</b>	46.25	x1000 x35/4500 x60 x0.60		14.27	HP
		SAY	=	4.00	HP
<b>Gen Set</b>	Nos.	HP			
Pumps	1	4.0	=	4.00	HP
Tubewell	1	6	=	6.00	HP
Lighting			=	10.00	HP
				20.00	HP
or	20	x0.746x1.50		22.38	KVA
		Say		<b>25.00</b>	<b>KVA</b>

**RESIDENTIAL PLOTTED COLONY, SECTOR - 59, GURUGRAM**  
**AREA 6.225 ACRES**

S. No.	Description	Unit	Qty	Rate	Amount
<b>Sub-work-1</b>					
<b>Sub Head I</b>				<b>Water Supply</b>	
				<b>Head Works</b>	
1	Boring and installing 510 mm i/d tubewells with reverse/direct rotary rig complete with pipe strainer to a depth of about 100 m. complete	Nos.	1	2,000,000	20.00 Lacs
2	Constructing pump chambers as per standard design of PWD PH/HUDA of size 4.90x4.25 m	Nos.	1	500,000	5.00 Lacs
3	Construction of boundary wall gate around the Tubewell site				
a)	Water Works	Nos	1	2,000,000	20.00 Lacs
b)	Tubewells	Nos	1	250,000	2.50 Lacs
4	Provision of footpath hedges and lawns at tubewell	Nos	1	200,000	2.00 Lacs
5	Construction of boosting chambers of suitable size along with under ground tank of capacity 100 KL, pumping machinery and generating set etc. complete in all respects.				

	Details of boosting station					
i)	construction of boosting chamber	LS			5.00	Lacs
ii)	UG tank 250 KL capacity incl. 100 KL in two compartments	KL	250	7000.00	17.50	Lacs

**C.O. to Abstract of Cost Water Supply** **72.00 Lacs**

**Say 72.00 Lacs**

## Sub Head II

## Pumping Machinery

1	Provision for cheap pressure type chlorination plant complete	Nos.	1	100,000	1.00	Lacs
2	Provision for making foundations & erection of pumping machinery	Nos.	1	30,000	0.30	Lacs
3	Provision for pipes, valves & specials inside the pump chamber	Nos.	1	50,000	0.50	Lacs
6	Provision for electric services connection including electric fittings for tubewells chambers complete including cost of Transformer and erection	LS			1.00	Lacs
7	Providing and installing centrifugal boosting pumping set, capable of delivering water at 50 M head complete in all respects (1 working + 1 standby)	Set	1	1,000,000	10.00	Lacs
8	Providing Gen set 25 KVA (working + standby)	Nos.	1	300,000	3.00	Lacs
9	Provision for carriage for materials and other unforeseen items.	Ls			0.50	Lacs

**C.O. to Abstract of Cost Water Supply****16.30 Lacs****Say 16.30 Lacs****Sub Head III****Distribution System/Rising Main**

1	Providing, laying, jointing & testing D.I. Class K9 pipes including cost of excavation complete as per ISI marked.					
i)	100 mm dia	M	1,500	2400.00	36.00	Lacs
2	Providing and fixing sluice valves including cost brick masonry chambers complete in all respects.					
i)	100 mm i/d	Nos.	8	15000.00	1.20	Lacs
3	Providing and fixing air valves and scour valves including cost of brick masonry chamber.	Nos.	2	15000.00	0.30	Lacs
4	Providing and fixing indicating plates for sluice valve, air valve etc.	Nos.	8	1000.00	0.080	Lacs
5	Provision for carriage of material	LS			4.00	Lacs
7	Provision for cutting the roads and making to its original conditions.	LS			5.00	Lacs
8	Rising Main from HUDA B.S. to Site in future.	LS			5.00	Lacs
9	Provision for rising main from tubewells to UG Tank					
i)	80 mm i/d	M	30	1750.00	0.53	Lacs

**C.O. to Abstract of Cost Water Supply****52.11 Lacs**

Say 52.11 Lacs

**RESIDENTIAL PLOTTED COLONY, SECTOR - 59, GURUGRAM**

**AREA 6.225 ACRES**

S. No.	Description	Unit	Qty	Rate	Amount
<b>Sub Work No. II</b>		<b>Sewerage Scheme</b>			
1	Providing, lowering, jointing, cutting salt glazed stone ware/RCC NP3 pipes and specials into trenches including cost of excavation, bed concrete lot of manholes complete.				
i)	<b>200 mm i/d</b>				
a)	Average depth up to 3.0 m	M	1500	2000.00	30.00 Lacs.
2	Capacity of STP @ 80% of Daily Water Requirement = 366.702 KLD * 0.8= 293.36 KLD Say = 300 KLD Constructing Sewage treatment including all civil works, sump pits and mechanical equipments in phase wise				
	300 KLD	NOS	1	6500000.00	65.00 Lacs.
3	Provision for providing oblique junctions	LS			7.00 Lacs.
4	Provision for temporary timbering etc.	LS			7.00 Lacs.
5	Provision for providing and fixing vent shaft at suitable places as per PH requirements	LS			7.00 Lacs.

6	Provision for Rising Main	LS		4.00	Lacs.
7	Provision for cutting of roads and carriage of materials etc. and other unforeseen charges	LS		5.00	Lacs.
	Total			125.00	Lacs.
	Add 3% contingencies and P.E. charges			5.00	Lacs.
	Add 49% Deptt. Charges, price escalation, unforeseen, Admn. charges			61.25	Lacs.
			<b>Total</b>	<b>191.25</b>	<b>Lacs.</b>
	<b>C.O. to Final Abstract of cost</b>		<b>SAY</b>	<b>191.25</b>	<b>Lacs.</b>

**RESIDENTIAL PLOTTED COLONY, SECTOR - 59, GURUGRAM**  
**AREA 6.225 ACRES**

S. No.	Description	Unit	Qty	Rate	Amount
<b>Sub Work No. III</b>		<b>Storm Water Drain</b>			
1	Providing, lowering, jointing, cutting RCC NP3 pipes and specials into trenches including cost of excavation cost of manholes, ventilating chambers etc. complete in all respects.				
i)	<b>400 mm i/d</b>				
a)	Average depth upto 2.0 m	M	859	4500.00	38.66 Lacs.
ii)	<b>450 mm dia i/d</b>				

a)	Average depth upto 2.0 m	M	10	5500.00	0.55	Lacs.
2	Provision for road gullies	nos	110	6000.00	6.60	Lacs.
3	Constructing 4.0x4.0x 4.0 rain water harvesting pits including boring & lowering of 160 OD uPVC pipe upto 20 meter with excavation of earth, filling of bajari along the PVC pipes and chamber. The brick ballast 40 size also filled chamber.	Item	6	375000.00	22.50	Lacs.
4	Provision for lighting, watching and temporary diversion of traffic	LS			15.00	Lacs.
5	Provision for cutting of roads and carriage of materials etc. and other unforeseen items	LS			10.00	Lacs.
6	Provision for temporary disposal arrangements/Re-charge pit	LS			5.00	Lacs.
7	Provision for connection with main line if required	LS			4.00	Lacs.
	Total				102.31	
	Add 4% contingencies & P.E. charges				4.09	Lacs.
	Add 49% Deptt. Charges, price escalation, unforeseen, Admn. charges				50.13	Lacs.
	<b>C.O. to Final Abstract of cost</b>			<b>Total SAY</b>	<b>156.53</b>	<b>Lacs</b>
					<b>156.53</b>	<b>Lacs</b>

**RESIDENTIAL PLOTTED COLONY, SECTOR - 59, GURUGRAM**  
**AREA 6.225 ACRES**

S. No.	Description	Unit	Qty	Rate	Amount
<b>Sub Work No. IV</b>			<b>Road Work</b>		
<b>1.0</b>	Provision for leveling and earth filling as per site conditions.	per acre	6.225	150,000.00	9.34 Lacs.
<b>2.0</b>	Road work as per HSVP Norms	cum.	1350	3,500.00	47.25 Lacs.
<b>3.0</b>	Providing for Kerbs & Channels	R.m.	2700	750.00	<b>20.25 Lacs.</b>
<b>4.0</b>	Provision for plot indicator / guide map / demarcation burji etc. / traffic light etc.	L.S.	job		<b>15.00 Lacs.</b>
<b>5.0</b>	Pedestrian Track on both sides of roads with interlock pavers etc. as per specifications.	m2	600	3,000.00	<b>18.00 Lacs</b>
<b>6.0</b>	Top road finish with pavers	m2	3500	1,200.00	<b>42.00 Lacs</b>
<b>7.0</b>	Provision for carriage of material	L.s.		L.s.	<b>5.00 Lacs.</b>
<b>TOTAL</b>					<b>156.84 Lacs.</b>
Add 4% contingencies and P.E. Charges					6.27 Lacs.
Add 49% Departmental Charges, price escalation, unforeseen, admn. Charges					76.85 Lacs.



	<b>GRAND TOTAL</b>	<b>239.96 Lacs.</b>
<b>C.O. to Final Abstract of cost</b>	<b>SAY</b>	<b>239.96 Lacs.</b>

**RESIDENTILA PLOTTED COLONY, SECTOR - 59, GURUGRAM**  
**AREA 6.225 ACRES**

<b>S. No.</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate</b>	<b>Amount</b>
<b>Sub Work No. V</b>		<b>Electrical</b>			
<b>1.0</b>	Supply & erection of Street Lighting at surrounding as per HUDA specifications.	acres	6.22500	275000.00	17.12 Lacs.
	Add 3% contingencies				0.51 Lacs.
	Add 49% Deptt. Charges				8.39 Lacs.
			<b>Total</b>		<b>26.02 Lacs.</b>
<b>C.O. to Final Abstract of cost</b>				<b>SAY</b>	<b>26.02 Lacs.</b>

**RESIDENTILA PLOTTED COLONY, SECTOR - 59, GURUGRAM**  
**AREA 6.225 ACRES**

<b>S. No.</b>	<b>Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate</b>	<b>Amount</b>
<b>Sub Work No. VI</b>		<b>Horticulture</b>			
<b>1.0</b>	<b>Lawn</b>				

	Preparation of lawn for grassing by excavation to a depth of 30 cms, removing all foreign bodies over 50 mm dia., refilling with the mix of earth and manure in ratio-2:1 Grade lawn areas to finish levels as indicated on grading plants. All lawn areas shall slope to drain. Where no grades are shown areas shall have a smooth and continual grade between existing or fixed controls (such as walks, curbs, catch basins, elevation at steps or building) and levels shown on plans. Roll scarify take and level as necessary to obtain true, even lawn surface. All finish grades shall meet approval of the project Engineer before grassing is done. Grassing with seeding of specified grass including watering and maintenances of the lawn for 30 days or more till the grass form a thick lawn free of weeds and fit for mowing, the lawn after which it shall be maintained for period of 12 months, supply & spraying of insecticide and nutrients as required complete. (Inclusive of the cost of Selection No 1 grass)	Acre	6.22500	225,000.00	14.0
	Total				14.0
<b>2.0</b>	<b>Providing &amp; Laying sprinkler irrigation system along roads, parks etc.</b>	Acre	6.225	110,000.00	6.8
	Total				6.8
<b>3.0</b>	<b>Trees ( Planting cost + cost of plant)( 1no. Tree @ 5.0 mt. c/c)</b>	nos.	60	3,000.00	1.8
	<b>TOTAL</b>				<b>22.6</b>
	Add 4% contingencies and P.E. Charges				0.9

Add 49% Departmental Charges, price escalation, unforeseen, admn. Charges	11.1
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<b>GRAND TOTAL</b>	<b>34.6</b>
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<b>C.O. to Final Abstract of cost</b>	<b>SAY</b>	<b>34.6</b>
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**RESIDENTILA PLOTTED COLONY, SECTOR - 59, GURUGRAM**  
**AREA 6.225 ACRES**

S.No.	Description	Unit	Qty	Rate	Amount
<b>Sub Work No. VII</b>		<b>Maintenance Charges &amp; Resurfacing of Roads</b>			
<b>1.0</b>	Provision for maintainance charges for water supply, sewerage, storm water drainage, roads, streetlight, horticulture etc. complete including operation and establishment charges as per HUDA norms after completion and resurfacing of roads after 10 years or 1st phase.	acre	6.22500	1,000,000.00	62.25 Lacs.
<b>2.0</b>	Provision for resurfacing of roads after 1st 5 years of maintainance.	sq.m.	2000	600.00	12.00 Lacs.
<b>3.0</b>	Provision for resurfacing of roads after 10 years.	sq.m.	2000	750.00	15.00 Lacs.
<b>TOTAL</b>					<b>89.25 Lacs.</b>
Add 4% contingencies and P.E. Charges					3.57 Lacs.

Add 49% Departmental Charges, price escalation, unforeseen, admn.charges	43.73 Lacs.
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GRAND TOTAL	136.55 Lacs.
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C.O. to Final Abstract of cost	SAY 136.55 Lacs.
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**PARAS BUILDTECH PVT LTD. GURUGRAM**  
**GURUGRAM**

**RESIDENTIAL PLOTTED COLONY, SECTOR -**  
**59, GURUGRAM**

**AREA 6.225 ACRES**

**PROJECT REPORT/ESTIMATES FOR PROVIDING INTERNAL  
SERVICES e.g. WATER SUPPLY, SEWAGE & STORM WATER  
DRAINAGE ETC. RESIDENTIAL PLOTTED COLONY,  
SECTOR - 59, AT GURUGRAM (HARYANA).**