

**EXTERNAL DEVELOPMENT WORKS DESIGN AND
COST ESTIMATES**

FOR

**RESIDENTIAL PLOTTED COLONY "CENTRAL PARK
FLOWER VALLEY" ON AREA MEASURING
196.4423 ACRES IN THE REVENUE ESTATE OF
VILLAGE DHUNELA & BERKA, SECTOR 29,30,32 &
33, SOHNA, DISTT.- GURGAON (LICENSE NO. 54
OF 2014, 28 OF 2016, 07 OF 2020 & 104 OF 2021)**

**BEING DEVELOPED BY:
M/S ST. PATRICKS REALTY PVT. LTD.**

RESIDENTIAL PLOTTED COLONY "CENTRAL PARK FLOWER VALLEY" ON AREA MEASURING 196.4423 ACRES IN THE REVENUE ESTATE OF VILLAGE DHUNELA & BERKA, SECTOR 29,30,32 & 33, SOHNA, DISTT.- GURGAON (LICENSE NO. 54 OF 2014, 28 OF 2016, 07 OF 2020 & 104 OF 2021)

REPORT

ESTIMATE FOR PROVIDING WATER SUPPLY, SEWERAGE, STORM WATER DRAINAGE, ROADS, STREET LIGHTING AND HORTICULTURE IN RESPECT OF 196.4423 ACRES PROPOSED RESIDENTIAL PLOTTED COLONY "CENTRAL PARK FLOWER VALLEY" IN SECTOR-29, 30, 32 & 33, VILLAGE DHUNELA & BERKA, SOHNA, DISTT. GURGAON (HARYANA)

Dhunela & Berka, villages in Sohna, District Gurgaon of Haryana State situated on near Jaipur Highway at a distance of 50 Kms from Delhi. Being the National Capital Region, the town has fast developing tendency and potential. Further, it has also started sharing the growing residential load of Delhi. In order to relieve the growing pressure of population in National Capital of Delhi, it has been decided by the Haryana Govt. to establish various residential and other infrastructure sectors in village Dhunela & Berka Distt. Gurgaon.

M/s St. Patricks Realty Pvt. Ltd. is developing a residential Plotted colony "Central Park Flower Valley" in Sector 29,30,32 & 33 village Dhunela & Berka, Sohna, Distt. Gurgaon.

This report and estimate is for Plotted Colony at village Dhunela & Berka Distt. Gurgaon over an area measuring 196.4423 Acres.

WATER SUPPLY

At present the source of water supply in this area is water Tankes/ Temp. Borewells/ HUDA Water Supply. It has been proposed to construct the under ground tanks of capacity as per attached details, and at location for domestic purpose and for fire protection. The underground tanks will be fed from the tankers and HUDA supply, which will feed overhead tanks on the roof of the buildings. The water supply system has been designed as per Hazen Williams formula

DESIGN

The scheme has been designed for population aof approx. 24120 persons for Township. The rate of water supply per head /-day has been taken as 172.50 liters as per HUDA norms in addition to above necessary provision of water for club and parks etc. have been taken into account for calculating the maximum quantity of water requirement.

PUMPING REQUIREMENTS

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.

UNDERGROUND STORATE TANK

Underground storage tank provision has been made in two compartments, which cater for the domestic as well as for fire fighting requirement. The water for fire water compartment shall overflow to the domestic compartment so that the water in the fire compartment also remain full & fresh and wilil not contaminate.

BOOSTING STATION

The boosting station is being planned near underground storage tank catering to above requirement.

DISTRIBUTION SYSTEM

The distribution system for this development has been designed to supply @ 172.50 liter per head per day @ 3 times the average rate of flow on Hazen William formula. Necessary provision for laying CI/DI pipes confirming to relevant IS standard along with valves and special has been made in the project. The minimum terminal head at any point will be more than 35 so that it can be serve the G + 2 floors construction envisaged in the plan. Minimum pipe dia. for distribution is kept as 100 mm dia.

RISING MAIN

Raising main from HUDA water main or sector road to water work have also been proposed as provision has been made in this estimate.

SEWERAGE SCHEME

This scheme has been designed for sewer connecting to STP & over flow of STP connected to HUDA sewer main. The sewerage system has been marked on respective plans.

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 80% 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. Necessary provision for laying S.W./R.C.C. pipe sewer line, construction of required number of manholes etc. has 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 for the design of sewerage system.

STORM WATER DRAINAGE

Since the Master Scheme has been proposed with pipe drain, we proposed to lay pipe drains with required number of catch basins for disposal of storm water. The intensity of rain fall has been taken as 40 mm per hour. A minimum size of 400 mm dia pipe storm water pipe will be provided and designed as per Manning's formula.

FIRE

As per N.B.C. (National Building Code), fire tanks & required capacity pumps have been provided the plan as shown on the plan. Similarly irrigation pumps of required capacity provided as shown on the plan.

SPECIFICATIONS

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

ROADS

The roads in the colony have been planned as minimum 6 M wide. The following specification have been adopted which are reproduced below:

The specification of 6M wide roads:

1. GSB-200 mm in one layer.
2. WBM-250 mm in Three layer.
3. DBM-50 mm thick.
4. MSS-20 mm thick. *25 mm thick BC*

The above construction shall be done on well compacted sub grade as per specifications. Complete work will be carried out as per MORTH specification, IRC guide lines or HUDA specification, which ever applicable.

STREETLIGHTING

Provision of lighting on surrounding area has been made.

HORTICULTURE

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

RATES

The estimate has been prepared based on the present market rates.

COST

The total cost of the scheme, including cost of all services works out to Rs. ~~13642.97~~ ^{13783.55} Lacs Including 3% contingencies and 49% departmental charges, price escalation & other unforeseen charges. Cost of per Acres ~~Rs. 69.45~~ ^{78.17} Lacs.

M/S ST. PATRICKS REALTY PVT. LTD.



(AUTHORIZED SIGNATORY)

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(I) DAILY WATER REQUIREMENT

A Category of plots

1	Plot-A	=	10 Plots
2	Plot-B	=	10 Plots
3	Plot-C	=	55 Plots
4	Plot-D	=	45 Plots
5	Plot-E	=	73 Plots
6	Plot-F	=	170 Plots
7	Plot-G-NPNL	=	56 Plots
8	Plot-G	=	368 Plots
9	Plot-H	=	87 Plots
10	Plot-H1	=	131 Plots
11	Plot-H2	=	330 Plots
12	Plot-H3	=	56 Plots
13	Plot-H4	=	7 Plots
14	Plot-H5	=	8 Plots
15	Plot-L	=	8 Plots
16	Plot-N	=	6 Plots
17	Plot-T	=	5 Plots
18	Plot-V	=	57 Plots
19	Plot-M NEW SIZE	=	18 Plots
20	Plot-M 1 NEW SIZE (NPNL)	=	30 Plots

TOTAL PLOTS = 1530 Plots
at 13.5 PERSON/PLOT = 20655 Persons

B E.W.S

a) Category-J	=	383 Plots
at 9 PERSON/PLOT	=	3447 Persons
Total Population (A+B)	=	24102 Persons
@172.5 LPCD	=	4157595 Liters

C

commercial (4.116 Acres) or 16657 Sqm.		
a) Commercial (8903.40sqm)		
(Beauty Parlour+ATM+Creche ETC)		
@ 10sqm/ Person	=	1666 890.34 Persons
a) Shopkeepers 10%	=	167 89 Persons
@ 45 LPCD	=	7515 4005 Liters
b) visitors 90%	=	1499 801 Persons
@ 15 LPCD	=	22485 12015 Liters
b) NURSERY SCHOOL 5 Nos. (1.0 Acre)	=	4046 SQM
@ 4sqm/student	=	1012 Students
@ 45 LPCD	=	45540 Liters

c) creche 1 No 0.20 Acre (809.40 Sqm)
4 Sqm / student
e 452 LPCD

202 students
9090 litre

(d) c) PRIMARY SCHOOL- 3 nos. (1.5 Acre)	=	6069 SQM
@ 4sqm/student	=	1517.25 Students
@ 45 LPCD	=	68276.25 Liters
(e) d) HIGH SCHOOL (2.0 Acre)	=	8094 SQM
@ 4sqm/student	=	2024 Students
@ 45 LPCD	=	91080 Liters
(f) e) NURSERY HOME 6 Nos. (1.5 Acre)	=	6069 SQM
@ 10sqm/Patient	=	606.9 Patients
@ 135 LPCD	=	81932.5 Liters
(g) f) DISPENSARY L.S. (1.25 Acres)	=	5000 Liters
(h) g) Community centre (2.0 Acres)	=	8092 SQM
@ 1.5sqm/Person	=	5395 Persons
@ 15 LPCD	=	80920 Liters
(i) h) ESS (0.58 Acre)	=	2347.1902 SQM
@ 100sqm / person	=	24 19.02 Person
@ 45 LPCD	=	1080 855 Liters
(j) i) Taxi stand (0.5 Acre)	=	6070 2024 SQM
@ 100sqm / person	=	61 20.24 Person
@ 15 LPCD	=	915 303.6 Liters
(k) j) Religious Building (0.2 Acre)	=	809.2 SQM
@ 10sqm / person	=	80.92 Person
@ 15 LPCD	=	1214 1213.8 Liters
(l) k) Maintenance Staff (such as gardener security staff etc.)	=	25 Person
@ 45 LPCD	=	1125 Liters
l) Floating population 10% of total population	=	1855 Persons
@ 15 LPCD	=	27825 Liters
m) Back wash filters (L.S)	=	20000 Liters

Total Commercial + Community buildings = **436172**
440090.15 Liters

D) Horticulture & Road Work

a) Area under park (=15.366 Acre)	=	62170.836 SQM
@ 25 Ltrs./acre	=	384150 Liters
b) Area under road + Paved area (196.4423 - (66.71+15.366))	=	114.3663 Acres
@ 5 K.L./Acre	=	571832.570831.5 Liters
Total Water Demand	=	955982 954982 Liters
Say	=	958KL 954982 Liters

The demand of horticulture & road work will met from recirculates water after treatment at S.T.P.

Total water demand (4157595 + 436172) = **4593767**
4597685 Liters/day
4597.68515-KLD 4593.77KL
Say = **4600 KLD**

Domestic water demand

$$\begin{aligned}
 & 65\% \text{ of AV/WD of (A+B) + 35\% of commercial [C} = \frac{2868097}{2873282.00} \text{ Liters/day} \\
 & (a+b+c+d+f+g+h+i) + 100\% \text{ of c(i)} \\
 & \text{Domestic water demand (KLD)} = \frac{2868.10}{2873.282} \text{ KLD} \\
 & \text{Or Say} = \frac{2870}{2875.00} \text{ KLD}
 \end{aligned}$$

Flushing water demand

$$\begin{aligned}
 & 35\% \text{ of AV/WD of (A+B) + 65\% of [C(a+b+c+d+e+f+g+h+i)] = \frac{1725670}{1724403} \text{ Liters/day} \\
 & \text{Flushing water demand (KLD)} = \frac{1725.67}{1724.40} \text{ KLD} \\
 & \text{Or Say} = \frac{1730}{1725.00} \text{ KLD}
 \end{aligned}$$

Sewage Treatment Plant Capacity

$$\begin{aligned}
 & \text{Average Sewerage Contribution Considering 80\% of AV} = \frac{3847581}{3852500} \text{ Liter / Day} \\
 & \text{domestic water demand \& 90\% of AV/Flushing demand} \\
 & \text{Sewage Treatment Plant Capacity (KLD)} = \frac{3848}{3852.50} \text{ KLD} \\
 & \text{Or Say} = \frac{4000.00}{4000.00} \text{ KLD}
 \end{aligned}$$

Sewage scheme

$$\begin{aligned}
 & \text{Peak discharge @3 times of sewage discharge plus sub soil} = \frac{12002120}{12460000} \text{ Liters} \\
 & \text{infiltration @ 10\% of total water demand} = \frac{2643639}{2768889} \text{ GPD} \\
 & = \frac{4.90}{5.13} \text{ Cusces}
 \end{aligned}$$

Hence 600 mm dia pipe having design capacity 5.42 cuses is sufficient to carry the above discharge

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(I) BOREWELLS

Approx. discharge of borewells @ 18 KL/hour and working 16 hours/day

(a) Total domestic water demand = KLD	=	2870 2875.00
(b) Number of borewells $\frac{2870}{(18 \times 16)}$	=	9.98 9.96
Add 10% extra	=	1.00
Total	=	10.98 10.96
Say	=	<u>11.00</u>

Take up 50% T.W = 5.50 Nos. Say 6 Nos.
So, it is proposed to provide 12 Nos. of tube well (11 working & 1 standby). Moreover, the water demand for horticulture purposes is to met from recirculated water after treatment at STP and ultimate water supply is to provided by HUDA.

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(I) Pumping Machinery for Borewell

Gross working Head	=	50.0 Meters
Average Fall in S.L.	=	5.0 Meters
Depression Head	=	5.0 Meters
Friction loss in main + Positive head	=	<u>10.0 Meters</u>
Total	=	<u>70.0 Meters</u>
Or Say	=	70.0 Meters

$$\text{Pump HP} = \frac{18000 \times 70 \times 100}{60 \times 60 \times 75 \times 60} = 7.78 \text{ H.P.}$$

Or Say 10.00 H.P.

(II) Underground water storage tank:-

a) Total Domestic Water Demand	=	2870 KL 2873282 Liters
Cap. Of UGT tanking storage (60%)	=	1722 1723.97 KLD
Or Say	=	1750.0 KLD ✓

Fire Tank provided as per N.B.C. Norms

$$= \text{say } 200.00 \text{ KLD} \quad \checkmark$$

$$100 \sqrt{24102/1000} \times 73 = 163.65 \text{ KL}$$

But it is proposed to construct an underground tank of 1750 KLD having 200 KLD for fire fighting purpose. The water enters in fire fighting compartment the enter in treated water tank to keep the water in fire tank.

UGT for Flushing w/s = $\frac{\text{FWS} + \text{Hos} +}{(1730 + 956) \times 60\%} = 1612 \text{ KL}$ Say 1620 KL.

(III) Boosting Machinery (Drinking water Supply)

a) For Under Ground Tank		
Total water demand (Domestic)	$\frac{2870 \times 1000}{60 \times 6}$	2870 2875.00 KLD
for 6 hour pumping		= 7972.22 7986.11 LPM
7 nos. pump with 1 standby		= 1138.89 1140.87 LPM
Or Say		= 1250.00 LPM

Gross Working Head

- Suction lift	=	3.00 Meters
- Delivery head	=	5.00 Meters
- Frictional loss in Mains & Specials+ Positive head	=	7.00 Meters
- Clear head required (G+2) = 10+2x4	=	<u>18.0 Meters</u>
Total	=	33.0 Meters
Or Say	=	35.0 Meters

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$$\text{Pump HP} = \frac{1250 \times 35 \times 100}{60 \times 75 \times 60} = 16.20 \text{ H.P.}$$

Or Say 17.50 H.P.

It is proposed to provide 8 nos. of motors of 17.5 HP sets of 1250 LPM discharge at 35 M head (7 pumps working and 1 as standby for domestic supply & generator set of same capacity in case of electric failure) for domestic purpose.

b) Boosting Machinery (Flushing water Supply)

(i) AV water demand	=	4597685 liters/day
(ii) Flushing water supply demand @35% of (A+B) + 65% [C(a+b+c+d+e+f+g+h+i)]	=	1724403 liters/day
Flushing water demand (KLD)	=	1724.40 KLD
Or Say	=	1730 1725.00 KLD

for @ 6 hour pumping	=	4805.56
4 nos. pump with 1 standby	=	4791.67 LPM
Say	=	1201.37 1197.92 LPM
Pump HP = $\frac{1250 \times 35 \times 100}{60 \times 75 \times 60}$	=	1250.00 LPM
	=	16.20 H.P.

Or Say 17.50 H.P.

It is proposed to provide 5 nos. of motors 17.5 HP sets of 1250 LPM discharge at 35 m head (4 pump working & 1 pump stand by & generator set of same capacity in case of electric failure.

(V) Irrigation Pumping

a) Plot Area	=	196.4423 Acres
	=	795001.99 Sqmt
Water Demand of Horticulture + Road Area	=	955982
8 Hours Pumping	=	954982 LPD
3 nos. pump with 1 standby	=	1991.63 1989.54 LPM
Say	=	633.87 663.18 LPM
Head	=	700 LPM
Pump HP = $\frac{700 \times 15 \times 100}{60 \times 75 \times 60}$	=	15 Mtr.
	=	3.89 H.P.
Or Say	=	5.00 H.P.

It is proposed to provide 4 Nos. of motors of 5.0 HP sets of 700 LPM discharge at 15 M head (3 pumps are working and 1 as standby & generator set of same capacity in case of electric failure.)

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(VII) GENERATING SETS

S. No	Equipment	QTY	HP	Total HP	
1	Borewells	11 6	10	110.0 60.0	
2	Booster Pump (for domestic) + Flushing+ irrigation pump 3. <i>sorees lightip</i>	7 + 4 + 3	17.5+17.5+5 L.S	207.5 50.0	
	Total			317.5	
				236.86	KW
	171.58 X 1.5			355.28	KVA
	Or Say			360.00	KVA

It is proposed to add 360 KVA capacity for above said machinery to the main DG set.

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FINAL ABSTRACT OF COST

Sub Work	Description	Amount (Rs.) in Lacs
I	Water Supply Scheme	2029.51
II	Sewerage Scheme	1005.93
III	Storm Water Drainage	1374.36
IV	Road and Footpath	3421.99
V	Street Lighting	753.70
VI	Horticulture	333.59
VII	Maintenance Charges for 10 Years including Resurfacing of Roads after 1st 5 year & IInd 5 years of mtc	4723.90
	Total (in Lacs)	13642.97
	Cost of Per Acre (in Lacs)	69.45

M/S ST-PATRICKS REALTY PVT. LTD.

[Signature]
(AUTHORIZED SIGNATORY) Authorised Signatory

[Signature]
Executive Engineer
HSVP Division No. VI
Gurugram

Say Rs 13783.55 Lacs

Cost/Acre = 13783.55 / 196.4423 = Rs 70.17 Lakh

Checked subject to comments
in forwarding letter No. 43494
Dt. 16.03.2022 and notes
attached with the estimate

[Signature]
Superintending Engineer,
HSVP, Circle, Gurugram.

[Signature]
Additional Chief Engineer (HQ)
for Chief Engineer-I, HSVP
Panchkula

16.3.2022

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Sub Work No.1		Water Supply	
Sub Head	Description	Amount (Rs.). In lacs	
1	Head Works	339.73	443.65
2	Pumping Machinery	-122.78	130.45
3	Rising Main	-17.69	17.70
4	Distribution System (Dom + Flushp w/s)	1,424.93	1089.10
5	Fire Fighting (Fire Hydrants)	13.53	13.56
6	Irrigation	-110.86	157.81
	Say (In Lacs)	2029.51	1852.27

- ⑦ Provision for const. of boostp station of suitable cap. as per P.H. requirements L.S. Rs 15. w lath.
- ⑧ Provision for boundary wall around T.w & water works (L.S.) Rs 5. w lath.
- ⑨ Provision for foot path, hedges, lawn at boostp station. (L.S.) Rs 5. w lath.
- ⑩ Provision for staff quarters for mtr. staff. (L.S.) Rs 30. w lath
Rs 55. w lath

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Sub Work No-1						Water Supply	
Sub Head No-01						Head Works	
Sl No	DESCRIPTION	Qty	Rate			AMOUNT (In Lacs.)	
1	Boring and installing 200 mm i/d tubewell with reverse rotary rig complete with pipe and strainer to depth of about 80 m in all respect	6 4	1000000			Rs. 60.00 40.00	
2	Provision for Rising Main connecting Bore well with water main and by-pass arrangement					Rs. 0.00	
2.1	100 mm dia. G.I. Pipe	1010	x 1250			Rs. 12.63	
2.2	150 mm dia. G.I. Pipe	775	x 1575			Rs. 12.21	
2.3	200 mm dia. G.I. Pipe	485	x 2342			Rs. 10.43	
2.3	250 mm dia. G.I. Pipe	70	x 2655			Rs. 1.86	
3	Providing Boosting arrangement by pumps 8 HP, capacity 1250 LPM at 35 M head, 13 nos. each & @ Rs. 2,00,000/- each (For UGT) complete with panel, foundation etc. (for domestic and flushing)	13	x 2,50,000/- 200000			Rs. 32.50 26.00	11.16 1.83
4	Provision for carriage of materials and other unforeseen items					Rs. 10.00	
5	Construction of U.G. tanks of total cap. 1550 KL , Including 200 KL for Fire tank@ Rs. 3500KL	1550	x 4500/- 3500			Rs. 87.75 54.25	
6	Provision for borewell chamber of size 1.5 x 1.5 x 1.5 m For Housing borewell 8 Nos. @ Rs. 50,000/- each	8 6	x 100000			Rs. 8.00 4.00	6.00 55.00
	7 to 10 Pl. See oppo.					Rs. 50.00	
	TOTAL					Rs. 221.37	289.08
	Add 3% contingencies					Rs. 6.64	8.67
	TOTAL					Rs. 228.01	297.75
	Add 49% Department charges, Price Escalation & other unforeseen Charges.					Rs. 111.72	145.90
	TOTAL COST					Rs. 339.73	443.65 lakh

Material Statement of Borewells Rising Mains							
S. No.	Name of line	Length of 100 mm dia.	Length of 150 mm dia. pipe	Length of 200 mm dia. pipe	Length of 250 mm dia. pipe		
1	B.W. No. 1 to B.W. No. 2	175					
2	B.W. No. 2 to B.W. No. 3	150					
3	B.W. No. 3 to B.W. No. 4		215				
4	B.W. No. 4 to 5	20		465			
5	B.W. No. 5 to 6	20		20			
7	B.W. No. 7 to A	475					
8	B.W. No. 8 to A	170					
8	Point A to B		560				
8	B to UGT				70		
	Total	1010	775	485	70		

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Sub Work No-1						Water Supply	
Sub Work No-02						Pumping Machinery	
SI No	DESCRIPTION		Qty		Rate		AMOUNT (In Lacs.)
1	Providing and installing electricity driven Submersible pumping set capable of delivery about 18 KL / Hr. of water against a total Head of 80 M complete with motor and other accessories, 12 No		12 6	x	200000	Rs.	24.00 12.00
2	Provision for diesel engine genset each for standby arrangements for T.W. of booster pump complete with gear head arrangement. - 1 No. 360 KVA @ 30.0 Lac. <i>e Rs 10,000/- Per KVA</i>		1	x	3000000 L.S	Rs.	30.00 36.00
3	Providing for chlorination plant complete. 1 No. @ 100,000/-		1 2	x	100000	Rs.	1.00 2.00
4	Provision for making foundations and erection of Pumping machinery (LS)		1	x	1000000 L.S	Rs.	10.00 10.00
5	Provision for pipes, valves and specials inside boosting chamber - 1 Set (L.S.)		1	x	500000 L.S	Rs.	5.00 10.00
6	Provision for electric services connection including electric fitting for tube wells & boosting chamber etc. 1 set (L.S.)		1	x	500000 L.S	Rs.	5.00
7	Provision for carriage of material and unforeseen item. L.S. for Building		1	x	500000 L.S	Rs.	5.00
<i>⑧ Provision for Electric Sub station</i>							5.00
TOTAL						Rs.	80.00 85.00
Add 3% contingencies						Rs.	2.40 2.55
TOTAL						Rs.	82.40 87.55
Add 49% Department charges, Price Escalation & other unforeseen Charges.						Rs.	40.38 42.90
TOTAL COST						Rs.	122.78 130.45

RESIDENTIAL PLOTTED COLONY "CENTRAL PARK FLOWER VALLEY" ON AREA MEASURING 196.4423 ACRES IN THE REVENUE ESTATE OF VILLAGE DHUNELA & BERKA, SECTOR 29,30,32 & 33, SOHNA, DISTT.- GURGAON (LICENSE NO. 54 OF 2014, 28 OF 2016, 07 OF 2020 & 104 OF 2021)

Sub Work No-1						Water Supply	
Sub Work No-03						Rising Main from HUDA	
SI No	DESCRIPTION		Qty		Rate		AMOUNT (In Lacs)
1	Providing, laying, jointing & testing 200 mm dia. D.I. pipe lines including cost of excavation complete in all respects.		410	@	2150	Rs.	8.82
2	Providing and fixing 200 mm dia. sluice valves including cost of surface boxes and masonry chambers etc., complete in all respects.		1	@	20000	Rs.	0.20
3	Providing and Fixing indicating plates for sluice valves, Air valves & fire hydrant.		1	@	1000	Rs.	0.01
4	Provision for carriage of material & other foreseen items etc., L.S.		1	@	50000	Rs.	0.50
5	Provision for making connection with HUDA main (L.S.) 1 job1 complete in all respect		1	@	100000	Rs.	1.00
6	Provision for cutting road and making good the same (L.S.) 1 job		1	@	100000	Rs.	1.00
TOTAL						Rs.	11.53
Add 3% contingencies						Rs.	0.35
TOTAL						Rs.	11.87
Add 49% Department charges, Price Escalation & other unforeseen Charges.						Rs.	5.82
TOTAL COST						Rs.	17.69

11.85
17.70

Material Statement and design statement of HUDA Rising Mains

S. No.	Name of line				Dia. in mm	Length in m from municipal to U.G.T.
1	Municipal Main To UGT				200	410

RESIDENTIAL PLOTTED COLONY "CENTRAL PARK FLOWER VALLEY" ON AREA MEASURING 196.4423 ACRES IN THE REVENUE ESTATE OF VILLAGE DHUNELA & BERKA, SECTOR 29,30,32 & 33, SOHNA, DISTT.- GURGAON (LICENSE NO. 54 OF 2014, 28 OF 2016, 07 OF 2020 & 104 OF 2021)

Sub Work No-1						Water Supply	
Sub Head No-04						Distribution system (Domestic & Flushing)	
SI No	DESCRIPTION		Qty		Rate		AMOUNT (In Lacs)
1	Providing, laying, jointing & testing D.I. pipes including cost of excavation complete as per ISI marked.						
1.1	100 mm I/D	3814.8	48516.5	@	1250	Rs.	606.46
1.2	150 mm I/D	7310.1	14063	@	1575	Rs.	221.49
1.3	200 mm I/D		3550	@	2362.150	Rs.	76.33
1.4	300 mm I/D		20	@	3500	Rs.	0.70
2	Providing and Fixing sluice valves including cost of brick masonry chamber complete in all respect.						
					12000/-		9.60
2.1	100 mm I/D		80	@	10000	Rs.	8.00
2.2	150 mm I/D		25	@	15000	Rs.	3.75
2.3	200 mm I/D		2	@	20000	Rs.	0.40
3	Providing and Fixing air valves and scour valves including cost of brick masonry chamber complete.		5	@	10000	Rs.	0.50
4	Providing and Fixing indicating plates for sluice valves	107.85		@	1000	Rs.	1.07
5	Provision for carriage of material & other foreseen items etc., (L.S). 1 Job including cutting of road and making the same.					Rs.	10.00
	⑥ Provision for cutting of road & making L.S						10.00
	TOTAL					Rs.	928.47
	Add 3% contingencies					Rs.	27.85
	TOTAL					Rs.	956.33
	Add 49% Department charges, Price Escalation & other unforeseen Charges.					Rs.	468.60
	TOTAL COST					Rs.	1424.93

**RESIDENTIAL PLOTTED COLONY "CENTRAL PARK FLOWER VALLEY" ON AREA MEASURING 196.4423 ACRES IN THE REVENUE ESTATE OF VILLAGE DHUNELA & BERKA, SECTOR 29,30,32 & 33,
SOHNA, DISTT.- GURGAON (LICENSE NO. 54 OF 2014, 28 OF 2016, 07 OF 2020 & 104 OF 2021)**

DOMESTIC WATER SUPPLY - HYDRAULIC DESIGN																					
S. No	Ref of line	Length in mts	Self			Additional			Commercial, Community Centre, Nursing School, Backwash, Dispensary, Primary school, High school, nursing Home (LPD)	KLD	Domestic Water demand @ 65% of AVWD Apts +35% commercial K.L.D.	Peak Demand @ 3 time of AVWD	Dia of Pipe (mm)	Velocity mt/sec	Lose of Head in 1000 M (mts)	Loss of head in the line (mts)	Level in start			Remarks	
			Plot @ 13.5 persons/ Plot + EWS @ 9 persons/plot @ 172.5 LPCD	Floating Population @ 10% of Population @ 15 LPCD	Commercial, Community Centre, Nursing School, Backwash, Dispensary, Primary school, High school, nursing Home (LPD)	Plots @ 13.5 persons/ Plot + EWS @ 9 persons/plot @ 172.5 LPCD	Floating Population @ 10% of Population @ 15 LPCD	Commercial, Community Centre, Nursing School, Backwash, Dispensary, Primary school, High school, nursing Home (LPD)									HL (Mts)	GL (Mts)	TH (Mts)		
1	AT U.G.T.		-	-	-	1178 Plots + 295 EWS=18558 Persons=320125 5 Lis	1856 Persons=27840 Lis	356035	3,557.29	2,178.25	6534.75	-			-	-		240.10	210.10	30.00	Ground Level=210.10 U.G.T. Bed Level=207.10 Add Building Head G=2=10+2+4=18 mts Head=3.0 mtrs Delivery Head=5.0 Positive Friction Head=3.0 mtrs Lose=4.0 mtrs Head Level=240.10
2	UGT-W1	20	-	-	-	1178 Plots + 295 EWS=18558 Persons=320125 5 Lis	1856 Persons=27840 Lis	356035	3,557.29	2,178.25	6534.75	300	0.75	4.00	0.08		240.02	210.10	29.92		
3	W1-W2	210	38 Plots=513 Persons=86492 Lis	51 Persons=785 Lis	-	179 Plots=2416 Persons=416760 Lis	242Persons=3630 Lis	Commercial, Community Centre, Nursing School,Nursing Home=161745	671.39	386.56	1159.88	200	0.75	1.80	0.38		239.64	210.10	29.54		
4	W2-W3-W5	1100	96 Plots=1266 Persons=223580 Lis	130 Persons=1950 Lis	Commercial, Community Centre, Nursing School, nursing Home=161745	83 Plots=1120 Persons=193200 Lis	112Persons=1680 Lis	-	582.14	328.78	886.34	150	0.75	1.40	1.54		238.10	210.10	28.00		
5	W3-W5-W4-W5	1660	83 Plots=1120 Lis	112 Persons=1680 Lis	-	721+235 EWS=11849 Persons=204395 2 Lis	1185 Persons=17775 Lis	Primary school, High school, Back Wash=133850	2,219.98	1,409.85	4229.55	250	0.75	3.80	0.38		239.64	210.10	29.54		
6	W1-W6	100	10 Plots=135 Persons=23288 Lis	14 Persons=210 Lis	-	721+235 EWS=11849 Persons=204395 2 Lis	1185 Persons=17775 Lis	Primary school, High school, Back Wash=133850	2,219.98	1,409.85	4229.55	250	0.75	3.80	0.38		239.64	210.10	29.54		
7	W6-W8-W7	650	169 Plots=158 Lis	370 Persons=5550 Lis	-	389 Plots=77 EWS=5944 Persons=102534 0 Lis	594 Persons=8910 Lis	Primary school, High school, Back Wash=133850	644.32	417.14	1251.42	200	0.75	0.98	0.64		239.00	210.10	28.90		
8	W6-W7	785	163 Plots=2200 Lis	220 Persons=3300 Lis	-	389 Plots=77 EWS=5944 Persons=102534 0 Lis	594 Persons=8910 Lis	Primary school, High school, Back Wash=133850	1,550.90	972.99	2918.97	200	0.75	4.80	3.81		235.83	210.10	25.73		
9	W7-W9	90	18 Plots=243 Persons=41918 Lis	24 Persons=360 Lis	-	371 Plots + 77 EWS=57051 Persons=993422 Lis	570 Persons=8550 Lis	Primary school, High school, Back Wash=133850	1,188.10	729.44	2188.32	200	0.75	2.80	0.23		238.77	210.10	28.67		
10	W9-W10	15	11 Plots=149 Persons=25702 Lis	15 Persons=225 Lis	Back wash Lis=20000 Lis	380 Plots + 77 EWS=5553 Persons=87992 Lis	555 Persons=8325 Lis	Primary school, High school,	1,125.99	702.18	2106.54	200	0.75	2.40	0.04		238.73	210.10	28.63		
11	W10-W11	40	15 Plots=202 Persons=34845 Lis	20 Persons=300 Lis	-	159 Plots=2148 Persons=370185 Lis	215 Persons=3225 Lis	-	408.56	264.50	793.50	150	0.75	1.80	0.07		238.66	210.10	28.56		

12	W11- W11A- W12A	310	43 Plots=580 Persons=10050 Lts	58 Lts	-	-	-	100.92	65.34	196.02	100	0.75	1.20	0.37	236.29	210.10	28.19
13	W11- W12A- W12	310	83 Plots=1120 Persons=193200 Lts	112 Lts	-	33 Plots=445 Persons=76762 Lts	45 Persons=675 Lts	277.32	176.05	534.15	100	0.75	5.20	1.61	237.05	210.10	26.95
14	W12- W12B	330	33 Plots=445 Persons=76762 Lts	45 Lts	-	-	-	77.44	50.13	150.39	100	0.75	0.46	0.15	236.90	210.10	26.80
15	W10-W13	90	-	-	-	197 Plots + 77 EWS=9353 Persons=579393 Lts	335 Persons=5025 Lts	697.27	417.56	1252.68	150	0.75	3.80	0.34	238.43	210.10	28.33
16	W13-W14	1360	105 Plots=1418 Persons=244605 Lts	142 Lts	-	-	-	246.74	159.74	479.22	100	0.75	4.60	6.25	232.18	210.10	22.08
17	W13-W15	130	10 Plots=135 Persons=23288 Lts	14 Lts	-	82 Plots + 77 EWS=1800 Persons=310500 Lts	180 Persons=2700 Lts	450.55	257.83	773.49	150	0.75	1.80	0.23	236.20	210.10	28.10
18	W15-W16	810	69 Plots=932 Persons=160770 Lts	93 Lts	-	-	-	162.16	104.88	314.94	100	0.75	2.40	2.18	236.02	210.10	25.92
19	W15-W17	110	8 Plots=108 Persons=18630 Lts	11 Lts	-	5 Plots + 77 EWS=761 Persons=131272 Lts	76 Persons=1140 Lts	264.71	1,137.74	3413.22	100	0.75	3.60	0.40	237.80	210.10	27.70
20	W17-W18	160	35 EWS=315 Persons=54338 Lts	32 Lts	-	-	-	54.82	35.49	106.47	100	0.75	0.31	0.05	237.75	210.10	27.65
21	W17-W19	20	-	-	-	5 Plots + 42 EWS=446 Persons=76935 Lts	45 Persons=6750 Lts	191.46	90.09	270.28	100	0.75	1.80	0.04	237.76	210.10	27.66
22	W19-W18	160	35 EWS=315 Persons=54338 Lts	32 Lts	-	-	-	54.82	35.49	106.47	100	0.75	0.38	0.06	237.70	210.10	27.60
23	W19-W20	160	5 Plots + 7 EWS=131 Persons=22598 Lts	13 Lts	-	Primary School + High School=113850 Lts	240 Plots + 60 EWS = 3780 persons = 652050 Lts	824.36	480.42	1441.26	100	0.75	0.52	0.08	237.68	210.10	27.58
24	W20-W21	105	-	-	-	240 Plots + 60 EWS = 3780 persons = 652050 Lts	378 person = 652050 Lts	657.72	425.81	1277.43	100	0.75	0.48	0.05	237.63	210.10	27.53
25	W21-W23	2875	240 Plots + 60 EWS = 3780 persons = 652050 Lts	378 person = 652050 Lts	-	-	-	657.72	425.81	1277.43	100	0.75	0.48	0.05	237.63	210.10	27.53

RESIDENTIAL PLOTTED COLONY "CENTRAL PARK FLOWER VALLEY" ON AREA MEASURING 196.4423 ACRES IN THE REVENUE ESTATE OF VILLAGE DHUNELA & BERKA, SECTOR 29,30,32 & 33, SOHNA, DISTT.- GURGAON (LICENSE NO. 54 OF 2014, 28 OF 2016, 07 OF 2020 & 104 OF 2021)

FLUSHING WATER SUPPLY - HYDRAULIC DESIGN																				
S. No	Ref of line	Length in mts	Self			Commercial, Community Centre, Nursing School, nursing Home (LPD)	Additional		Commercial, Community Centre, Nursing School, Dispensary, Primary school, High school, nursing Home (LPD)	KLD	Domestic Water demand @ 35% of AVWD Apts +65% commercial K.L.D.	Peak Demand @ 3 time of AVWD	Dia of Pipe (mm)	Velocity m/sec	Lose of Head in 1000 M (mts)	Loss of head in the line (mts)	Level in start		Remarks	
			Plot @ 13.5 persons/Plots + EWS @ 9 persons/plot @ 172.5 LPCD	Floating Population @ 10% of Population @ 15 LPCD	Floating Population @ 10% of Population @ 15 LPCD		HL (Mts)	TH (Mts)												
1	ATS.T.P.						1178 Plots + 295 EWS=18558 Persons=320125 5 Lts	1856 Persons=27840Lts	356035	3,557.29	1,379.04	4137.12	-	0.75	-	240.10	210.10	30.00	Ground Level=210.10 S.T.P. Bed Level=203.10 Add Building Head G+2=10+2=18 mtrs Add Suction Head=7.0 mtrs Delivery Head=5.0 Positive Head=3.0 mtrs Friction Lose=4.0 mtrs Head Level=240.10	
2	STP-FWS1	20					178 Plots + 295 EWS=18558 Persons=320125 5 Lts	1856 Persons=27840Lts	356035	3,557.29	1,379.04	4137.12	200	0.75	5.20	0.10	240.00	210.10	29.90	
3	FWS1-FWS2	190	38 Plots=513 Persons=86492 Lts	51 Persons=765 Lts			179 Plots=2416 Persons=416760 Lts	242 Persons=3630 Lts	Commercial, Community Centre, Nursing School,Nursing Home=161745	671.39	284.83	854.49	150	0.75	2.60	0.49	239.51	210.10	29.41	
4	FWS2-FWS3	1100	98 Plots=1296 Persons=223560 Lts	130 Persons=1950 Lts	Commercial, Community Centre, Nursing School, nursing Home=161745		83 Plots=1120 Persons=193200 Lts	112 Persons=1680 Lts	-	582.14	253.36	760.08	150	0.75	1.80	1.98	237.53	210.10	27.43	
5	FWS3-FWS4-FWS5	1860	83 Plots=1120 Persons=193200 Lts	112 Persons=1680 Lts					-	194.88	68.72	206.16	150	0.75	0.16	0.26	237.27	210.10	27.17	
6	FWS1-FWS6	120	10 Plots=135 Persons=23288 Lts	14 Persons=210 Lts			721 Plots + 235 EWS =11849 Persons=204395 2 Lts	1185 Persons=17775 Lts	Primary school, High school, Back Wash=133850	2,219.08	809.23	2427.69	200	0.75	3.40	0.41	239.59	210.10	29.49	
7	FWS6-FWS7	795	163 Plots=2200 Persons=370500 Lts	220 Persons=3300 Lts			Plots=77EWS =5944 Persons=102534 0 Lts	594 Persons=8910 Lts	Primary school, High school, Back Wash=133850	1,550.90	577.91	1733.73	200	0.75	1.60	1.27	238.32	210.10	28.22	
8	FWS6-FWS7	650	169 Plots=158 EWS=3703 Persons=638768 Lts	370 Persons=5550 Lts					-	644.32	227.18	681.54	200	0.75	0.42	0.27	239.32	210.10	29.22	
9	FWS7-FWS9	80	18 Plots=243 Persons=41918 Lts	24 Persons=360 Lts			371 Plots + 77 EWS=5705 Persons=983422 Lts	570 Persons=8550 Lts	Primary school, High school, Back Wash=133850	1,188.10	438.66	1315.98	150	0.75	4.20	0.38	238.94	210.10	28.84	

10	FWS9- FWS10	15	11 Plots=149 Persons=25702 Lts	15 Persons=225 Lts	Back wash Lts=20000 Lts	360 Plots + 77 EWS=5553 Persons=370185 957892Lts	555 Persons=8325 Lts	Primary school, High school, Back Wash=113850	1,125.99	423.81	1271.43	150	0.75	3.80	0.06	238.88	210.10	28.78
11	FWS10- FWS11	40	11 Plots=202 Persons=34845 Lts	20 Persons=300 Lts	-	159 Plots=2148 Persons=370185 Lts	215 Persons=3225 Lts	-	408.56	144.06	432.18	100	0.75	3.60	0.14	238.84	210.10	28.74
12	FWS11- FWS12	310	83 Plots=1120 Persons=193200 Lts	58 Persons=870 Lts	-	33 Plots=445 Persons=76762 Lts	45 Persons=675 Lts	Dispensary=5000	277.32	99.27	297.81	100	0.75	2.20	0.88	238.16	210.10	28.06
13	FWS11A- FWS12	310	43 Plots=580 Persons=100050 Lts	58 Persons=870 Lts	-	-	-	-	100.92	35.58	106.74	100	0.75	0.32	0.10	238.74	210.10	28.64
14	FWS12A- FWS13B	330	33 Plots=445 Persons=76762 Lts	45 Persons=675 Lts	-	-	-	-	77.44	27.31	81.92	100	0.75	0.22	0.07	238.09	210.10	27.99
15	FWS10- FWS13	80	-	-	-	187 Plots + 77 EWS=3353 Persons=578393 Lts	335 Persons=5025 Lts	Primary school, High school=113850	697.27	279.71	839.13	150	0.75	1.80	0.16	238.72	210.10	28.62
16	FWS13- FWS14	1380	105 Plots=1418 Persons=244605 Lts	142 Persons=2130 Lts	-	-	-	-	246.74	87.00	261.00	100	0.75	1.80	2.17	236.55	210.10	28.45
17	FWS13- FWS15	130	10 Plots=135 Persons=23288 Lts	14 Persons=210 Lts	-	82 Plots + 77 EWS=1800 Persons=370500 Lts	180 Persons=2700 Lts	Primary school, High school=113850	450.55	192.72	578.16	150	0.75	5.80	0.75	237.97	210.10	27.87
18	FWS15- FWS16	910	69 Plots=932 Persons=160770 Lts	93 Persons=1395 Lts	-	-	-	-	162.16	57.18	171.54	100	0.75	0.82	0.44	237.53	210.10	27.43
19	FWS15- FWS17	110	8 Plots=108 Persons=18630 Lts	11 Persons=165 Lts	-	5 Plots + 77 EWS=761 Persons=131272 Lts	76 Persons=1140 Lts	Primary school, High school=113850	264.71	126.97	380.91	100	0.75	2.80	0.30	237.67	210.10	27.57
20	FWS17- FWS18	160	35 EWS=315 Persons=54338 Lts	32 Persons=480 Lts	-	-	-	-	54.82	19.33	57.99	100	0.75	0.12	0.02	237.65	210.10	27.55
21	FWS17- FWS19	20	-	-	-	5 Plots + 42 EWS=446 Persons=76935 Lts	45 Persons=675 Lts	Primary school, High school=113850	191.46	101.37	304.11	100	0.75	2.40	0.05	237.60	210.10	27.50
22	FWS19- FWS18	160	35 EWS=315 Persons=54338 Lts	32 Persons=480 Lts	-	-	-	-	54.82	19.33	57.99	100	0.75	0.12	0.02	237.60	210.10	27.50
23	FWS19- FWS20	160	5 Plots=7 EWS=131 Persons=22598 Lts	13 Persons=195 Lts	Primary School+ High School=113850 Lts	-	-	-	136.64	82.04	246.12	100	0.75	1.60	0.26	237.34	210.10	27.24
24	FWS20- FWS21	105	-	-	-	240 Plots + 60 EWS=3780 Persons=652050 Lts	5670 Lts	-	657.72	231.91	695.73	100	0.75	2.40	0.05	237.60	210.10	27.50
24	FWS20- FWS21	105	-	-	-	240 Plots + 60 EWS = 3780 persons = 652050 Ltr	378 person = 5670 ltrs	-	657.72	231.91	695.73	100	0.75	2.60	0.27	237.07	210.10	26.97
25	FWS21- FWS23	2875	240 Plots + 60 EWS = 3780 persons = 652050 Ltr	378 person = 5670 ltrs	-	-	-	-	657.72	231.91	695.73	100	0.75	2.60	0.27	237.07	210.10	26.97

RESIDENTIAL PLOTTED COLONY "CENTRAL PARK FLOWER VALLEY" ON AREA MEASURING 196.4423 ACRES IN THE REVENUE ESTATE OF VILLAGE DHUNELA & BERKA, SECTOR 29,30,32 & 33, SOHNA, DISTT.- GURGAON (LICENSE NO. 54 OF 2014, 28 OF 2016, 07 OF 2020 & 104 OF 2021)

Sub Work No-1					Water Supply	
Sub Work No-05					Fire fighting	
SI No	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs.)
1	Providing, laying jointing & testing M.S. pipe lines for rising main including cost of fitting, valves, connection etc., complete in all respects.					
	150 mm I/D for Fire Brigade	20	@	1575.00	Rs.	0.32
	100 mm I/D for Tanker Inlet	20	@	1250.00	Rs.	0.25
2	Providing & fixing valve including cost of surface boxes and masonry chambers etc. complete in all respects					
	- 150 mm dia.	1	@	15000.00		0.15
	- 100 mm dia.	1	@	10000.00		0.10
4	Providing and fixing fire hydrant and accessories (LS)		@	750000.00	Rs.	7.50
5	Providing for carriage of material (L.S.) 1 jobs	1	@	50000.00	Rs.	0.50
TOTAL					Rs.	8.82
Add 3% contingencies					Rs.	0.26
TOTAL					Rs.	9.08
Add 49% Department charges, Price Escalation & other unforeseen Charges.					Rs.	4.45
TOTAL COST					Rs.	13.53

0.12
8.84
0.26
9.10
4.46
13.56

Material Statement of Fire ring – MS – 150mm dia

S. No.	Location	200 mm dia pipe	150 mm dia pipe	100 mm dia pipe	80 mm dia pipe	Fire Hydrant
1	Tanker inlet connection	-	-	20	-	-
2	Fire Brigade 4 way	-	20	-	-	-
3	Yard Hydrants = 205 Nos. x 2 Meters	-	-	-	-	-
	Total	0	20	20	0	0

Fire Hydrant System

1	Valves 150mm dia	1 Nos.
2	Valves 100mm dia	1 No.
3	Valves 80mm dia	0 Nos.
4	Fire Hydrants	0 Nos.
5	Fire Brigade Connections	1 No.

RESIDENTIAL PLOTTED COLONY "CENTRAL PARK FLOWER VALLEY" ON AREA MEASURING 196.4423 ACRES IN THE REVENUE ESTATE OF VILLAGE DHUNELA & BERKA, SECTOR 29,30,32 & 33, SOHNA, DISTT.- GURGAON (LICENSE NO. 54 OF 2014, 28 OF 2016, 07 OF 2020 & 104 OF 2021)

Sub Work No-1					Water Supply	
Sub Work No-06					Irrigation	
SI No	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs)
1	Providing, laying, jointing and testing uPVC pipe line conforming to I.S 4985 including cost of excavation etc... complete in all respects.					
	20 mm O/D for Garden Hydrants	328	@	250	Rs.	0.82
	50 mm O/D UPVC pipe	2700	@	550	Rs.	14.85
	75 mm O/D UPVC Pipe for Ring Main	9500	@	800/- 500	Rs.	47.50 76.40
	110 mm O/D from STP to Ring Main	25	@	1000/- 650.00	Rs.	0.16 0.25
2	Providing and fixing Irrigation hydrant valve complete in all respect.	139	@	3500	Rs.	4.87
3	Provision for carriage of material & other foreseen items etc., (L.S.) 1 jobs				Rs.	1.00
4	Providing & fixing ball valve 20 mm	139	@	250	Rs.	0.35
5	Providing & fixing sluice valve complete with chamber					
	- 50 mm dia.	4	@	4000	Rs.	0.16
	- 75 mm dia.	10	@	4500	Rs.	0.45
	- 100 mm dia.	1	@	8000	Rs.	0.08
6	Providing and fixing Irrigation pump 4 nos., 5 HP, 700 LPM @ 15 Mtr. Head complete with foundation & control panel etc.	4	@	1,00,000/- 50000	Rs.	4.00 2.00
TOTAL					Rs.	72.24 102.83
Add 3% contingencies					Rs.	2.17 3.08
TOTAL					Rs.	74.40 105.91
Add 49% Department charges, Price Escalation & other unforeseen Charges.					Rs.	36.46 51.90
TOTAL COST					Rs.	110.86 157.81

Material statement of Irrigation System

S. No.	Line Name	110 mm	75 mm OD	50 mm OD	20 mm OD	Irrigation Hydrants
1	Pump Room to G	25	-			
2	G-G1	-	1850	-		-
3	RING-1					
4	G1-G2			355		
5	G2-G3		90			
6	RING-2					
7	G3-G4-G5-G3			890		
8	G5-G5A		500			
9	Ring-3					
10	G1-G6			925		
11	G6-G7		80			
12	RING-4					
13	G7-G8-G10-G11-G12-G13-G14-G7		2420			
14	G8-G9-G10	-	620			-
15	G11-G12-G15	-	620	-		
16	G16-G17		225			
17	G17-Ring		275			
18	G17-G18-G19-G20		290			
19	GARDEN HYDRANT (89 Nos x 2 M)	-		-	178	89
20	Additional line for (47.759 acre)		2530	530 530		
21	GARDEN HYDRANT (50 Nos x 2 M)	-		-	150	50
	Total	25	9500	2700	328	139

RESIDENTIAL PLOTTED COLONY "CENTRAL PARK FLOWER VALLEY" ON AREA MEASURING 196.4423 ACRES IN THE REVENUE ESTATE OF VILLAGE DHUNELA & BERKA, SECTOR 29,30,32 & 33, SOHNA, DISTT.- GURGAON (LICENSE NO. 54 OF 2014, 28 OF 2016, 07 OF 2020 & 104 OF 2021)

Sub Work No-II					Sewerage Scheme	
SI No	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs)
1	Providing, jointing, cutting and testing S.W pipe class 'A' / S.W.R. PVC and lowering into trenches including cost of excavation, bed concrete, cost of manhole etc., complete in all respects.					
	200 mm I/D Avg. depth upto 0 - 4.00 M (S.W. Pipe)	12245	@	1250.00	Rs.	153.06
	250 mm I/D Avg. depth upto 0 - 4.00 M (S.W. Pipe)	2550	@	1500.00	Rs.	38.25
	300 mm I/D Avg. depth upto 0 - 4.00 M (S.W. Pipe)	785	@	2150.00	Rs.	16.88
	350 mm I/D Avg. depth upto 0 - 4.00 M (RCC Pipe)	20	@	2250.00	Rs.	0.45
	400 mm I/D Avg. depth upto 0 - 4.00 M (RCC Pipe)	62	@	2700.00	Rs.	1.67
	450 mm I/D Avg. depth upto 0 - 4.00 M (RCC Pipe)	960	@	3200.00	Rs.	30.72
	500 mm I/D Avg. depth upto 0 - 4.00 M (RCC Pipe)	20	@	3350.00	Rs.	0.67
2	Provision for lighting and watching L.S				Rs.	1.00
3	Provision for timbering and shuttering L.S.				Rs.	1.00
4	Provision of 150 mm dia liine form STP to HUDA main by pumping (D.I. pipe)	100	@	1575	Rs.	1.50
5	Provision for const. of STP (4.000 KLD)					
6	Provision for making STP (MLD)	4000	@	10000.00	Rs.	400.00
7	Provision for making RCC grease trap 1000 x 1800mm complete	1.00	@	50000.00	Rs.	50.00
8	Provision for carriage of material (L.S.)				Rs.	1.00
9	Provision of cutting road & making it good as same in original condition - 1 job				Rs.	1.00
9	Providing Sewage with HUDDA	1	@	175000.00	Rs.	1.75
TOTAL					Rs.	655.45
Add 3% contingencies					Rs.	19.66
TOTAL					Rs.	675.12
Add 49% Department charges, price esclation, other for unforeseen charges.					Rs.	330.81
TOTAL COST					Rs.	1005.93

EXISTING = 300KL
BALANCE = 3700KL

Provision for const. of STP (4.000 KLD)

300KL (constructed) 12500/-
4 = 150000.00
3700KL (balance cap) 16000/-

vent shaft as per P.H. requirement

8 m for sewer line

L.S

2.00

27.44

942.22

461.69

1403.91

Material statement of Sewerage System – As per drawing sheet

S. No.	Name of Pipe Line	Length of Pipe in M							200 mm (BRANCHES)
		600 mm	450 mm	400 mm	350 mm	300 mm	250 mm	200 mm	
1	S1-S3	-	-	-	-	-	-	400	50
2	S2-S3	-	-	-	-	-	-	350	-
3	S3-S4	-	-	-	-	-	250	-	350
4	S4-S5	-	-	-	-	135	-	-	1170
5	S5-S12	-	-	62	-	60 8	-	-	460
6	S6-S7	-	-	-	-	-	-	400	1540
7	S7-S8	-	-	-	-	90	-	-	1400
8	S8-S9	-	-	-	20	-	-	-	70
9	S9-S10-S11	-	840	-	-	-	-	-	2110
10	S11-S12	-	120	-	-	-	-	-	125
11	S12-S.T.P	20	-	-	-	-	-	-	-
	For Additional Area								
(12) 1	S1-S3 S13-S15	-	-	-	-	-	45	-	30
(13) 2	S2-S3 S14-S15	-	-	-	-	-	35	-	10
(14) 3	S3-S4 S15-S16	-	-	-	-	-	90	-	-
(15) 4	S4-S5 S15-S17	-	-	-	-	-	320	-	120
(16) 5	S4-S6 S15-S18	-	-	-	-	-	320	-	-
(17) 6	S6-S7 S18-S19	-	-	-	-	-	80	-	-
(18) 7	S8-S9 S18-S20	-	-	-	-	-	420	-	70
(19) 8	S9-S10 S21-S22-S23	-	-	-	-	-	200	-	90
(20) 9	S9- Main line	-	-	-	-	-	40	-	-
11	Additional line for (47.759 acre)	-	-	-	-	500	750	1150	2350
	Total	20	960	62	20	785	2550	2300	9945

RESIDENTIAL PLOTTED COLONY "CENTRAL PARK FLOWER VALLEY" ON AREA MEASURING 196.4423 ACRES IN THE REVENUE ESTATE OF VILLAGE DHUNELA & BERKA, SECTOR 29,30,32 & 33, SOHNA, DISTT.- GURGAON (LICENSE NO. 54 OF 2014, 28 OF 2016, 07 OF 2020 & 104 OF 2021)

Sl. No.	Name of Line	Length in Meter	Self										Additional										(Hydraulic Design Sewerage Scheme)									
			Rise @ 13.5 person @ 17250 LPCD	EWS @ 9 person @ 17250 LPCD	Floating population 10% of Population @ 15 LPCD	Commercial, Community Centre, Nursing School, Backwash + Primary School, High School, Nursery, Home = 28220+6594 = 107160	Staff @ 45 LPCD / Person	Pits @ 13.5 persons @ 17250 LPCD	EWS @ 9 person @ 17250 LPCD	Floating population 10% of Population @ 15 LPCD	Commercial, Community Centre, Nursing School, Backwash, Primary School, High School, Nursery, Home = 28220+6594 = 107160	Average Daily Discharge @ 80% of AV + 20% of W.D. flushing	Sub Soil Infiltration @ 10% of AV / W.D	Peak Discharge @ 3 Times of AV including Sub Soil Infiltration	Size of pipe (dia)	Capacity in cumec	Velocity	Gradient	Drop	Level at Start		Level at End										
																				G.L. (Mtr.)	L.L. (Mtr.)											
1	S1-S3	400	37 Pits = 500 Person = 86250 Lts	-	50 Person = 750 Lts	Commercial + Community = 28220+6594 = 107160	-	-	-	-	195.40	167.31	0.22	200.000	0.48	0.750	1.200	2.00	210.10	206.20	210.10	207.20										
2	S2-S3	340	6 Pits = 81 Person = 13975 Lts	-	8 Person = 120 Lts	Nursery School + Nursing Home = 33675	-	-	-	-	65.68	56.65	0.07	200.000	0.48	0.750	1.200	1.75	210.00	206.20	210.10	207.45/207.2										
3	S3-S4	250	134 Pits = 1803 Person = 312052 Lts	-	181 Person = 2715 Lts	Nursery School = 9109	-	43 Pits = 594 Person = 100223 Lts	-	58 Person = 870 Lts	Commercial, Community Centre, Nursery School, Backwash, Nursing Home = 28220+6594 = 107160	595.80	492.80	0.63	250.000	0.659	0.750	1.250	1.00	210.00	207.20	210.10	206.20									
4	S4-S5	135	27 Pits = 364 Person = 62750 Lts	-	36 Person = 540 Lts	-	Staff = 60 No = 2250 Lts	177 Pits = 2350 Person = 412275 Lts	-	239 Person = 3585 Lts	Commercial, Community Centre, Nursery School, Backwash, Nursing Home = 28220+6594 = 107160	640.48	539.78	0.69	300.000	0.945	0.750	1.300	0.45	210.00	206.20	210.10	206.75									
5	S5-S12	170	43 Pits = 583 Person = 100050 Lts	-	58 Person = 870 Lts	-	204 Pits = 2754 Person = 475065 Lts	204 Pits = 2754 Person = 475065 Lts	-	344 Person = 5160 Lts	Commercial, Community Centre, Nursery School, Backwash, Nursing Home = 28220+6594 = 107160	742.44	624.96	0.80	300.000	0.945	0.750	1.300	0.57	210.00	205.75	210.10	205.18									
6	S6-S7	400	23 Pits = 311 Person = 53648 Lts	7 EWS = 10500 Lts	37 Person = 555 Lts	Primary School = 113650	-	64 Pits = 864 Person = 149040 Lts	70 EWS = 115500 Lts	148 Person = 2235 Lts	Primary School + High School + Dispensary = 118850	438.87	365.96	0.48	200.000	0.48	0.750	1.200	2.00	210.00	206.20	210.10	207.20									
7	S7-S8	90	-	-	-	-	-	197 Pits = 2660 Person = 459650 Lts	77 EWS = 119543 Lts	335 Person = 5025 Lts	Primary School + High School + Dispensary = 118850	702.27	590.11	0.76	300.000	0.945	0.750	1.300	0.30	210.00	207.20	210.10	206.90									
8	S8-S9	25	-	-	-	-	-	371 Pits = 5009 Person = 864653 Lts	77 EWS = 119543 Lts	570 Person = 8550 Lts	Primary School + High School + Dispensary = 118850	1111.00	931.50	1.20	350.000	1.29	0.750	1.350	0.07	210.00	206.80	210.10	206.83									
9	S9-S10-S11	420	33 Pits = 446 Person = 76935 Lts	-	45 Person = 675 Lts	-	-	617 Pits = 8330 Person = 1459635 Lts	235 EWS = 36483 Lts	902 Person = 13530 Lts	Primary School + High School + Dispensary = 118850	1766.45	1478.98	1.90	450.000	3.05	0.750	1.450	0.93	210.00	206.83	210.10	206.90									
10	S11-S12	135	41 Pits = 554 Person = 95565 Lts	-	55 Person = 825 Lts	Back Wash = 20000	-	650 Pits = 8773 Person = 151885 Lts	235 EWS = 36483 Lts	1090 Person = 16350 Lts	Primary School + High School + Dispensary = 118850	2130.12	1766.03	2.29	450.000	3.05	0.750	1.450	0.30	210.00	205.90	210.10	206.60									

Sl. No.	Name of Line	Length in Meter	Self				Additional				Design of Pipe						Level at Start		Level at End				
			Pipe @ 13.5 EWS @ 9 person @ 172.50 LPCD	Floating population @ 10% of Population @ 15 LPCD	Commercial, Community Centre, Floating Saving School, Backwash + Primary School+ High School+ Nursing Home	Staff @ 45 LPCD / Person	Pipe @ 13.5 person @ 172.50 LPCD	EWS @ 9 person @ 172.50 LPCD	Floating population @ 10% of Population @ 15 LPCD	Commercial, Community Centre, Nursing School, Backwash, Primary School, High School, Nursing Home (LPCD)	Staff@ 45 LPCD / Person	Average Daily Waste Demand	Average Discharge @ 80% of Domestic + 80% of flushing	Sub Soil Infiltration @ 10% OF W.D.	Peak Discharge @ 3 Times of AV Discharge Including Sub Soil Infiltration	Size of pipe (dia)	Capacity in cu sec	Velocity		Gradient	Drop	G.L	LL
11	S12-STP	20	-	-	-	-	1178 Poles 18558 Person = 274326 / Lts	255 EWS = 2855 Persons = 497957 Lts	5578 Person = 22170 Lts	Commercial, Community Centre, Floating Saving School, Backwash + Primary School+ High School+ Nursing Home	Staff@ 45 Persons=1125	3,557.29	2,952.55	355.73	3.79	600,000	5.45	0.750	1:500	0.04	210.00	205.60	205.56

Note:-
1 The Man hole shall be constructed as per HUDVA N.B.C Norms
2 All the level have been taken with Reference to road level

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Sub Work No-III

Storm water drain

S. No.	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs)
1	Providing, lowering, laying and jointing R.C.C NP-3 pipes and specials into trenches including manholes, chambers etc., excavation, back filling and disposal of surplus earth complete in all respects.					
	400 mm I/D Avg. depth upto 2.0 M.	20068	@	2500	Rs.	501.70
	500 mm I/D Avg. depth upto 2.0 M.	1020	@	3400	Rs.	34.68
	600 mm I/D Avg. depth upto 2.0 M.	110	@	4070	Rs.	4.48
2	Provision for Road Gullies with pipe connection L.S.	LS			Rs.	30.00 35.00
3	Provision for lighting and watching	LS			Rs.	5.00
4	Provision for timbering and shoring L.S.	LS			Rs.	10.00
5	Provision for carriage of material & other foreseen items etc., L.S.	LS			Rs.	10.00
6	Provision for Rain water harvesting arrangements for 196.4423 Acres @ 1.50 Lac / Acres. <i>system places stormwater at selected L.S</i>	196.442	@	150000	Rs.	294.66 150.00
7	Provision for temporary connection with HUDA <i>main line</i>			L.S	Rs.	5.00
8	<i>Provision for Temp. disposal arrangement</i>			L.S	Rs.	50.00 50.00
	TOTAL				Rs.	895.52 1008.6
	Add 3% contingencies				Rs.	26.87 24.33
	TOTAL				Rs.	922.39 1035.19
	Add 49% Department charges, price escalation, other for unforeseen charges.				Rs.	451.97 409.24
	TOTAL				Rs.	1374.36 1244.43

RESIDENTIAL PLOTTED COLONY "CENTRAL PARK FLOWER VALLEY" ON AREA MEASURING 196.4423 ACRES IN THE REVENUE ESTATE OF VILLAGE DHUNELA & BERKA, SECTOR 29,30,32 & 33, SOHNA, DISTT.- GURGAON (LICENSE NO. 54 OF 2014, 28 OF 2016, 07 OF 2020 & 104 OF 2021)

STORM WATER DRAIN

S. No	Name of Drain	400mm dia RCC pipe	500mm dia RCC pipe	600mm dia RCC pipe
Rain Water Harvesting - 1				
1	D1-D2	55		
2	D2-RWH-1	10		
Rain Water Harvesting - 2				
4	D3-D5	30		
5	D4-D5	120		
6	D5-D7	90		
7	D6-D7	55		
8	D7-D8	-	60	
9	D8-RWH-2	-	10	
Rain Water Harvesting - 3				
11	D9-D11	175		
12	D10-D11	260		
13	D11- RWH-3	-	10	
Rain Water Harvesting - 4				
12	D12-D13	175		
14	D13- RWH-4	10		
Rain Water Harvesting - 5				
16	D14-D16	90		
17	D15-D16	35		
18	D16- RWH-5	10		
Rain Water Harvesting - 6				
20	D17-D18	120		
	D18-D19	65		
21	D19-RWH-6	20		
Rain Water Harvesting - 7				
23	D20-D22	55		
24	D21-D22	35		
26	D22-RWH-7	35		
Rain Water Harvesting - 8				
28	D23-D25	15		
29	D24-D25	30		
30	D25-D27	90		
31	D26-D27	50		
32	D27-D30	110		
33	D27-RWH-8	10		
Rain Water Harvesting - 9				
	D31-D34	75		
	D33-D34	45		
	D32-D34	40		
	D34-D35	20		
	D34A-D35	80		
	D35-D35A	-	55	
	D35A-RWH9	-	20	
Rain Water Harvesting - 10				
	D36-D37	130		
	D37-RWH-10	10		
Rain Water Harvesting - 11				
	D38-D38B	50		
	D38A-D38B	95		
	D38B-D41	40		
	D39-D40	30		
	D40-D41	20		
	D41-RWH11	20		
Rain Water Harvesting - 12				

RESIDENTIAL PLOTTED COLONY "CENTRAL PARK FLOWER VALLEY" ON AREA MEASURING 196.4423 ACRES IN THE REVENUE ESTATE OF VILLAGE DHUNELA & BERKA, SECTOR 29,30,32 & 33, SOHNA, DISTT.- GURGAON (LICENSE NO. 54 OF 2014, 28 OF 2016, 07 OF 2020 & 104 OF 2021)

D43-D45					110		
D44-D45					25		
D45-D46					-	240	
D46-RWH12					-	10	
Rain Water Harvesting - 13							
D47-D48					135		
D48-RWH13					20		
Rain Water Harvesting - 14							
D49-D50					170		
D50-RWH14					25		
Rain Water Harvesting - 15							
D51-D52					145		
D52-RWH15					25		
Rain Water Harvesting - 16							
D53-D54					-	210	
D54-RWH16					-	20	
Rain Water Harvesting - 17							
D55-D57					260		
D56-D57					100		
D57-RWH17					40		
Rain Water Harvesting - 18							
D58-D60					100		
D59-D60					30		
D60-D61					-	210	
D61-RWH18					-	20	
Rain Water Harvesting - 19							
D62-D64					190		
D63-D64					265		
D64-RWH19					-	10	
Rain Water Harvesting - 20							
D66-D67					260		
D65-D67					80		
D67-RWH20					-	10	
Rain Water Harvesting - 21							
D68-D70					25		
D69-D70					80		
D70-D71					90		
D71-RWH21					20		
Rain Water Harvesting - 22							
D72-D74					30		
D73-D74					55		
D74-D76					85		
D75-D76					75		
D76-RWH22					10		
Rain Water Harvesting - 23							
D77-D79					165		
D78-D79					150		
D79-D81					40		
D80-D81					90		
D81-D82					-	-	35
D82-RWH23					-	-	10
Rain Water Harvesting - 24							
D83-D85					30		
D84-D85					145		
D85-D86					70		
D86-D91					20		
D87-D88					20		
D88-D90					185		
D89-D90					35		
D90-D91					50		

RESIDENTIAL PLOTTED COLONY "CENTRAL PARK FLOWER VALLEY" ON AREA MEASURING 196.4423 ACRES IN THE REVENUE ESTATE OF VILLAGE DHUNELA & BERKA, SECTOR 29,30,32 & 33, SOHNA, DISTT.- GURGAON (LICENSE NO. 54 OF 2014, 28 OF 2016, 07 OF 2020 & 104 OF 2021)

D91-RWH24					-	20
Rain Water Harvesting - 25						
D92-D94					75	
D93-D94					80	
D94-D95					55	
D94-RWH25					20	
Rain Water Harvesting - 26						
D96-D97					80	
D97-RWH26					20	
Rain Water Harvesting - 27						
D98-D100					40	
D99-D100					35	
D100-D101					180	
D101-RWH27					20	
Rain Water Harvesting - 28						
D102-D103					105	
D103-RWH28					30	
Rain Water Harvesting - 29						
D104-D108					25	
D105-D107					30	
D106-D107					25	
D107-D108					90	
D108-D110					25	
D109-D110					80	
D110-RWH29					20	
Rain Water Harvesting - 30						
D111-D115					75	
D112-D114					115	
D113-D114					75	
D114-D115					50	
D115-RWH30					20	
Rain Water Harvesting - 31						
D116-D117					235	
D117-D119					20	
D118-D119					260	
D119-RWH31					20	
Rain Water Harvesting - 32						
D120-D121					260	
D121-D123					20	
D122-D123					220	
D123-RWH32					20	
Rain Water Harvesting - 33						
D124-D125					135	
D125-RWH33					20	
Rain Water Harvesting - 34						
D126-D128					35	
D127-D128					90	
D128-D130					55	
D129-D130					60	
D130-RWH34					10	
Rain Water Harvesting - 35						
D131-D132					215	
D132-RWH35					10	

RESIDENTIAL PLOTTED COLONY "CENTRAL PARK FLOWER VALLEY" ON AREA MEASURING 196.4423 ACRES IN THE REVENUE ESTATE OF VILLAGE DHUNELA & BERKA, SECTOR 29,30,32 & 33, SOHNA, DISTT.- GURGAON (LICENSE NO. 54 OF 2014, 28 OF 2016, 07 OF 2020 & 104 OF 2021)

Rain Water Harvesting - 36								
D133-D135						40		
D134-D135						60		
D135-D137						30		
D136-D137						60		
D137-D139						55		
D138-D139						60		
D139-RWH36						10		
Rain Water Harvesting - 37								
D140-D142						35		
D141-D142						65		
D142-D143						35		
D143A-D143						100		
D143-RWH37						10		
OVER FLOW TO MUNICIPAL DRAIN						20		
Rain Water Harvesting - 38								
D144-D145						145		
D145-RWH38						10		
Rain Water Harvesting - 39								
D146-D147						210		
D147-RWH39						20		
Rain Water Harvesting - 40								
D148-D150						50		
D149-D150						105		
D150-D152						60		
D151-D152						105		
D152-D154						55		
D153-D154						105		
D154-RWH40						-		10
Rain Water Harvesting - 41								
D155-D157						45		
D156-D157						105		
D157-D159						45		
D158-D159						105		
D159-D161						-	35	
D160-D161						50		
D161-RWH						-	10	
CONNECTION TO MUNICIPAL DRAIN						-	20	
Rain Water Harvesting - 42								
D162-D162B						65		
D162A-D162B						50		
D162B-D163						50		
D163A-D163						105		
D164-D164B						50		
D164A-D164B						100		
D164B-D164D						-	50	
D164C-D164D						100		
D164D-D165						-		45
D165-RWH42						-		10
Rain Water Harvesting - 43								
D166-D167						235		
D167-RWH43						20		
Rain Water Harvesting - 44								
D168-D170						140		
D169-D170						135		
D170-RWH44						15		

RESIDENTIAL PLOTTED COLONY "CENTRAL PARK FLOWER VALLEY" ON AREA MEASURING 196.4423 ACRES IN THE REVENUE ESTATE OF VILLAGE DHUNELA & BERKA, SECTOR 29,30,32 & 33, SOHNA, DISTT.- GURGAON (LICENSE NO. 54 OF 2014, 28 OF 2016, 07 OF 2020 & 104 OF 2021)

Rain Water Harvesting - 45								
D171-D172						80		
D172-D173						50		
D173-D177A						135		
D174-D175						80		
D175-D176						80		
D176-D177A						50		
D177A-RWH45						10		
Rain Water Harvesting - 46								
D177-D178						195		
D178-RWH46						10		
Rain Water Harvesting - 47								
D179-D181						80		
D180-D181						145		
D181-D183						10		
D182-D183						100		
D183-RWH47						10		
Rain Water Harvesting - 48								
D184-D185						40		
D185-D186						10		
D186-D187						245		
D187-RWH48						20		
Rain Water Harvesting - 49								
D188-D190						205		
D189-D190						160		
D190-RWH49						10		
Rain Water Harvesting - 50								
D191-D193						30		
D192-D193						80		
D193-D195						40		
D194-D195						75		
D195-RWH50						25		
Rain Water Harvesting - 51								
D196-D197						100		
D197-D198						90		
D198-RWH51						10		
Rain Water Harvesting - 52								
D199-D200						225		
D200-RWH52						20		
Rain Water Harvesting - 53								
D201-D202						20		
D203-D204						50		
D204-D205						50		
D205-RWH53						20		
Additional Rain Water Harvesting line for 47.75 acre								
Additional drainage line						5738		
TOTAL						20068	1020	110

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Storm Water Drain

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Sl. No.	Name of Line	Length in Meter	Catchment Area in sqmt		Total Area (Sqmt)	Discharge in Cusec (1 Acre = 1 Cusec)	Proposed dia of pipe (mm)	Velocity (mt/sec)	Design Capacity of Drain (Cusecs)	Gradient	Drop (Mtr.)	Level at Start			Level at End		
			Self	Additional								G.L (Mtr.)	I.L (Mtr.)	Depth (Mtr.)	G.L (Mtr.)	I.L (Mtr.)	Depth (Mtr.)
RAIN WATER HARVESTING-1																	
1	D1-D2	55	198*18+37*35=3564+1295=4859	-	4859	1.201	400	0.75	3.30	1:500	0.11	210.10	209.20	0.900	210.10	209.09	1.010
2	D2-RWH-1	10	35*10=350	LINE D1-D2=4859	5209	1.287	400	0.75	3.30	1:500	0.02	210.10	209.09	1.010	210.10	209.07	1.030
RAIN WATER HARVESTING-2																	
3	D3-D5	30	30*20=600	-	600	0.148	400	0.75	3.30	1:500	0.06	210.10	209.20	0.900	210.10	209.14	0.960
4	D4-D5	120	55*50+35*30+40*20=2750+1050+800=4600	-	4600	1.137	400	0.75	3.30	1:500	0.24	210.10	209.20	0.900	210.10	208.96	1.140
5	D5-D7	90	90*45=4050	LINE (D3-D4)+(D4-D5)=5200	9250	2.286	400	0.75	3.30	1:500	0.18	210.10	208.96	1.140	210.10	208.78	1.320
6	D6-D7	55	55*35=1925	-	1925	0.476	400	0.75	3.30	1:500	0.11	210.10	209.20	0.900	210.10	209.09	1.010
7	D7-D8	60	60*35=2700	LINE (D5-D7)+(D6-D7)=11175	13275	3.280	500	0.75	5.20	1:600	0.10	210.10	208.78	1.320	210.10	208.66	1.440
8	D8-RWH-2	10	-	LINE D7-D8=13275	13275	3.280	500	0.75	5.20	1:600	0.02	210.10	208.66	1.440	210.10	208.64	1.460
RAIN WATER HARVESTING-3																	
9	D9-D11	175	175*35=6125	-	6125	1.513	400	0.75	3.30	1:500	0.35	210.10	209.20	0.900	210.10	208.85	1.250
10	D10-D11	260	260*35=9100	-	9100	2.249	400	0.75	3.30	1:500	0.52	210.10	209.20	0.900	210.10	208.68	1.420
11	D11-RWH-3	10	-	LINE (D9-D11)+(D10-D11)=15225	15225	3.762	500	0.75	5.20	1:600	0.02	210.10	208.68	1.420	210.10	28.66	181.440
RAIN WATER HARVESTING-4																	
12	D12-D13	175	175*35=6125	-	6125	1.513	400	0.75	3.30	1:500	0.35	210.10	209.20	0.900	210.10	208.85	1.250
13	D13-RWH-4	10	35*10=350	LINE D12-D13=6125	6475	1.600	400	0.75	3.30	1:500	0.02	210.10	208.85	1.250	210.10	208.83	1.270

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RAIN WATER HARVESTING-5																	
14	D14-D16	90	90*65=5850	-	5850	1.446	400	0.75	3.30		0.18	210.10	208.83	1.270	210.10	208.65	1.450
15	D15-D16	35	35*20=700	-	700	0.173	400	0.75	3.30		0.07	210.10	209.20	0.900	210.10	209.13	0.970
16	D16-RWH-5	10	65*10=650	LINE D(14-D16)+(D15-D16)=6550	6550	1.618	400	0.75	3.30		0.02	210.10	208.65	1.450	210.10	208.63	1.470
RAIN WATER HARVESTING-6																	
17	D17-D19	120	65*55+55*20=3575 +1160=4675	-	4675	1.155	400	0.75	3.30		0.24	210.10	209.20	0.900	210.10	208.96	1.140
18	D18-D19	65	80*65=5200	LINE D17-D18=4675	9875	2.440	400	0.75	3.30		0.13	210.10	208.96	1.140	210.10	208.83	1.270
19	D19-RWH-6	20	80*20=1600	LINE D18-D19=9875	11475	2.835	400	0.75	3.30		0.04	210.10	208.83	1.270	210.10	208.79	1.310
RAIN WATER HARVESTING-7																	
20	D20-D22	55	55X30=1650	-	1650	0.408	400	0.75	3.30		0.11	210.10	209.20	0.900	210.10	209.09	1.010
21	D21-D22	35	30X35=1050	-	1050	0.259	400	0.75	3.30		0.07	210.10	209.20	0.900	210.10	209.13 / 209.09	0.970
22	D22-RWH-7	35	35X30=1050	LINE D20-D22=1650 D21-D22=1050 =2700	3750	0.927	400	0.75	3.30		0.07	210.10	209.09	1.010	210.10	209.02	1.080
RAIN WATER HARVESTING-8																	
23	D23-D25	15	45X35=1575	-	1575	0.389	400	0.75	3.30		0.03	210.10	209.20	0.900	210.10	209.17	0.930
24	D24-D25	30	45X35=1575	LINE D23-D25=1575	3150	0.778	400	0.75	3.30		0.06	210.10	209.20	0.900	210.10	209.14 / 209.17	0.960
25	D25-D27	90	90X45=4050	LINE D24-D25=3150	7200	1.779	400	0.75	3.30		0.18	210.10	209.14	0.960	210.10	208.96	1.140
26	D26-D27	50	55*20=1100	-	1100	0.272	400	0.75	3.30		0.10	210.10	209.20	0.900	210.10	209.10 / 208.96	1.000
27	D27-D30	110	110X35=3850	LINE D25-D27=7200 + LINE D26-D27 =1100 = 8300	12150	3.002	400	0.75	3.30		0.22	210.10	208.96	1.140	210.10	208.74	1.360
28	D30-RWH-8	10	35X20=700	LINE D27-D30=12150	12850	3.175	400	0.75	3.30		0.02	210.10	208.74	1.360	210.10	208.72	1.380

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RAIN WATER HARVESTING-9																	
29	D31-D34	75	75*45=3375	-	3375	0.834	400	0.75	3.30	1:500	0.15	210.10	209.20	0.900	210.10	209.08	1.020
30	D33-D34	45	45*30=1350	-	1350	0.334	400	0.75	3.30	1:500	0.09	210.10	209.20	0.900	210.10	209.11	0.990
31	D32-D34	40	40*30=1200	-	1200	0.297	400	0.75	3.30	1:500	0.08	210.10	209.20	0.900	210.10	209.12	0.980
32	D34-D35	20	35*20=700	LINE D31+D32-D33-D34=5925	6625	1.637	400	0.75	3.30	1:500	0.04	210.10	209.05	1.050	210.10	209.01	1.090
33	D34A-D35	80	80*75=6000	-	6000	1.483	400	0.75	3.30	1:500	0.16	210.10	209.20	0.900	210.10	209.04	1.060
34	D35-D35A	55	55*30=1650	LINE (D34A-D35)+(D35-D35A)=12625	14275	3.527	500	0.75	5.20	1:600	0.09	210.10	209.10	1.000	210.10	209.90	0.200
35	D35A-RWH-9	20	-	LINE D35-D35A=14275	14275	3.527	500	0.75	5.20	1:600	0.03	210.10	208.90	1.200	210.10	208.86	1.240
RAIN WATER HARVESTING-10																	
36	D36-D37	130	480*35=1925+6000	-	7925	1.958	400	0.75	3.30	1:500	0.26	210.10	209.20	0.90	210.10	208.94	1.16
37	D37-RWH-10	10	80*10=800	LINE D36-D37=7925	8725	2.156	400	0.75	3.30	1:500	0.02	210.10	208.94	1.16	210.10	209.92	0.18
RAIN WATER HARVESTING-11																	
38	D38-D38B	50	70*50=3500	-	3500	0.865	400	0.75	3.30	1:500	0.10	210.10	209.20	0.90	210.10	209.1	1.00
39	D38A-D38B	95	95*35=3325	-	3325	0.822	400	0.75	3.30	1:500	0.19	210.10	209.20	0.90	210.10	209.01	1.09
40	D38B-D41	40	65*40=2600	LINE (D38B-D38B)+(D38A-D38B)=6925	9425	2.329	400	0.75	3.30	1:500	0.08	210.10	209.01	1.09	210.10	208.93	1.17
41	D39-D40	30	45*30=1350	-	1350	0.334	400	0.75	3.30	1:500	0.06	210.10	209.20	0.90	210.10	209.14	0.96
42	D40-D41	20	45*20=900	LINE D39-D40=1350	2250	0.556	400	0.75	3.30	1:500	0.04	210.10	209.14	0.96	210.10	208.93	1.17
43	D41-RWH-11	20	45*20=900	LINE (D39-D40)+(D40-D41)=11675	12575	3.107	400	0.75	3.30	1:500	0.04	210.10	208.93	1.17	210.10	208.89	1.21
RAIN WATER HARVESTING-12																	
44	D43-D45	110	95X35=3325	-	3325	0.822	400	0.75	3.30	1:500	0.22	210.10	209.20	0.90	210.10	208.98	1.12
45	D44-D45	25	80X25=2000	-	2000	0.494	400	0.75	3.30	1:500	0.05	210.10	209.20	0.90	210.10	209.15 / 208.98	0.95

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46	D45-D46	240	240X50=12000	LINE D43-D45=3325 + LINE D44-D45 =2000 =5325	17325	4.281	500	0.75	5.20	1:600	0.40	210.10	208.98	1.12	210.10	208.58	1.52
47	D46-RWH-12	10	-	LINE D45- D46=17325	17325	4.281	500	0.75	5.20	1:600	0.02	210.10	208.58	1.52	210.10	208.56	1.54
RAIN WATER HARVESTING-13																	
48	D47-D48	135	70X15+105X45+60 X25=7275	-	7275	1.798	400	0.75	3.30	1:500	0.27	210.10	209.20	0.90	210.10	208.93	1.17
49	D48-RWH-14	20	20X15=300	LINE D47-D48=7275	7575	1.872	400	0.75	3.30	1:500	0.04	210.10	208.93	1.17	210.10	208.89	1.21
RAIN WATER HARVESTING-14																	
51	D49-D50	170	60X35+35X35+70X 60=7525	-	7525	1.859	400	0.75	3.30	1:500	0.34	210.10	209.20	0.90	210.10	208.86	1.24
52	D50-RWH-14	15	30X25=875	LINE D49-D50=7525	8400	2.076	400	0.75	3.30	1:500	0.03	210.10	208.86	1.24	210.10	208.83	1.27
RAIN WATER HARVESTING-15																	
53	D51-D52	145	140X30+10X20= 4400	-	4400	1.087	400	0.75	3.30	1:500	0.29	210.10	209.20	0.90	210.10	208.91	1.19
54	D52-RWH-15	25	25X20=500	LINE D51-D52=4400	4900	1.211	400	0.75	3.30	1:500	0.05	210.10	208.91	1.19	210.10	208.86	1.24
RAIN WATER HARVESTING-16																	
55	D53-D54	210	110X60+100X20=8 600	-	8600	2.125	400	0.75	3.30	1:500	0.42	210.10	209.20	0.90	210.10	208.78	1.32
56	D54-RWH-16	20	20X20=400	LINE D53-D54=8600	9000	2.224	400	0.75	3.30	1:500	0.04	210.10	208.78	1.32	210.10	208.74	1.36

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RAIN WATER HARVESTING-17																	
57	D55-D57	260	160X40+45X20+55 X40 = 9500	-	9500	2.347	400	0.75	3.30	1:500	0.52	210.10	209.20	0.90	210.10	208.68	1.42
58	D56-D57	100	30X20+70X40=340 0	LINE D55-D57=9500	12900	3.188	400	0.75	3.30	1:500	0.20	210.10	208.68	1.42	210.10	208.48	1.62
59	D57-RWH-17	40	-	LINE D56- D57=12900	12900	3.188	400	0.75	3.30	1:500	0.08	210.10	208.48	1.62	210.10	208.40	1.70
RAIN WATER HARVESTING-18																	
60	D58-D60	100	100X45=4500	-	4500	1.112	400	0.75	3.30	1:500	0.20	210.10	209.20	0.90	210.10	209	1.10
61	D59-D60	30	30X20=600	-	600	0.148	400	0.75	3.30	1:500	0.06	210.10	209.20	0.90	210.10	209.14	0.96
62	D60-D61	210	210X45=9450	LINE D58-D60 + LINE D59-D60 =5100	14550	3.595	500	0.75	5.20	1:600	0.35	210.10	209.00	1.10	210.10	208.65	1.45
63	D61-RWH-18	20	-	LINE D60-D61 =14550	14550	3.595	500	0.75	5.20	1:600	0.03	210.10	208.65	1.45	210.10	208.62	1.48
RAIN WATER HARVESTING-19																	
64	D62-D64	190	190X35=6650	-	6650	1.643	400	0.75	3.30	1:500	0.38	210.10	209.20	0.90	210.10	209.04	1.06
65	D63-D64	265	265X35=9275	-	9275	2.292	400	0.75	3.30	1:500	0.53	210.10	209.20	0.90	210.10	208.67/ 208.82	1.43
66	D64-RWH-19	10	-	LINE D6- D64+LINE D63-D64 = 6650+9275 = 15925	15925	3.935	500	0.75	5.20	1:600	0.02	210.10	208.67	1.43	210.10	208.65	1.45
RAIN WATER HARVESTING-20																	
67	D65-D67	80	80X40=3200	-	3200	0.791	400	0.75	3.30	1:500	0.16	210.10	209.20	0.90	210.10	209.04	1.06
68	D66-D67	265	210X40+55X50= 11150	-	11150	2.755	400	0.75	3.30	1:500	0.53	210.10	209.20	0.90	210.10	208.67	1.43
69	D67-RWH-20	20	-	LINE D65-D67 +LINE D66-D67 =3200+11150 = 14350	14350	3.546	500	0.75	5.20	1:600	0.03	210.10	208.67	1.43	210.10	208.64	1.46
RAIN WATER HARVESTING-21																	
70	D68-D70	25	25X20=500	-	500	0.124	400	0.75	3.30	1:500	0.05	210.10	209.20	0.90	210.10	209.15	0.95
71	D69-D70	80	80X40=3200	-	3200	0.791	400	0.75	3.30	1:500	0.16	210.10	209.20	0.90	210.10	209.04/20 9.15	1.06

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72	D70-D71	90	80X40=3200	LINE D68-D70 +LINE D69-D70 =500+3200 = 3700	6900	1.705	400	0.75	3.30	1:500	0.18	210.10	209.04	1.06	210.10	208.86	1.24
73	D71-RWH-21	20	40X20 = 800	LINE D70-D71 =6900	7700	1.903	400	0.75	3.30	1:500	0.04	210.10	208.86	1.24	210.10	208.82	1.28
RAIN WATER HARVESTING-22																	
74	D72-D74	30	35X30 =1050	-	1050	0.259	400	0.75	3.30	1:500	0.06	210.10	209.20	0.90	210.10	209.14	0.96
75	D73-D74	55	55X45=2475	-	2475	0.612	400	0.75	3.30	1:500	0.11	210.10	209.20	0.90	210.10	209.09/20 9.14	1.01
76	D74-D76	85	85X35 =2975	LINE D72-D74 +LINE D73-D74 =1050+2475 = 3525	6500	1.606	400	0.75	3.30	1:500	0.17	210.10	209.09	1.01	210.10	208.92	1.18
77	D75-D76	75	75X40 = 3000	-	3000	0.741	400	0.75	3.30	1:500	0.15	210.10	209.20	0.90	210.10	209.05/ 208.92	1.92
78	D76-RWH - 22	10	-	LINE D74-D76 +LINE D75-D76 =6500+3000 = 9500	9500	2.347	400	0.75	3.30	1:500	0.02	210.10	208.92	1.18	210.10	208.90	1.20

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RAIN WATER HARVESTING-23														
79	D77-D79	165	95X60+70X50 =9200	-	9200	2.273	400	0.75	3.30	1:500	0.33	210.10	209.20	0.90
80	D78-D79	150	70X65+80X130 =6950	-	6950	1.717	400	0.75	3.30	1:500	0.30	210.10	209.20	0.90
81	D79-D81	40	40X40=1600	LINE D77-D79+D78-D79=9200+6950 = 16150	17750	4.386	500	0.75	5.20	1:600	0.07	210.10	208.87	1.23
82	D80-D81	90	90X30 = 2700	-	2700	0.667	400	0.75	3.30	1:500	0.18	210.10	209.20	0.90
83	D81-D82	35	35X20 = 700	LINE D79-D81+D80-D81=17750+2700 = 20450	21150	5.226	600	0.75	7.50	1:700	0.05	210.10	208.08	1.30
84	D82-RWH-23	10	-	LINE D81-D82=21150	21150	5.226	600	0.75	7.50	1:700	0.01	210.10	208.75	1.35
RAIN WATER HARVESTING-24														
85	D83-D85	30	40X30 = 1200	-	1200	0.297	400	0.75	3.30	1:500	0.06	210.10	209.20	0.90
86	D84-D85	145	145X30 = 4350	-	4350	1.075	400	0.75	3.30	1:500	0.29	210.10	209.09	1.01
87	D85-D86	70	70X30 = 2100	LINE D83-D85+D84-D85=1200+4350 = 5550	7650	1.890	400	0.75	3.30	1:500	0.14	210.10	208.91	1.19
88	D86-D91	20	40X20 = 800	LINE D85-D86= 7650	8450	2.088	400	0.75	3.30	1:500	0.04	210.10	208.77	1.33
89	D88-D90	185	185X30 = 5550	-	5550	1.371	400	0.75	3.30	1:500	0.37	210.10	208.73	1.37
90	D89-D90	35	35X30 = 1050	-	1050	0.259	400	0.75	3.30	1:500	0.07	210.10	209.20	0.90
91	D90-D91	50	50X30 = 1500	LINE D88-D90+D89-D90=5550+1050 = 6600	8100	2.001	400	0.75	3.30	1:500	0.10	210.10	208.83	1.27

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92	D91-RWH - 24	20	-	LINE D86-D91+D90-D91=8450+8100 =16550	16550	4.089	500	0.75	5.20	1.600	0.03	210.10	208.73	1.37	210.10	208.7	1.40
RAIN WATER HARVESTING-25																	
93	D92-D94	75	60X50+40X15=3600	-	3600	0.890	400	0.75	3.30	1.500	0.15	210.10	209.20	0.90	210.10	209.05	1.05
94	D93-D94	80	80X65 = 5200	-	5200	1.285	400	0.75	3.30	1.500	0.16	210.10	209.20	0.90	210.10	209.04/209.05	1.06
95	D94-D95	55	55X40 = 2200	LINE D92-D94+D93-D94=3600+5200 = 8800	11000	2.718	400	0.75	3.30	1.500	0.11	210.10	209.04	1.06	210.10	208.93	1.17
96	D95-RWH - 25	20	40X20 = 800	LINE D94-D95 = 11000	11000	2.718	400	0.75	3.30	1.500	0.04	210.10	208.93	1.17	210.10	208.89	1.21
RAIN WATER HARVESTING-26																	
97	D96-D97	80	80x70=5600	-	5600	1.384	400	0.75	3.30	1.500	0.16	210.10	209.20	0.90	210.10	209.04	1.06
98	D97-RWH-26	20	70x20=1400	LINE D96-D97=5600	7000	1.730	400	0.75	3.30	1.500	0.04	210.10	208.73	1.37	210.10	209	1.10
RAIN WATER HARVESTING-27																	
99	D98-D100	40	40x30=1200	-	1200	0.297	400	0.75	3.30	1.500	0.08	210.10	209.20	0.90	210.10	209.12	0.98
100	D99-D100	35	35x30 =1050	-	1050	0.259	400	0.75	3.30	1.500	0.07	210.10	209.20	0.90	210.10	209.13/209.12	0.97
101	D100-D101	180	180x50 = 9000	LINE D98-D100+ D99-D100=1200+1050 =2250	11250	2.780	400	0.75	3.30	1.500	0.36	210.10	209.12	0.98	210.10	208.76	1.34
102	D101-RWH-27	20	-	LINE D100-D101=11250	11250	2.780	400	0.75	3.30	1.500	0.04	210.10	208.76	1.34	210.10	208.72	1.38
RAIN WATER HARVESTING-28																	
103	D102-D103	105	105X20 = 2100	-	2100	0.519	400	0.75	3.30	1.500	0.21	210.10	209.20	0.90	210.10	208.99	1.11
104	D103-RWH - 28	30	-	LINE D102-D103=2100	2100	0.519	400	0.75	3.30	1.500	0.06	210.10	208.99	1.11	210.10	208.93	1.17
RAIN WATER HARVESTING-29																	
105	D104-D108	25	35X25 = 875	-	875	0.216	400	0.75	3.30	1.500	0.05	210.10	209.20	0.90	210.10	209.15	0.95

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106	D105-D107	30	30X25 = 750	-	750	0.185	400	0.75	3.30	1:500	0.06	210.10	209.20	0.90	210.10	209.14	0.96
107	D106-D107	25	25X25 = 625	-	625	0.154	400	0.75	3.30	1:500	0.05	210.10	208.88	1.22	210.10	209.15	0.95
108	D107-D108	90	90X40 = 3600	LINE D105-D107+ D106-D107=625+750 =1375	4975	1.229	400	0.75	3.30	1:500	0.18	210.10	209.14	0.96	210.10	208.96	1.14
109	D108-D110	25	35X25 = 875	LINE D104- D108+D107- D109=875+4975 = 5850	6725	1.662	400	0.75	3.30	1:500	0.05	210.10	208.96	1.14	210.10	208.91	1.19
110	D109-D110	80	80X20 = 1600	-	1600	0.395	400	0.75	3.30	1:500	0.16	210.10	209.20	0.90	210.10	209.04 / 208.91	1.06
111	D110-RWH-29	20	25X20 = 700	LINE D108- D110+D109- D110=1600+6725 = 8325	9025	2.230	400	0.75	3.30	1:500	0.04	210.10	208.91	1.19	210.10	208.87	1.23
RAIN WATER HARVESTING-30																	
112	D111-D115	75	75X50 = 3750	-	3750	0.927	400	0.75	3.30	1:500	0.15	210.10	209.20	0.90	210.10	209.05	1.05
113	D112-D114	115	115X25 = 2875	-	2875	0.710	400	0.75	3.30	1:500	0.23	210.10	209.20	0.90	210.10	208.97	1.13
114	D113-D114	75	75X50 = 3750	-	3750	0.927	400	0.75	3.30	1:500	0.15	210.10	209.20	0.90	210.10	209.05 / 208.97	1.05
115	D114-D115	50	50X50 = 2500	LINE D112- D114+D113- D114=2875+3750 = 6625	9125	2.255	400	0.75	3.30	1:500	0.10	210.10	208.97	1.13	210.10	208.87 / 209.05	1.23
116	D115-RWH-30	20	-	LINE D114- D115+D111-D115 = 9125+3750 = 12875	12875	3.181	400	0.75	3.30	1:500	0.04	210.10	208.87	1.23	210.10	208.83	1.27
RAIN WATER HARVESTING-31																	
117	D116-D117	235	235X12 = 2820	-	2820	0.697	400	0.75	3.30	1:500	0.47	210.10	209.30	0.80	210.10	208.73	1.37
118	D117-D119	20	20X12 = 240	LINE D116- D117+2820	3060	0.756	400	0.75	3.30	1:500	0.04	210.10	208.73	1.37	210.10	208.69	1.41
119	D118-D119	260	260X12 = 3120	-	3120	0.771	400	0.75	3.30	1:500	0.52	210.10	209.20	0.90	210.10	208.68 / 208.69	1.42
120	D119-RWH-31	20	20X12 = 240	LINE D118- D119+D117- D119=3120+3060 =	6420	1.586	400	0.75	3.30	1:500	0.04	210.10	208.68	1.42	210.10	208.64	1.46
RAIN WATER HARVESTING-32																	

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121	D120-D121	260	260X12 = 3120	-	3120	0.771	400	0.75	3.30	1:500	0.52	210.10	209.20	0.90	210.10	208.68/ 208.69	1.42
122	D121-D123	20	-	LINE D120-D121=3120	3120	0.771	400	0.75	3.30	1:500	0.04	210.10	208.68	1.42	210.10	208.64	1.46
123	D122-D123	220	220X35 = 7700	-	7700	1.903	400	0.75	3.30	1:500	0.44	210.10	209.04	1.06	210.10	208.76 / 208.64	1.34
124	D123-RWH - 32	20	35X20 = 700	LINE D122-D123 +D121-D123=7700+3120 =10820	11520	2.847	400	0.75	3.30	1:500	0.04	210.10	208.64	1.46	210.10	208.60	1.50
RAIN WATER HARVESTING-33																	
125	D124-D125	135	135X12 = 1620	-	1620	0.400	400	0.75	3.30	1:500	0.27	210.10	209.20	0.90	210.10	208.93	1.17
126	D125-RWH-33	20	20X12 = 240	LINE D124-D125=1620	1860	0.460	400	0.75	3.30	1:500	0.04	210.10	208.93	1.17	210.10	208.89	1.21
RAIN WATER HARVESTING-34																	
127	D126-D128	35	35X20 = 700	-	700	0.173	400	0.75	3.30	1:500	0.07	210.10	209.20	0.90	210.10	209.13	0.97
128	D127-D128	90	90X35 = 3150	-	3150	0.778	400	0.75	3.30	1:500	0.18	210.10	209.20	0.90	210.10	209.02 / 209.13	1.08
129	D128-D130	55	55X20 = 1100	LINE D126-D128 +D127-D128=700+3150 = 3850	4950	1.223	400	0.75	3.30	1:500	0.11	210.10	209.20	0.90	210.10	208.91	1.19
130	D129-D130	60	60X50 = 3000	-	3000	0.741	400	0.75	3.30	1:500	0.12	210.10	209.20	0.90	210.10	209.08 / 208.91	1.02
131	D130-RWH - 34	10	20X10 = 200	LINE D128-D130 +D129-D130=4950+3000 = 7950	8150	2.014	400	0.75	3.30	1:500	0.02	210.10	208.91	1.19	210.10	208.89	1.21
RAIN WATER HARVESTING-35																	
132	D131-D132	215	220X25 = 5500	-	5500	1.359	400	0.75	3.30	1:500	0.43	210.10	209.20	0.90	210.10	208.77	1.33
133	D132-RWH-35	10	25X10 = 250	LINE D131-D132=5500	5750	1.421	400	0.75	3.30	1:500	0.02	210.10	208.77	1.33	210.10	208.75	1.35
RAIN WATER HARVESTING-36																	
134	D133-D135	40	40X20 = 800	-	800	0.198	400	0.75	3.30	1:500	0.08	210.10	209.20	0.90	210.10	209.12	0.98
135	D134-D135	60	60X60 = 3600	-	3600	0.890	400	0.75	3.30	1:500	0.12	210.10	209.20	0.90	210.10	209.08 / 209.12	1.02

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136	D135-D137	30	30X20 = 600	LINE D133-D135 +D134- D135=800+3600 = 4400	5000	1.235	400	0.75	3.30	1:500	0.06	210.10	209.08	1.02	210.10	209.02	1.08
137	D136-D137	60	60X40 = 2400	-	2400	0.593	400	0.75	3.30	1:500	0.12	210.10	209.20	0.90	210.10	209.08 / 209.02	1.02
138	D137-D139	55	55X20 = 1100	LINE D135-D137 +D136- D137=5000+2400 = 7400	8500	2.100	400	0.75	3.30	1:500	0.11	210.10	209.02	1.08	210.10	208.91	1.19
139	D138-D139	60	60X40 = 2400	-	2400	0.593	400	0.75	3.30	1:500	0.12	210.10	209.02	1.08	210.10	209.08 / 208.91	1.02
140	D139-RWH-36	10	40X10 = 400	LINE D137- D139+D138- D139=8500+2400 = 10900	11300	2.792	400	0.75	3.30	1:500	0.02	210.10	208.91	1.19	210.10	208.89	1.21
RAIN WATER HARVESTING-37																	
141	D140-D142	35	35X30 = 1050	-	1050	0.259	400	0.75	3.30	1:500	0.07	210.10	209.20	0.90	210.10	209.13	0.97
142	D141-D142	65	65X50 = 3250	-	3250	0.803	400	0.75	3.30	1:500	0.13	210.10	209.20	0.90	210.10	209.07 / 209.13	1.03
143	D142-D143	35	35X30 = 1050	LINE D140- D142+D141- D142=1050+3250 = 4300	5350	1.322	400	0.75	3.30	1:500	0.07	210.10	209.07	1.03	210.10	209.00	1.10
144	D143A-D143	100	100X40 = 4000	-	4000	0.988	400	0.75	3.30	1:500	0.20	210.10	209.07	1.03	210.10	209.00 / 209.00	1.10

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145	D143-RWH-37	10	20X10 = 200	LINE D142-D143+D143A-D143=5350+4000 = 9350	9550	2.360	400	0.75	3.30	1:500	0.02	210.10	209.00	1.10	210.10	208.98	1.12
RAIN WATER HARVESTING-38																	
146	D144-D145	145	145X40 = 5800	-	5800	1.433	400	0.75	3.30	1:500	0.29	210.10	209.20	0.90	210.10	208.91	1.19
147	D145-RWH - 38	10	40X20 = 800	LINE D144-D145 = 5800	6600	1.631	400	0.75	3.30	1:500	0.02	210.10	208.91	1.19	210.10	208.89	1.21
RAIN WATER HARVESTING-39																	
148	D146-D147	210	210X40 = 8400	-	8400	2.076	400	0.75	3.30	1:500	0.42	210.10	209.20	0.90	210.10	208.78	1.32
149	D147-RWH-39	20	40X20 = 800	LINE D146-D147=8400	9200	2.273	400	0.75	3.30	1:500	0.04	210.10	208.78	1.32	210.10	208.74	1.36
RAIN WATER HARVESTING-40																	
150	D148-D150	50	50X20 = 1000	-	1000	0.247	400	0.75	3.30	1:500	0.10	210.10	209.20	0.90	210.10	209.1	1.0
151	D149-D150	105	105X60 = 6300	-	6300	1.557	400	0.75	3.30	1:500	0.21	210.10	209.10	1.00	210.10	208.89	1.21
152	D150-D152	60	60X20 = 1200	LINE D148-D150+D149-D150=6300+1000=7300	8500	2.100	400	0.75	3.30	1:500	0.12	210.10	208.89	1.21	210.10	208.77	1.33
153	D151-D152	105	105X60 = 6300	-	6300	1.557	400	0.75	3.30	1:500	0.21	210.10	208.89	1.21	210.10	208.99 / 208.77	1.11
154	D152-D154	55	55X10 = 550	LINE D150-D152+D151-D152=8500+6300 = 14800	15350	3.793	500	0.75	5.20	1:600	0.09	210.10	208.77	1.33	210.10	208.68	1.42
155	D153-D154	105	105X60 = 6300	-	6300	1.557	400	0.75	3.30	1:500	0.21	210.10	208.77	1.33	210.10	208.99 / 208.68	1.11
156	D154-RWH - 40	10	-	LINE D152-D154+D153-D154=15300+6300 = 21600	21600	5.337	600	0.75	7.50	1:700	0.01	210.10	208.68	1.42	210.10	208.67	1.43

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RAIN WATER HARVESTING-41																	
157	D155-D157	45	45X30 = 1350	-	1350	0.334	400	0.75	3.30	1:500	0.09	210.10	209.20	0.90	210.10	209.11	0.99
158	D156-D157	105	105X60 = 6300	-	6300	1.557	400	0.75	3.30	1:500	0.21	210.10	209.20	0.90	210.10	208.99 / 208.11	1.11
159	D157-D159	45	45X30 = 1350	LINE D155-D157+D156-D157=1350+6300 = 7650	9000	2.224	400	0.75	3.30	1:500	0.09	210.10	208.99	1.11	210.10	208.9	1.20
160	D158-D159	105	105X60 = 6300	-	6300	1.557	400	0.75	3.30	1:500	0.21	210.10	208.99	1.11	210.10	208.99	1.11
161	D159-D161	35	35X20 = 700	LINE D157-D159+D158-D159=9000+6300 = 15300	16000	3.954	500	0.75	5.20	1:600	0.06	210.10	208.99	1.11	210.10	208.93 / 208.90	1.20
162	D160-D161	50	60X50 = 3000	-	3000	0.741	400	0.75	3.30	1:500	0.10	210.10	208.99	1.11	210.10	209.10 / 208.90	1.00
163	D161-RWH - 41	10	-	LINE D159-D161+D160-D161=16000+3000 = 19000	19000	4.895	500	0.75	5.20	1:600	0.02	210.10	208.90	1.20	210.10	208.88	1.22
RAIN WATER HARVESTING-42																	
164	D162-D162B	65	65X20 = 1300	-	1300	0.321	400	0.75	3.30	1:500	0.13	210.10	209.20	0.90	210.10	209.07	1.03
165	D162A-D162B	50	60X50 = 3000	-	3000	0.741	400	0.75	3.30	1:500	0.10	210.10	209.20	0.90	210.10	209.1 / 209.07	1.00
166	D162B-D163	50	50X20 = 1000	LINE D162-D162B+D162A-D162B=1300+3000 = 4300	5300	1.310	400	0.75	3.30	1:500	0.10	210.10	209.07	1.03	210.10	208.97	1.13
167	D163A-D163	105	105X60 = 6300	-	6300	1.557	400	0.75	3.30	1:500	0.21	210.10	208.76	1.34	210.10	208.99 / 208.97	1.11
168	D163-D164B	40	40X20 = 800	LINE D162B-D163+D163A-D163=5300+6300 = 11600	12400	3.064	400	0.75	3.30	1:500	0.08	210.10	208.97	1.13	210.10	208.89	1.21
169	D164A-D164B	105	105X60 = 6300	-	6300	1.557	400	0.75	3.30	1:500	0.21	210.10	209.20	0.90	210.10	209.18 / 208.89	0.92

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Storm Water Drain

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170	D164B -D164D	50	50X20 = 1000	LINE D163-D164B+D164A-D164B=12400+6300 = 18700	19700	4.868	500	0.75	5.20	1:600	0.08	210.10	208.89	1.21	210.10	208.81	1.29
171	D164C -D164D	105	105X60 = 6300	-	6300	1.557	400	0.75	3.30	1:500	0.21	210.10	208.89	1.21	210.10	209.00 / 208.81	1.10
172	D164D -D165	45	45X10 = 450	LINE D164B-D164D+D164C-D164D=19700+6300 = 26000	26450	6.536	600	0.75	7.50	1:700	0.06	210.10	208.89	1.21	210.10	208.75	1.35
173	D165 -RWH - 42	10	-	LINE D164D-D165 = 26450	26450	6.536	600	0.75	7.50	1:700	0.01	210.10	208.75	1.35	210.10	208.74	1.36
RAIN WATER HARVESTING-43																	
174	D166-D167	235	235X30 = 7050	-	7050	1.742	400	0.75	3.30	1:500	0.47	210.10	209.20	0.90	210.10	208.73	1.37
175	D167-RWH-43	20	30X20 = 600	LINE D166-D167 = 7050	7650	1.890	400	0.75	3.30	1:500	0.04	210.10	208.73	1.37	210.10	208.69	1.41
RAIN WATER HARVESTING-44																	
176	D168-D170	140	140X30 = 4200	-	4200	1.038	400	0.75	3.30	1:500	0.28	210.10	209.20	0.90	210.10	208.92	1.18
177	D169-D170	135	135X30 =4050	-	4050	1.001	400	0.75	3.30	1:500	0.27	210.10	209.20	0.90	210.10	208.93 / 208.92	1.17
178	D170-RWH - 44	15	30X15 = 450	LINE D168-D170+D169-D170=4200+4050 = 8250	8700	2.150	400	0.75	3.30	1:500	0.03	210.10	208.92	1.18	210.10	208.89	1.21
RAIN WATER HARVESTING-45																	
179	D171-D172	80	70X40 /2 = 1400	-	1400	0.346	400	0.75	3.30	1:500	0.16	210.10	209.20	0.90	210.10	209.04	1.06
180	D172-D173	80	70X40 /2 = 1400	LINE D171-D172 = 1400	2800	0.692	400	0.75	3.30	1:500	0.16	210.10	209.04	1.06	210.10	208.88	1.22
181	D173-D177	135	135X40 =5400	LINE D172-D173 = 2800	8200	2.026	400	0.75	3.30	1:500	0.27	210.10	208.88	1.22	210.10	208.61	1.49
182	D174-D175	80	80X50 = 4000	-	4000	0.988	400	0.75	3.30	1:500	0.16	210.10	209.20	0.90	210.10	209.04	1.06
183	D175-D176	25	50X25 = 1250	LINE D174-D175=4000	5250	1.297	400	0.75	3.30	1:500	0.05	210.10	209.04	1.06	210.10	208.99	1.11

RESIDENTIAL PLOTTED COLONY "CENTRAL PARK FLOWER VALLEY" ON AREA MEASURING 196.4423 ACRES IN THE REVENUE ESTATE OF VILLAGE DHUNELA & BERKA, SECTOR 29,30,32 & 33, SOHNA, DISTT.- GURGAON (LICENSE NO. 54 OF 2014, 28 OF 2016, 07 OF 2020 & 104 OF 2021)
Hydraulic Design Chart

Storm Water Drain

Calculations are based on Manning Formula $V = (1.486/n) \times m^{2/3} \times S^{1/2}$ in F.P.S System

184	D176-D177	50	50X20 = 1000	LINE D175- D176=5250	6250	1.544	400	0.75	3.30	1:500	0.10	210.10	208.99	1.11	210.10	208.89 / 208.61	1.21
185	D177-RWH - 45	10	-	LINE D173- D177+D176- D177=8200+6250 = 14450	14450	3.571	500	0.75	5.20	1:600	0.02	210.10	208.61	1.49	210.10	208.59	1.51
RAIN WATER HARVESTING-46																	
186	D177-D178	195	195X30 = 5850	-	5850	1.446	400	0.75	3.30	1:500	0.39	210.10	209.20	0.90	210.10	208.81	1.29
187	D178-RWH46	10	30X20 = 600	LINE D177- D178=5850	6450	1.594	400	0.75	3.30	1:500	0.02	210.10	208.81	1.29	210.10	208.79	1.31
RAIN WATER HARVESTING-47																	

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Hydraulic Design Chart

Storm Water Drain

Calculations are based on Manning Formula $V = (1.486/n) \times m^{2/3} \times s^{1/2}$ in F.P.S System

	188	D179-D181	80	80X30 = 2400	-	2400	0.593	400	0.75	3.30	1:500	0.16	210.10	209.20	0.90	210.10	209.04	1.06
	189	D180-D181	145	145X30 = 4350	-	4350	1.075	400	0.75	3.30	1:500	0.29	210.10	209.20	0.90	210.10	208.91 / 209.04	1.19
	190	D181-D183	15	-	LINE D179-D181+D180-D181=2400+4350 = 6750	6750	1.668	400	0.75	3.30	1:500	0.03	210.10	208.91	1.19	210.10	208.88	1.22
	191	D182-D183	80	50X35+30X15 = 2200	-	2200	0.544	400	0.75	3.30	1:500	0.16	210.10	209.20	0.90	210.10	209.04 / 208.88	1.06
	192	D183-D185	20	-	LINE D181-D183+D182-D183=6750+2200 = 8950	8950	2.212	400	0.75	3.30	1:500	0.04	210.10	208.88	1.22	210.10	208.84	1.26
	193	D184-D185	40	40X30 = 1200	-	1200	0.297	400	0.75	3.30	1:500	0.08	210.10	209.20	0.90	210.10	209.12 / 208.84	0.98
	194	D185-RWH - 47	10	-	LINE D183-D185+D184-D185=8950+1200 = 10150	10150	2.508	400	0.75	3.30	1:500	0.02	210.10	208.84	1.26	210.10	208.82	1.28
RAIN WATER HARVESTING-48																		
	195	D186-D187	245	245X30 = 7350	-	7350	1.816	400	0.75	3.30	1:500	0.49	210.10	209.20	0.90	210.10	208.71	1.39
	196	D187-RWH - 48	20	30X20 = 600	LINE D186-D187=7350	7950	1.964	400	0.75	3.30	1:500	0.04	210.10	208.71	1.39	210.10	208.67	1.43
RAIN WATER HARVESTING-49																		
	197	D188-D190	105	70X40 +35X30 = 3850	-	3850	0.951	400	0.75	3.30	1:500	0.21	210.10	209.20	0.9	210.10	208.99	1.11
	198	D189-D190	160	50X40+50X25 = 3250	-	3250	0.803	400	0.75	3.30	1:500	0.32	210.10	209.20	0.9	210.10	208.88 / 208.99	1.22
	199	D190-RWH - 49	10	30X20 = 600	LINE D188-D190+D189-D190=3850+3250 = 7100	7700	1.903	400	0.75	3.30	1:500	0.02	210.10	208.88	1.22	210.10	208.86	1.24
RAIN WATER HARVESTING-50																		

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Hydraulic Design Chart

Storm Water Drain

Calculations are based on Manning Formula $V = (1.486/n) \times m^{2/3} \times s^{1/2}$ in F.P.S System

200	D191-D193	30	30x20=600	-	600	0.127	400	0.75	3.30	1:500	0.06	210.10	209.20	0.9	210.10	209.16	0.96
201	D192-D193	80	80x60=4800	-	4800	1.020	400	0.75	3.30	1:500	0.16	210.10	209.20	0.9	210.10	209.04 / 209.16	1.06
202	D193-D195	40	40x35=1400	LINE D191-D193=600+4800 = 5400	6800	1.440	400	0.75	3.30	1:500	0.08	210.10	209.04	1.06	210.10	208.96	1.14
203	D194-D195	75	75x60=4500	-	4500	0.950	400	0.75	3.30	1:500	0.15	210.10	209.20	0.9	210.10	219.05 / 208.96	1.05
204	D195-RWH50	25	30x25= 750	LINE D193-D195=6800+4500 = 11300	12050	2.560	400	0.75	3.30	1:500	0.05	210.10	208.66	1.44	210.10	208.61	1.19

RAIN WATER HARVESTING-51

205	D196-D197	100	100x30 = 3000	-	3000	0.638	400	0.75	3.30	1:500	0.24	210.10	209.20	0.9	210.10	208.16	1.10
206	D197-D198	90	90x30= 2700	LINE D196-D197=3000	5700	0.574	400	0.75	3.30	1:500	0.18	210.10	209.00	1.1	210.10	208.82	1.28
207	D198-RWH51	10	-	LINE D197-D198 = 5700	5700	1.210	400	0.75	3.30	1:500	0.04	210.10	208.82	1.28	210.10	208.78	1.32

RAIN WATER HARVESTING-52

208	D199-D200	225	9000	-	9000	1.910	400	0.75	3.30	1:500	0.45	210.10	209.20	0.9	210.10	208.75	1.35
209	D200-RWH52	10	30x10=300	LINE D154-D155=9000	9300	1.970	400	0.75	3.30	1:500	0.02	210.10	208.75	1.35	210.10	208.73	1.37

RAIN WATER HARVESTING-53

210	D201-D202	20	80x20=1600	-	1600	0.340	400	0.75	3.30	1:500	0.45	210.10	209.20	0.9	210.10	209.16	0.94
211	D203-D204	50	50x30= 1500	-	1500	0.320	400	0.75	3.30	1:500	0.1	210.10	209.00	0.9	210.10	209.10 / 209.16	1
212	D204-D205	50	50x30= 1500	-	1500	0.320	400	0.75	3.30	1:500	0.1	210.10	209.20	0.9	210.10	209.1	1
213	D205-RWH53	20	-	LINE D201-D202+D203-D204=3100	3100	0.660	400	0.75	3.30	1:500	0.04	210.10	209.10	1	210.10	209.06	1.04

RESIDENTIAL PLOTTED COLONY "CENTRAL PARK FLOWER VALLEY" ON AREA MEASURING 196.4423 ACRES IN THE REVENUE ESTATE OF VILLAGE DHUNELA & BERKA, SECTOR 29,30,32 & 33, SOHNA, DISTT:- GURGAON (LICENSE NO. 54 OF 2014, 28 OF 2016, 07 OF 2020 & 104 OF 2021)

SUB WORK NO. - IV					Road Work	
SI No	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs)
1	Provision for leveling - earth filling / cutting as per site conditions. (In Acres)					
	Area = 196.4423 Acre	196.4423	@	150000	Rs.	294.66
2	Provision for Granular sub base 200mm, 250 mm thick stone aggregate, 50 mm thick D.B.M., 25 mm thick BC	117920 118870	@	1200	Rs.	1415.04 1426.44
3	Provision of Paved path of C.C. 1:2:4 $2 \times 16750 \times 1.50 = 50250 \text{ sqm}$	50250 33470	@	750 600	Rs.	376.88 200.82
4	Provision for Kerbs & channels of CC 1:2:4 both sides on road $2 \times 16750 = 33500 \text{ M}$	33500 33470	@	600	Rs.	201.00 200.82
5	Provision for making Culvert on existing nallah (LS)		@	5000000	Rs.	50.00
6	Provision of guide maps at selected place (L.S.)		@	200000	Rs.	2.00
7	Provision for Traffic Lights arrangement - L.S.		@	500000	Rs.	5.00
8	Provision for Demarcating Durgies - L.S.		@	500000	Rs.	5.00
9	Provision for Plot indicator - L.S.		@	1000000	Rs.	10.00
10	Provision for Parking Arrangement - L.S. $\text{C.C. Pavement in Comm. Area}$ $\text{Use 50\% of area} = 4.11 \times 4047/2 = 8320 \text{ sqm}$		@	2500000	Rs.	62.40 25.00
11	Provision of carriage of material and unforeseen items L.S.		@	1000000	Rs.	10.00
TOTAL					Rs.	2229.74
Add 3% contingencies					Rs.	66.89
TOTAL					Rs.	2296.64
Add 49% Department charges, price escalation, other for unforeseen charges.					Rs.	1125.35
TOTAL					Rs.	3421.99

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RESIDENTIAL PLOTTED COLONY "CENTRAL PARK FLOWER VALLEY" ON AREA MEASURING 196.4423 ACRES IN THE REVENUE ESTATE OF VILLAGE DHUNELA & BERKA, SECTOR 29,30,32 & 33, SOHNA, DISTT.-GURGAON (LICENSE NO. 54 OF 2014, 28 OF 2016, 07 OF 2020 & 104 OF 2021)

Road Work

S. No.	Name of Road	Length of Road (in Mtrs.)	Road Width	Metalled Width (Mtrs.)	Area in Sqm.
	A	B	C	D	B x D
1	Road No.1	143	12	6	858.00
2	Road No.2	45	12	6	270.00
3	Road No.3	123	12	6	738.00
4	Road No.4	87	12	6	522.00
5	Road No.5	87	12	6	522.00
6	Road No.6	61	12	6	366.00
7	Road No.7	268	12	6	1608.00
8	Road No.8	112	12	6	672.00
9	Road No.9	112	12	6	672.00
10	Road No.10	112	12	6	672.00
11	Road No.11	112	12	6	672.00
12	Road No.12	112	12	6	672.00
13	Road No.13	311	12	6	1866.00
14	Road No.14	313	12	6	1878.00
15	Road No.15	215	12	6	1290.00
16	Road No.16	90	12	6	540.00
17	Road No.17	60	12	6	360.00
18	Road No.18	60	12	6	360.00
19	Road No.19	60	12	6	360.00
20	Road No.20	60	12	6	360.00
21	Road No.21	90	12	6	540.00
22	Road No.22	1040	24	15.2x7	15600.00
23	Road No.23	86	12	6	516.00
24	Road No.24	199 180	12	6	1080 1194.00
25	Road No.25	199	12	6	1194.00
26	Road No.26	71	12	6	426.00
27	Road No.27	71	12	6	426.00
28	Road No.28	96	12	6	576.00
29	Road No.29	62	12	6	372.00
30	Road No.30	72	12	6	432.00
31	Road No.31	145	12	6	870.00
32	Road No.32	121	12	6	726.00
33	Road No.33	36	12	6	216.00
34	Road No.34	170	12	6	1020.00
35	Road No.35	84	12	6	504.00

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RESIDENTIAL PLOTTED COLONY "CENTRAL PARK FLOWER VALLEY" ON AREA MEASURING 196.4423 ACRES IN THE REVENUE ESTATE OF VILLAGE DHUNELA & BERKA, SECTOR 29,30,32 & 33, SOHNA, DISTT.-GURGAON (LICENSE NO. 54 OF 2014, 28 OF 2016, 07 OF 2020 & 104 OF 2021)

36	Road No.36	85	12	6	510.00
37	Road No.37	61	12	6	366.00
38	Road No.38	95	12	6	570.00
39	Road No.39	36	12	6	216.00
40	Road No.40	45	12	6	270.00
41	Road No.41	160	12	6	960.00
42	Road No.42	55	12	6	330.00
43	Road No.43	224	12	6	1344.00
44	Road No.44	317-397	12	6	23821902.00
45	Road No.45	85	12	6	510.00
46	Road No.46	72	12	6	432.00
47	Road No.47	72	12	6	432.00
48	Road No.48	48	12	6	288.00
49	Road No.49	62	12	6	372.00
50	Road No.50	78	12	6	468.00
51	Road No.51	172	12	6	1032.00
52	Road No.52	100	12	6	600.00
53	Road No.53	45	12	6	270.00
54	Road No.54	76	12	6	456.00
55	Road No.55	70	12	6	420.00
56	Road No.56	62	12	6	372.00
57	Road No.57	42	12	6	252.00
58	Road No.58	285	12	6	1710.00
59	Road No.59	83	12	6	498.00
60	Road No.60	161	12	6	966.00
61	Road No.61	130	12	6	780.00
62	Road No.62	164	12	6	984.00
63	Road No.63	228	18	10	2280.00
64	Road No.64	50	12	6	300.00
65	Road No.65	223	12	6	1338.00
66	Road No.66	425	24	15-2x7	6375.00 5950
67	Road No.67	230	12	6	1380.00
68	Road No.68	80	12	6	480.00
69	Road No.69	95	12	6	570.00
70	Road No.70	235	12	6	1410.00
71	Road No.71	90	12	6	540.00
72	Road No.72	440	12	6	2640.00
73	Road No.73	60	12	6	360.00
74	Road No.74	60	12	6	360.00
75	Road No.75	145	12	6	870.00
76	Road No.76	220	12	6	1320.00
77	Road No.77	100	12	6	600.00
78	Road No.78 +79	60 +420	12	6	2880360.00
79	Additional Roads for 47.75 acre	3950	12	6	23700.00
80	Additional Roads for 47.75 acre	400	24	15-2x7	56006000.00
Total		15061			108063.00
Add 10 % for curves		15227			10806.30
Total					1,18,869.30
Total					1,18,869.30
Say					1,18,870.00
Total Length of road		45061 15227			
Add 10% curves		1506.1 1523			
Total Length		16567.1 16750			
Say		16735	Mtrs.		

Pave Path on both side of Road =

33470 Sqmts.

Area of 24m wide Roads = $1040 + 425 + 400 = 1865 \times 2 \times 7 = 26110 \text{ sqm}$
 Area of 18m wide Roads = $228 \times 10 = 2280 \text{ sqm}$
 Area of 12m wide Roads = $13134 \times 6 = 78804 \text{ sqm}$
 Add 10% for curves
 Say 117920 sqm

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Sub Work No-V					Street Lighting	
SI No	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs)
1	Providing street lighting on roads as per standard specifications on HVPN with CFI					
	Area = 196.4423 Acre	196.4423	@	250000	Rs.	491.11
	TOTAL				Rs.	491.11
	Add 3% contingencies				Rs.	14.73
	TOTAL				Rs.	505.84
	Add 49% Department charges, price escalation, other for unforeseen charges.				Rs.	247.86
	TOTAL				Rs.	753.70

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Sub Work No-V1					Plantation & Road side trees	
SI No	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs)
1	Development of Lawn Area :-					
	a) Trenching the ordinary soil upto depth of 60 cm. including removal and packing of serviceable material and disposing at a lead of 50 M. and making up the trenched area to proper level by filling with earth mixed with manure before and after flooding trench with water including cost of imported earth and manure					
	b) Rough dressing of trenched area.					
	c) Grassing with "doob grass" including watering and maintenance of lawns free from weeds and fit for moving in rows 7.50 cm. in either direction including for hedges and grill and barred wire fencing around park and green belts (As per HUDA norms)					
	15.366	15.366		150000/-		23.05
	Area = 196.4423 Acre	196.4423	@	100000	Rs.	196.44
2	Providing & Planting of trees with tree guards on roads at 12 m intervals					
	Total Road Length (M.)	16735				
	Trees @ 12 M. c/c	1395				
	Say (2 x 1395) = 2790	2790				
	Cost of One Tree :-					
	Excavation (Rs.) 30/-					
	Manure (Rs.) 40/-					
	Tree Plants (Rs.) 80/-					
	Tree Guards (Rs.) 600/-					
	Total Cost (each)	2792		1300/-		36.30
	Cost of Total trees	2790	@	750	Rs.	20.93
	TOTAL				Rs.	217.37
	Add 3% contingencies				Rs.	6.52
	TOTAL				Rs.	223.89
	Add 49% Department charges, price escalation, other for unforeseen charges.				Rs.	109.71
	TOTAL				Rs.	333.59

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SUB WORK NO. VII:				MTC. CHARGES AND RESURFACING OF ROADS.		
SI No	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs)
1	Provision for maintenance charges for water supply, sewerage, storm water, drainage, roads, street light, Hort., etc. complete including operation & establishment charges as per HUDA norms after completion.					
	Area = 196.4423 Acre	196.442	@	750000	Rs.	1473.32
2	Provision for resurfacing of roads after first five years of maintenance i.e. 20mm thick premix carpet with seal coat with mechanical paver. (Sqm)	117920 1,18,870.00	@	600	Rs.	707.52 713.22
3	Provision for resurfacing of roads after 10 years of Mtc. i.e. 20mm thick premix carpet with seal coat with mechanical paver. (Sqm)	117920 1,18,870	@	750	Rs.	884.40 891.53
	TOTAL				Rs.	3078.06 3065.24
	Add 3% contingencies				Rs.	92.34 91.96
	TOTAL				Rs.	3170.40 3157.20
	Add 49% Department charges, price escalation, other for unforeseen charges.				Rs.	1553.50 1547.03
	TOTAL				Rs.	4723.90 4704.23