

**PROPOSED AFFORDABLE PLOTTED
COLONY UNDER DEEN DAYAL JAN AWAS
YOJNA-2016 OVER AN AREA MEASURING
10.4125 ACRES**

AT

**VILLAGE SOHNA, SECTOR-07, BALUDA
RD, SOHNA RURAL, HARYANA**

**SERVICE PLAN ESTIMATE
FOR
PUBLIC HEALTH ENGINEERING SERVICES WORK**

Client

M/S N.B. BUILDCON PVT. LTD.

Architect

RUBY JAIN

MEP Services Consultant

PARADISE CONSULTANTS

Plot No. 96, Pocket – 1, Jasola Vihar, New Delhi - 110025

PROJECT REPORT / ESTIMATES FOR PROVIDING INTERNAL SERVICES e.g. WATER SUPPLY, FIRE, SEWERAGE & STORM WATER DRAINAGE ETC. IN RESPECT OF PROPOSED AFFORDABLE PLOTTED COLONY UNDER DEEN DAYAL JAN AWAS YOJNA-2016 OVER AN AREA MEASURING 10.4125 ACRES IN VILLAGE SOHNA, SECTOR- 07, BALUDA RD, SOHNA RURAL, HARYANA

Sohna is a town and a municipal committee in the Gurgaon district of Haryana, India. It is on the highway from Gurgaon to Alwar near a vertical rock. Sohna tehsil is part of Ahirwal Region. It has an average elevation of 212 m (696 ft). Gurgaon district is divided into 4 sub-divisions each headed by a Sub-Divisional Magistrate (SDM): Gurgaon, Sohna, Pataudi and Badshahpur. A master plan for the town was introduced in 2012. Divided into 38 sectors, the plan covers residential, commercial, institutional, industrial, transport, communications, utilities, public and semi-public use, open spaces and agricultural and conservation zones.

PROPOSED AFFORDABLE PLOTTED COLONY UNDER DEEN DAYAL JAN AWAS YOJNA-2016 OVER AN AREA MEASURING 10.4125 ACRES is a residential proposed between IN VILLAGE SOHNA, SECTOR- 07, BALUDA RD, SOHNA RURAL, HARYANA for development by M/S N.B. BUILDCON PVT. LTD.

Water Supply

1

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

i.) Source

The source of water supply in this area is tubewells as the underground water is sweet and fit for human consumption, moreover, the water is available at reasonable depth. The average yield of tubewell with 60'-80' strainer will be about 26000 lph per hour. The recharging of underground water table in this belt is stated to be good. However still we shall resort to rain water harvesting system to keep up the recharging system. The number of tubewells required for the above area has been worked out to 02 Nos and the tubewells will be bored in tune with growth of demand to avoid absence of the tubewells.

ii.) Design

The scheme has been designed for population of 3168 persons in 10.4125 Acre. The rate of water supply per head per day has been taken assumed as 172.5 litres per head per day as per HUDA norms. In addition to above necessary provision of water for Community building, Commercial building, parks etc. have been taken into account for calculating the maximum number of tubewell water required.

iii.) Pumping Equipments

It has been proposed to install pumping set as described with standby of equal capacity. The provision for standby generating set has been provided in case of any electricity failure. Generator will be provided separately or added to the capacity of main generator.

iv.) Under Ground Storage

Under-ground storage tank provision has been made, which caters for the present and a lot of future requirement as well as fire fighting requirement. The water for domestic water compartment shall over flow from the fire compartment so that the water in the fire compartment also remains fresh.

v.) Boosting Station

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

vi.) Distribution System

The distribution systems for this development are has been designed to supply @ ~~172.5~~ ^{155.25} Litres per head per day @ 3 times the average rate of flow on 'Hazen Willima' formula with C-100. Necessary provision for laying D.I. pipes only conforming to relevant IS standards along with valves and specials has been made in this estimate. The minimum terminal head at any point in this system will be about 21.00 metres so that it can serve the S+4 stories construction envisaged in the plan. Minimum pipe diameters for distribution are kept as 100 dia.

vii.) Rising Mains

Rising mains from HUDA water main on sector road to water works have also been designed and provision for D.I. pipe line (dia as / design) has been made in this estimate.

2 Sewerage

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

The sewer lines have been designed for 3 times average DWR in relation to the water supply demand assuming that 80% fo the domestic water supply shall find its way into the proposed sewer SW pipe sewers have been proposed designed to run half full. The sewers have been designed on 0.75 mtr. per second velocity ie. Self cleansing velocity. Necessary provisions for laying SW pipes manholes etc. has been made in this estimate.

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

3 Storm Water Drainage

The storm water drain is being designed to carry ~~1/4"~~ ^{1/4" (6-25mm)} rain fall per hour. Also suitable provisions are contemplated in our scheme to ensure better recharging of under ground water table in the area. RCC NP₃ pipe drain with minimum 400 mm dia is proposed in this area.

4 Roads

Cost of road has been taken in the estimate.

5 Street Lighting

Provision for street lighting on surrounding area has been made.

5 Horticulture

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

PROPOSED AFFORDABLE PLOTTED COLONY UNDER DDJAY 10.4125 ACRES IN VILLAGE SOHNA, SECTOR-07, HARYANA

7 Specifications:

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

8 Rates

Estimates for providing services in this site has been prepared on the recent HUDA rates.

9 Cost

The total cost of development in this Project including various PH & B & R services works out to ~~Rs. 899.69~~ ^{1094.30} lacs which includes 3% contingency and PE charges and 49% departmental charges also.

The cost per gross acre for this phase works out to ~~Rs. 86.41~~ ¹⁰⁵⁰⁹ Lacs/acre which covers the provision of services like water supply, sewerage, storm water drainage, roads, street lighting and plantations including plantations maintenance thereof as well as future expansion whatsoever indicated.

M/S N.B. BUILDCON PVT. LTD.

Authorised Signatory

**PROPOSED AFFORDABLE PLOTTED COLONY UNDER DEEN DAYAL JAN AWAS YOJNA-2016
OVER AN AREA MEASURING 10.4125 ACRES IN VILLAGE SOHNA, SECTOR-07, BALUDA RD.,**

SOHNA RURAL, HARYANA

DESIGN CALCULATION FOR UNDER GROUND WATER TANK (UGT.)

Total No. of Plots

176 Nos. ✓

Population per plot

18 persons ✓

1 Therefore population

3168 persons ✓

SAY

3168 persons ✓

Water requirement for plots (General)

155.25
155.40 Lpd.

Water requirement for plots (General)

Domestic @ 65 % Flushing @ 35 %

@ 105.110 50.00 Lpd.

319.691

332.640

158.400 Lpd. 172.141

or

319.69 KL

158.40 Kld. 172.14 Kld.

2 Visitors @ 10%

317.00 persons

Water requirement

@ 15.00 Lpd. ✓

Water requirement

@ 5.00 Lpd.

② 1673.6274
Commercial (1685.5130 Sq.m) ✓

1673.6274

or

1685.513

Total Population

@ 558.562

Staff @ 10%

56

Visitors @ 90%

506

Per Person Water Requirement

Domestic 45.00

Flushing 20.00 Lpd.

Staff

15.00

10.00 Lpd.

Visitors

2520

1120 Lpd.

Daily Water Requirement

2520.27

2528.27

1120 Lpd.

Staff

7530.81

2528.27

5056.54 Lpd.

Visitors

7530

391K

6.18 Kld.

③ 4 Community Facility 1.0412 Acre @ 25KL Per Acre
Domestic @ 65% Flushing @ 35%
16920 Lpd. 9.11 KL
16.92 KL

Population

@ 0

Staff @ 10%

0

Visitors @ 90%

0

Per Person Water Requirement

Domestic 45.00

Flushing 20.00 Lpd.

Staff

15.00

10.00 Lpd.

Visitors

45.00

0.00 Lpd.

Daily Water Requirement

0.00

0.00

0.00 Lpd.

Staff

0.00

0.00

0.00 Lpd.

Visitors

0.00

0.00

0.00 Kld.

④ 5	Filter Backwash (Assumed Lumsum)	@	10.00	0.00 Kld.
6	Total Water Requirement (1+2+3+4+5)	Total	350.52 348.16	187.39 167.75 Kld.
7	Area under Parks (in Acre)	@	0.9091 0.7809	22728 19522.5 l pd.
⑥ 8	Area under Roads	@	0.00	19.52 Kld. 22.73
	Daily water requirement			7500 10000 Ltr./Acre
		Total	0.00	0 Lpd.
		Total	0.00	7.50 0.00 Kld.
		Total	0.00	30.23 49.52 Kld.
I	Total daily requirement		350.52	167.75 Kld. 187.39 Kld.
	a) For Domestic+Flushing use (1+2+3+4+5)			80.23
	b) Under Road+ Parks (7+8)		0.00	49.52 Kld.
	Total Daily Requirement		350.52	187.39 Kld. 217.62
		SAY	355.00 350.00	220.00 190.00 Kld.
II	Tubewell			
	Assuming working hours of tubewells			8 Hours
	Assuming discharge/hour of each tubewell			26 KL/Hours
	Total domestic demand		350.52	348.16 Kld.
	No. of tubewells required		1.69 1.67	2.00 Nos.
III	Pumping machinery for tubewell			
	Gross working load			45.00 Mtr.
	Average fall in SL			3.05 Mtr.
	Depression head			6.10 Mtr.
	Friction loss in main			2.50 Mtr.
				56.65 Mtr.
				60.00 Mtr.
	BHP = $26000 \times 60 \times 1 / 60 / 60 / 75 / 0.6$			9.63 HP
	With 60% efficiency			10.00 HP
IV	Underground Tank			
	Daily requirement for domestic use			348.16 Kld.
	Capacity of under ground tank			350.52 Kld.
	24 hours storage			210.31 Kld.
			220	350.00 Kld.
	TOTAL		220	350.00 KLD

It is proposed to provide under ground tank of capacity 350 KL 220 KL for domestic water demand

Fire demand 100 $\sqrt{3168/1000} \times 1/3 = 59.33$ KL Say 70 KL
 FWS tank 60% of total demand = $217.62 \times 60\% = 130.57$ KL
 PARADISE CONSULTANTS

PROPOSED AFFORDABLE PLOTTED COLONY UNDER DDJAY 10.4125 ACRES IN VILLAGE SOHNA, SECTOR-07, HARYANA

Tanks will have Four compartments, two for raw and the other two for domestic use. The water first enters the raw compartment, then over flows to the domestic use after filtration.

It is proposed to provide the under ground tank of following capacity :

- Capacity of Raw Water Tank-01
- Capacity of Raw Water Tank-02
- Capacity of Domestic Water Tank-01
- Capacity of Domestic Water Tank-02

110.00 Kld. /
90.00 Kld. /
90.00 Kld. /
90.00 Kld. /
110.00 Kld. /
90.00 Kld. /
70 KL, UGT

Fire tank

V BOOSTING MACHINERY

UG. Tank

Daily requirement for domestic use

Assuming 4 hours pumping

Discharge /hour

Head of pump

i) Suction lifts

ii) Friction loss in M<main & specials

iii) Clear head

iv) Residual head

BHP of motor

3 pumps (with one standby) / 4 / 3 =
350.52 / 81 - 348.16
43.82
27.01 KL/Hours
730.25 LPM
0.0 Mtr. 8.33
7.0 Mtr. 5.37 HP
18.0 Mtr. 6.00 HP
5.0 Mtr. 10.00 HP
30.0 Mtr. 8.33
8.33 HP
10.00 HP

$$\frac{750 \times 30}{60 \times 75 \times 0.60} = 8.33 \text{ HP}$$

UG. Tank

Daily requirement for flushing use

Assuming 4 hours pumping

Discharge /hour

Head of pump

i) Suction lifts

ii) Friction loss in M<main & specials

iii) Clear head

iv) Residual head

BHP of motor

2 pumps (with one standby) / 4 / 2 =
217.62 / 81 - 187.27
30.35
23.44 KL/Hours
453.38 LPM
0.0 Mtr. 7.00
7.0 Mtr. 5.37
18.0 Mtr. 5.0
5.0 Mtr. 30.0
30.0 Mtr. 5.56
4.05 HP
5.00 HP
7.50
10
18 HP
7.50 HP
20 HP
25 HP
33 HP
57.50
64.34
81.60 KVA
90.00 KVA
100.00

$$\frac{500 \times 30}{60 \times 75 \times 0.60} = 5.555$$

Gen Set

Pumps for UG. Tank (Domestic water supply)

Pumps for UG. Tank (Flushing water supply)

Tubewell

Lighting

Nos. 3 10
2 7.50
2 10.0
57.50
64.34
81.60 KVA
90.00 KVA
100.00

or

Say

VI Sewage Treatment Plant Capacity (STP.)

Gross Domestic+Flushing water requirement / day

Sewage flow 80% of total load

Capacity of STP *Add 5% marginal factor*

~~531.91 KLD~~ ~~545.91 KLD~~

~~430.33 KLD~~ ~~412.73 KLD~~

21.52 KLD

~~451.85 KLD~~ ~~434.00 KLD~~

Proposed STP Capacity (KLD)

~~420.00 KLD~~

~~420.00 KLD~~

Say

460

STP

Estimate for Providing in Internal Development works for

M/S N.B. BUILDCON PVT. LTD.

Description	Amount (Lacs.)
Sub Work - I Water Supply System	236.20
Sub Work - II Sewerage System	103.63
Sub Work - III Storm Water Drainage System	63.99
Sub Work - IV Roads & Footpath	183.84
Sub Work - V Street Lighting	15.98
Sub Work - VI - Horticulture	21.74
Sub Work - VII - Maintenance of Services for 10 years including resurfacing of roads after 1st 5 years & II phase i.e. 10 years of maintenance (as per HUDA norms)	274.33

1094.30
Per acre = 106763/104125 = Rs 105.09 Lakh
Total 899.69
899.69 = 1094.30 Lakh

(RUPEES NINE CRORES NINETY LACS TWENTY FIVE THOUSAND ONLY)

COST PER ACRE

M/S N.B. BUILDCON PVT. LTD.

Checked subject to Comments
In forwarding letter No. 39/206
Dt. 24/02/2023 and notes
attached with the estimate

Executive Engineer
HSVP Division No. VI
Gurugram

Authorized Signatory

Superintending Engineer (HQ)
for Chief Engineer-I
HSVP, Panchkula

Superintending Engineer,
HSVP Circle, Gurugram

24.2.2023
SPE (w-2)
24/2/23

PROPOSED AFFORDABLE PLOTTED COLONY UNDER DDJAY 10.4125 ACRES IN VILLAGE SOHNA, SECTOR-07, HARYANA

FINAL ABSTRACT OF REVISED COST	
Description	Amount (Lacs.)
Sub Head - (I) Head Works	61.30 72.15
Sub Head - (II) Pumping Machinery	36.30 39.00
Sub Head - (III) Distribution System	53.27 67.78
Sub Head - (IV) Irrigation Scheme	3.03 3.46
Total	182.39
Add 3% Contingencies	4.62 5.47
Total	187.86
Add 49% Departmental Charges	77.68 92.05
Grand Total	279.91
(CO to final abstract of cost)	Say Rs 279.91 Lakhs

PROPOSED AFFORDABLE PLOTTED COLONY UNDER DDJAY 10.4125 ACRES IN VILLAGE SOHNA, SECTOR-07, HARYANA

Sub Work I				Water Supply Head Works	
Sub Head No. I					
S. No.	Description	Unit	Qty	Rate (Rs.)	Amount Rs. (lacs)
1	Boring and installing 510 mm i/d tubewells with reverse/direct rotary rig complete with pipe strainer to a depth of about 80 m. complete.	Nos.	2	15,00,000	30.00
2	Constructing pump chambers as per standard design of PWD PH/HUDA of size 1.50x1.50 m.	Nos.	2	1,50,000	3.00
3	Construction of boosting chambers of suitable size along with under ground tank & pumping machinery and generating set etc. complete in all respects.				
Details of boosting station					
i)	construction of boosting chambers	Nos.	1	750,000.00	75.00
ii)	construction of UG tank (Dom. & flushing) + free	KL	430	5,500/-	2,365
4	Provision for carriage of material and other unforeseen items.	LS			2.00
5	Provision for facilities staff for Maintenance	LS			3.00
Provision for boundary wall along with water works/chamber & T.W.'s (C.O. to abstract of cost of Sub-work No.I) Say 72.15 - 61.30 Lacs 72.15 - 61.30 Lacs					

PROPOSED AFFORDABLE PLOTTED COLONY UNDER DDJAY 10.4125 ACRES IN VILLAGE SOHNA, SECTOR-07, HARYANA

Sub Work I		Water Supply		
Sub Head No. II		Pumping Machinery		
S. No.	Description	Unit	Qty	Rate (Rs.) Amount (in Lakhs)
1	Providing and installing electricity driven electro or submersible pumping set capable of delivering about 26 KL water per hour against a total head of 60 M complete with motor and other accessories.	Nos.	2	200,000/- 160,000.00 4.00 3.20
2	Providing & installing electricity driven pumping set capable of delivering 480 LPM of water against a total head of 30 m complete with motor and other accessories (For Domestic - 6.0 HP). 10.00 HP	Nos.	2 4	200,000.00 8,000 4.00 8,000
2	Providing & installing electricity driven pumping set capable of delivering 420 LPM of water against a total head of 35 m complete with motor and other accessories (For Flushing - 5.0 HP). 7.50 HP	Nos.	2 3	150,000/- 160,000.00 3.00 4.80
3	Provision for diesel engine generator set each for standby arrangements for booster pump complete with gear haed arrangements of following capacities.			
i)	160 90 KVA	Nos.	1	L.S. 12.50 9,000.00 9,000
4	Provision for diesel engine genset stand bye arrangements for Tubewells.	Nos.	2	150,000.00 2,50,000.00 3.00 ✓
5	Provision for cheap pressure type chlorination plant complete. e Rs 1.50 Lakh each	Nos.	2	11,50,000/- 15,00,000 3.00 0.30
6	Provision for making foundations & erection of pumping machinery.	LS	-	3.00 ✓
7	Provision for pipes, valves & specials inside the pump chamber.	IS	-	2.50 2.00
8	Provision for electric services connection including electric fittings for tubewells chambers complete including cost of transformer.	LS	-	3.00 1.50
9	Provision for carriage for materials and other unforeseen items.	LS	-	1.00 1.50
(C.O. to abstract of cost of Sub-work No.I)				Total 39.00 36.30
				Say 39.00 Lakh 36.30

Sub Work I			Water Supply		
Sub Head No. III			Distribution System/Rising Main		
S. No.	Description	Unit	Qty	Rate (Rs.)	Amount (Rs.)
1	Providing, laying, jointing & testing D.I. K-7 pipes including cost of excavation complete as per ISI marked. (For Domestic & Tube Well water supply line) <i>+ Flush pipe w/s line</i>				
i)	100 mm dia	M	3808	1460	5559680/-
ii)	150 mm dia	M	3194	1575.00	5022800.00
			83	2040/-	169320/-
2	Providing, laying and jointing GI pipes and fittings conforming to IS:1239 (heavy-class) complete with GI fittings (union and clamps including cutting holes in wall and making good the same in cement mortar 1 : 2 including pipe supports with walls and ceilings including pipe supports with galvanised MS slotted angle iron angles, clamps, nuts, bolts complete including cutting and making good the floors and walls where required complete of outer diameter.				
i)	25mm dia nominal bore	M	34	320.00	10880.00
ii)	32mm dia nominal bore	M	118	550.00	64900.00
iii)	40mm dia nominal bore	M	100	650.00	65000.00
iv)	50mm dia nominal bore	M	172	780.00	134160.00
v)	65mm dia nominal bore	M	80	950.00	76000.00
vi)	80mm dia nominal bore	M	110	1100.00	121000.00
3	Providing, fixing & Testing butterfly valves including cost of complete in all respects.				
i)	100 mm i/d	Nos.	9	12000/-	108000/-
ii)	150 mm i/d	Nos.	3	15000.00	45000.00
4	Providing, fixing & Testing Non Return valves (NRV) including cost of complete in all respects.				
i)	100 mm i/d	Nos.	3	14000.00	42000.00
5	Providing and fixing air valves and scour valves including cost of complete in all respects.				
		Nos.	6	10000.00	60000.00
6	Providing and fixing indicating plates for sluice valve, air valve etc.				
		Nos.	21	2000/-	42000/-
7	Provision for carriage of material <i>8 unforged iron items</i>	LS	-	-	210000.00
8	Provision for cutting the roads and making to its original conditions.	LS	-	-	120000.00
9	Making water supply connection.	LS	-	-	200000.00
10	Provision for rising main from HUDA water supply line to UG Tank.				
i)	100 mm i/d	M	70	1460/-	102200/-
ii)	150 mm i/d	M	10	15000/-	150000/-
Total				5327465.00	6778200/-
Say				67.78	53.27 Lacs

PROPOSED AFFORDABLE PLOTTED COLONY UNDER DDJAY 10.4125 ACRES IN VILLAGE SONHA, SECTOR-07, HARYANA

Sub Work I		Water Supply		
Sub Head No. IV		Irrigation		
S. No.	Description	Unit	Qty	Rate (Rs.) Amount (Rs.)
1	Providing, laying, jointing & testing uPVC pipe line conforming to IS 4985 including cost of Excavation etc. complete in all respect			
i)	75 OD	M	10	800/- 6500.00 8000/- 45000.00
ii)	40 OD	M	56	400/- 4500.00 22400/- 252000.00
iii)	32 OD	M	387	350/- 3200.00 135450/- 123840.00
iv)	25 OD	M	96	300/- 260.00 28800/- 24960.00
2	Providing and fixing 20 mm PVC RQRC hydrant valve with PVC lid complete in all respect. <i>of PVC key.</i>	Nos.	8	3500/- 1200.00 28000/- 9600.00
3	Providing & fixing 20 mm PVC Keys for hydrant valve complete in all respects.	Nos.	4	400.00 1600.00
4	Providing, fixing & Testing Butter fly valves including cost of complete in all respects.			
i)	65 mm i/d	Nos.	1	9000/- 4750.00 9000/- 4750.00
5	Providing and fixing air valves and scour valves including cost of complete in all respects.	Nos.	1	10000/- 4500.00 10000/- 4500.00
6	Providing and fixing indicating plates for sluice valve, air valve etc.	Nos.	2	2000/- 1000.00 4000/- 2000.00
7	Provision for carriage of materials etc. and other unforeseen charges.	IS	-	50000.00
8	Provision for cutting of roads & making good to its in original condition.	IS	-	50000.00
Total				345650/- 302950.00
Say			3.46	3.03 Lacs

Sub Work II				Sewerage Scheme	
S. No.	Description	Unit	Qty	Rate (Rs.)	Amount (Rs.)
1	Providing, lowering, jointing, cutting DWG/ RCC NP, pipes and specials into trenches including cost of excavation, bed concrete lot of manholes complete.				
i)	200 mm i/d				
a)	Average depth 0.0 m to 1.5 m	M	541	1700/-	919700/-
b)	Average depth 1.5 m to 4.5 m	M	497	2040/-	1013880/-
ii)	300 mm i/d				
a)	Average depth 0.0 m to 1.5 m	M	0	1450.00	0.00
b)	Average depth 1.5 m to 4.5 m	M	15	2880/-	43200/-
2	Provision for lighting, watching and temporary diversion of traffic, <i>treeberry & shoring</i>	LS	-	-	100000.00
3	Provision for cutting of roads and cartiage of materials etc. and other unforeseen charges.	LS	-	-	300000/-
4	Provision for connection with HUDA.	LS	-	-	250000/-
5	Cost of 400 Kld Sewerage Treatment Plant. <i>460</i> <i>Rs. 16000/- Per Kld</i>	LS	460	16000/-	7360000/-
6	Provision for CI / DI pipe from STP. To Huda Main Line.				
i)	150 mm dia pipe.	M	50	2040/-	102000/-
Add 3% contingencies					6752240.00
Add 49% Deptt. Charges					305663/-
(C.C.) to abstract of cost of Sub-work No. I)					10494443/-
Total					5142277/-
Say					15636720/-
					103.63 Lacs

Sub Work - III		Storm Water Drain			
S. No.	Description	Unit	Qty	Rate (Rs.)	Amount (Rs.)
1	Providing, lowering, jointing, cutting RCC NP ₃ pipes and specials into trenches including cost of excavation cost of manholes, ventilating chambers etc. complete in all respects.				
i)	400 mm i/d	M	709	2500/-	1772500/-
a)	Average depth upto 1.5 m		709	1900.00	1347100.00
b)	Average depth 1.5 m to 4.5 m	M	425	2250.00	956250.00
			445	2600/-	1157000/-
iii)	600 mm i/d	M	20	3250.00	65000.00
a)	Average depth 1.5 m to 4.5 m				
2	Provision for Road Gully & Drain. <i>including connecting pipe.</i>	LS	-	-	250000.00
					5,00,000/-
3	Provision for cutting of roads and carriage of materials etc. and other unforeseen items	LS	-	-	250000.00
4	Provision for disposal arrangements Recharge Pit.	Nos	10	350,000/-	35,00,000/-
			4	200000.00	800000.00
					3,00,000/-
					1000000.00
5	Provision for lighting, watching and temporary diversion of traffic, <i>timbering & shoring etc.</i>	LS	-	-	
6	Provision for connection with HUDA.	M	60	2650.00	159000.00
				2660/-	156000/-
					2,00,000/-
					159000.00
					3927350.00
					7835500/-
					117820.50
					235065/-
					8070565/-
					4045170.50
					1982133.55
					3954577/-
					12025142/-
					6027304.05
					120,25,14,60.27 Lacs
					60.27 Lacs

Total

SAY

120,25,14,60.27 Lacs

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

Sub Work IV				Road Work	
S. No.	Description	Unit	Qty	Rate (Rs.)	Amount (Rs.)
1	Provision for leveling & earth filling as per site condition 10.4125 acre @ 1000000 ¹⁷⁵⁰⁰⁰ / acre	Acres	10.4125	175000/- +50000/-	18221880/- 1561875.00
2 a	Construction of Metalled road by:- i) Providing GSB 200 mm thick. ✓ ii) 250 mm thick W.M.M. stone aggregate. iii) 50 mm thick P.W. ³⁰ DBM iv) 20 mm thick ³⁰ W.M.M. ^{BC} W.M.M. complete in all respect.	Sq. mtr.	6060 2470.0 +5390 =6050	1500/- 1200 1200	90,90,000/- 304000.00
2 b	Construction of Road by Paver i) Providing GSB 200 mm thick. ii) 250 mm thick W.M.M. stone aggregate. iii) 80 mm thick C.C. paver block	Sq. mtr.	3390.0	1200	4068000.00
3	Provision for footpath with paver blocks of design mix concrete. (1006 x 1.20 = 1207.2 sqm) ^{1006 x 1.20 = 1207.2 sqm} 1006 x 1.20 = 1207.2 sqm	Sq. mtr.	1207.20	1000/- 750/-	1207200/- 905400.00
4	Provision for Pavement in shopping Area i.e. 50% of the area. ^{1673.63 x 50% = 836.82 sqm} 1673.63 x 50% = 836.82 sqm	Sq. mtr.	836.82 842.8	1000/- 750/-	836820/- 632400.00
5	Provision for kerb stone with complete specification (1006 x 2 = 2012 rmt)	mtr.	2012.0	600/- 600/-	1207200/- 1207200.00
6	Provision for Carriage of material & unforeseen items, demarcation etc.	L.S.		LS 200000.00	200000.00
7	Provision for traffic lighting and guide map/ indicators	L.S.		LS 300000.00	300000.00
Total					14663408/- 11978575.00
Add 3% contingencies					439902/- 359357.25
Add 49 % department charges					15103310/- 359357.25
Total					12337932.25
Total					123.38 Lacs
Total					7400622/- 6046 Lacs
SAY					22503932/- 183.84 Lacs

Say Rs 225.04 Lacs

PROPOSED AFFORDABLE PLOTTED COLONY UNDER DDJAY 10.4125 ACRES IN VILLAGE SOHNA, SECTOR- 07, HARYANA

Sub Work V				Street Lighting	
S. No.	Description	Unit	Qty	Rate (Rs.)	Amount (Rs.)
1	Providing street lighting on internal roads as per standard specifications of HVPNL with CFL	per acre	10.4125	250,000/- 4000000.00	2603125/- 1041250.00
	Add 3% contingencies				78094/- 34237.50
				Total	2681219/- 1072487.50
	Add 49% Deprt. Charges				1313797/- 525518.88
				Total	3995016/- 1598006.00
				SAY	39.95 15.98 lacs

PROPOSED AFFORDABLE PLOTTED COLONY UNDER DDJAY 10.4125 ACRES IN VILLAGE SOHNA, SECTOR-07, HARYANA

Sub Work VII

				Maintenance Charges & Resurfacing of Roads	
S. No.	Description	Unit	Qty	Rate (Rs.)	Amount (Rs.)
1	Provision for maintenance charges for water supply, sewerage, storm water drainage, roads, street light, horticulture etc. complete including operation & establishments charges as per HUDA norms after completion & resurfacing of roads after 10 years or 1st phase. 8/W	per acre	10.4125		
	10.4125 acres @ 5/lacs per acre				8,00,000/- 83,30,000/- 5000000/- 5246250/-
2	Provision for resurfacing & strengthening of road after five years of 1st phase @ 600/- per sqm (with 50mm BM) 230mm BC	Sq. mtr.	6060 9049.0	660/- 600/-	39,99,600/- 54,29,400.00
3	Provision for resurfacing & strengthening of road after ten years of 2 nd phase @ 800/- per sqm (with 50mm BM & 30mm BC)	Sq. mtr.	6060 9049.0	825/- 800/-	4,99,950/- 72,39,200.00
Total					173,29,100/- 178,74,850.00
Add 3% contingency & PE charges					519,873/- 536,245.50
Total					178,48,973/- 184,10,955.50
Add 49% Departmental charges					92,14,36.95 2,65,94,970/-
Total					274,32,532.5
say				Rs 265.98 Lakh	274.33 Lacs

PARADISE CONSULTANTS

WATER SUPPLY QUANTITY SHEET					
DOMESTIC WATER SUPPLY QUANTITY SHEET					
S.No.	Line No		Length of Pipe mtr.	Dia of Pipe mtr.	
	From	To			
1	UGT.	D1	10.0	150	
2	D1	D2	38.0	150	
3	D2	D3	21.0	100	
4	D3	D3a	38.0	40 100	
5	D3	D4	9.0	100	
6	D4	D5	40.0	100	
7	D5	D6	9.0	100	
8	D6	D6a	2.0	100	
9	D6a	D6b	62.0	50 100	
10	D6	D7	21.0	100	
11	D7	D7a	110.0	80 100	
12	D7	D8	37.0	100	
13	D8	D8a	125.0	100	
14	D8	D9	9.0	100	
15	D8a	D9	135.0	100	
16	D9	D10	40.0	100	
17	D10	D11	9.0	100	
18	D10	D12	121.0	100	
19	D12	D11	113.0	100	
20	D11	D11a	17.0	25 100	
21	D2	D13	115.0	100	
22	D13	D14	9.0	100	
23	D14	D4	138.0	100	
24	D14	D15	40.0	100	
25	D15	D5	138.0	100	
26	D15	D16	9.0	100	
27	D16	D16a	32.0	100	
28	D16a	D16b	80.0	65 100	
29	D16a	D6a	105.0	100	
30	D16	D17	75.0	100	
31	D13	D17	152.0	100	
			1859		

100 mm dia = 1811 mtr
1 Sonundi = 48 mtr.

PROPOSED AFFORDABLE PLOTTED COLONY UNDER DDJAY 10.4125 ACRES IN VILLAGE SOHNA, SECTOR-07, HARYANA

S.No.	Line No		Length of Pipe mtr.	Dia of Pipe mtr.
	From	To		
FLUSHING WATER SUPPLY QUANTITY SHEET				
1	STP.	F1	10.0	150
2.	F1	F2	60.0	100
3.	F2	F3	21.0	100
4.	F3	F3a	38.0	32 100
5.	F3	F4	9.0	100
6.	F4	F5	40.0	100
7.	F5	F6	9.0	100
8.	F6	F6a	2.0	100
9.	F6a	F6b	62.0	40 100
10.	F6	F7	21.0	100
11.	F7	F7a	110.0	30 100
12.	F7	F8	37.0	100
13.	F8	F8a	125.0	100
14.	F8	F9	9.0	100
15.	F8a	F9	135.0	100
16.	F9	F10	40.0	100
17.	F10	F11	9.0	100
18.	F10	F12	121.0	100
19.	F12	F11	113.0	100
20.	F11	F11a	17.0	25 100
21.	F2	F13	115.0	100
22.	F13	F14	9.0	100
23.	F14	F4	138.0	100
24.	F14	F15	40.0	100
25.	F15	F5	138.0	100
26.	F15	F16	9.0	100
27.	F16	F16a	32.0	100
28.	F16a	F16b	80.0	32 100
29.	F16a	F6a	105.0	100
30.	F16	F17	75.0	100
31.	F13	F17	152.0	100
			1881	

100 mm dia = 1871 mtr.
130 mm dia = 10 mtr

S.No.	Line No		Length of Pipe mtr.	Dia of Pipe mtr.
	From	To		
TUBE WELL WATER SUPPLY QUANTITY SHEET				
1	TUBE WELL 01	T1	121.0	100
2	TUBE WELL 02	T1	5.0	100
3	T1	UGT	25.0	150
HUDA WATER SUPPLY QUANTITY SHEET				
1	MUNICIPAL LINE	UGT	70.0	100
Description				
Domestic & flushing Water Supply line			34	25
Domestic & flushing Water Supply line			148	32
Domestic & flushing Water Supply line			100	40
Domestic & flushing Water Supply line			172	50
Domestic & flushing Water Supply line			80	65
Domestic & flushing Water Supply line			110	80
Domestic, flushing & Tube Well Water Supply line	(18.11+19.71+126)		3494-3808	100 ✓
Domestic, flushing & Tube Well Water Supply line	(48+10+25)		83 ✓	150 ✓
Description				
Municipal Water Supply line			70.0	100
100 Dia Valve				
100 Dia Valve			9	Nos.
150 Dia Valve			3	Nos.
100 Dia Non Return Valve			3	Nos.
Air Valve			6	Nos.

IRRIGATION WATER SUPPLY QUANTITY SHEET					
S.No.	Line No		Length of Pipe mtr.	Dia of Pipe OD	
	From	To			
1	STP	G1	10.0	75	
2.	G1	G2	32.0	40	
3.	G2	G3	61.0	32	
4.	G3	G4	37.0	32	
5.	G4	G5	43.0	25	
6.	G1	G6	24.0	40	
7.	G6	G7	50.0	32	
8.	G7	G8	239.0	32	
9.	G8	G9	53.0	25	
Irrigation Water Supply line			96.0	25	
Irrigation Water Supply line			387.0	32	
Irrigation Water Supply line			56.0	40	
Irrigation Water Supply line			10.0	75	
Garden Hydrant			8	Nos.	
80 Dia Valve			1	Nos.	
Air Valve			1	Nos.	

PROPOSED AFFORDABLE PLOTTED COLONY UNDER DDJAY 10.4125 ACRES IN VILLAGE SOHNA, SECTOR-07, HARYANA

TITLE - SEWERAGE QUANTITY SHEET													
S.No.	Line No.		Length (mtr.)	Pipe Dia		Depth			EXCAVATION				
	From	To		(mm)	(mtr.)	Start (mtr.)	End (mtr.)	Avg. (mtr.)	0.0 - 1.5 (mtr.)	1.5 - 3.0 (mtr.)	3.0 - 4.5 (mtr.)	4.5 - 6.0 (mtr.)	
1	S1	S2	102.0	200	0.200	1.20	1.52	1.36	102.0	0.0	0.0	0.0	
2	S2a	S2	23.0	200	0.200	1.75	1.82	1.79	0.0	23.0	0.0	0.0	
3	S2	S3	50.0	200	0.200	1.82	1.93	1.88	0.0	50.0	0.0	0.0	
4	S3a	S3	113.0	200	0.200	1.20	1.50	1.35	113.0	0.0	0.0	0.0	
5	S3	S4	38.0	200	0.200	1.93	2.00	1.96	0.0	38.0	0.0	0.0	
6	S4a	S4b	35.0	200	0.200	2.00	2.11	2.05	0.0	35.0	0.0	0.0	
7	S4c	S4b	66.0	200	0.200	1.20	1.41	1.30	66.0	0.0	0.0	0.0	
8	S4b	S4	23.0	200	0.200	2.11	2.18	2.14	0.0	23.0	0.0	0.0	
9	S4	S4	45.0	200	0.200	1.20	1.34	1.27	45.0	0.0	0.0	0.0	
10	S4	S4	108.0	200	0.200	2.18	2.67	2.42	0.0	108.0	0.0	0.0	
11	S4	S4	58.0	200	0.200	1.20	1.38	1.29	58.0	0.0	0.0	0.0	
12	S4	S4	103.0	200	0.200	1.88	2.30	2.09	0.0	103.0	0.0	0.0	
13	S4	S4	75.0	200	0.200	1.20	1.38	1.29	75.0	0.0	0.0	0.0	
14	S4	S4	40.0	200	0.200	2.30	2.48	2.39	0.0	40.0	0.0	0.0	
15	S4	S4	82.0	200	0.200	1.20	1.41	1.30	82.0	0.0	0.0	0.0	
16	S4	S4	42.0	200	0.200	2.48	2.61	2.54	0.0	42.0	0.0	0.0	
17	S4	S4	35.0	200	0.200	2.61	2.72	2.66	0.0	35.0	0.0	0.0	
18	S4	S4	15.0	300	0.300	2.82	2.85	2.83	0.0	15.0	0.0	0.0	
Total			1053.0						541.0	512.0	0.0	0.0	

Excavation Depth				
Description	(0.0 - 1.5)	(1.5 - 3.0)	(3.0 - 4.5)	(4.5 - 6.0)
200 mm Dia pipe	541.0	497.0	0.0	0.0
250 mm Dia pipe	0.0	0.0	0.0	0.0
300 mm Dia pipe	0.0	15.0	0.0	0.0
400 mm Dia pipe	0.0	0.0	0.0	0.0

PROPOSED AFFORDABLE PLOTTED COLONY UNDER DDJAY 10.4125 ACRES IN VILLAGE
SOHNA, SECTOR- 07,HARYANA

TITLE : ROAD QUANTITY SHEET					
AREA OF ROAD (Bituminous Roads)					
S.NO.	ROAD NO.	LENGTH (In Rm. Mt.)	WIDTH (In Rm. Mt.)	-	TOTAL AREA (In Sq. Mt.)
-	-	-	-	-	-
METALLED ROAD (BITUMENIUS SURFACE)					
1	R-1	125.00	6.00		750.00
2	R-2	138.00	6.00		828.00
3	R-4	138.00	6.00		828.00
TOTAL		401.00			2406.00
ADD 10% FOR CURVES					
TOTAL					240.6
SAY					2646.60
CC PAVER BLOCK SURFACE ROAD					
4	R-3	119.00	6.00		714.00
5	R-4a	43.00	6.00		258.00
6	R-5	136.00	6.00		816.00
7	R-6	77.00	6.00		462.00
8	R-7	138.00	6.00		828.00
TOTAL		513.00			3078.00
ADD 10% FOR CURVES					
TOTAL					307.8
SAY					3385.80
					3390.00
Total Road Length					
		914.00			
ADD 10% FOR CURVES					
		91.4			
TOTAL					
		1005.40			
SAY					

Total Area = 6060 sqm.

PROJECT : PROPOSED AFFORDABLE PLOTTED COLONY UNDER DAYAL JAN AWAS YOJNA-2016 OVER AN AREA MEASURING 10.4125 ACRES IN VILLAGE SOHNA, SECTOR-07, HARYANA										
S.No.	Line No.		Average Demand	Peak Demand @ 1.5 Times	Flow Rate	Length	Head Loss	Total Head Loss	Velocity	Pipe Dia
-	From	To	klph.	lph.	lpm.	mt.	mt./ mt.	mt.	m/sec	mm
1	Tube Well 01	T1	23.17	34.76	579.27	121.0	0.029	3.51	1.229	100
2.	Tube Well 02	T1	23.17	34.76	579.27	5.0	0.029	0.15	1.229	100
3.	T1	UGT.	46.34	69.51	1158.53	25.0	0.015	0.36	1.092	150

PROJECT : PROPOSED AFFORDABLE PLOTTED COLONY UNDER DEEN DAYAL JAIN AWAS YOJNA-2016 OVER AN AREA MEASURING 10.4125 ACRES IN VILLAGE SOHNA, SECTOR-07, HARYANA													
TITLE : HYDRAULIC DESIGN CHART FOR MUNICIPAL WATER SUPPLY CONNECTION LINE FROM HUDA													
S.No	Line No.		Average Demand		Peak Demand @ 1.5 Times	Flow Rate	Pipe Length	Head Loss	Total Head Loss	Velocity	Pipe Dia		
-	From	To	kld.	kl/hr.	lph.	lpm.	mtr.	mtr./ mtr.	mtr.	m/sec	mm		
1	HUDA		UGT		370.73	16.9	25.3	421.3	70.0	0.016	1.13	0.894	100
Note : HUDA supply line calculation has been done as / 22 hours.													

PROJECT : PROPOSED AFFORDABLE PLOTTED COLONY UNDER DDJAY 10.4125 ACRES IN VILLAGE SOHNA, SECTOR-07, HARYANA														
S.No.	Plot No.	To	No. of Plois	Population (6 persons / person)	Water Requirement (liters / person / day)	Pop. Req. (liters / person / day)	Water Req. (liters / person / day)	Type of Building	Water Req. (liters / person / day)	Total water Requirement	Total water Requirement	Total water Requirement	Total water Requirement	Total water Requirement
1	UGT	D1	176	3168	491040	0	0	0	0	23500	314451	314451	314451	314451
2	D1	D2	0	176	3168	491040	0	0	0	0	319176	958	319176	319176
3	D2	D3	0	88	1344	245520	0	0	0	0	159388	479	159388	159388
4	D3	D4	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
5	D4	D5	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
6	D5	D6	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
7	D6	D7	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
8	D7	D8	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
9	D8	D9	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
10	D9	D10	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
11	D10	D11	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
12	D11	D12	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
13	D12	D13	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
14	D13	D14	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
15	D14	D15	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
16	D15	D16	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
17	D16	D17	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
18	D17	D18	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
19	D18	D19	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
20	D19	D20	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
21	D20	D21	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
22	D21	D22	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
23	D22	D23	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
24	D23	D24	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
25	D24	D25	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
26	D25	D26	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
27	D26	D27	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
28	D27	D28	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
29	D28	D29	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
30	D29	D30	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
31	D30	D31	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
32	D31	D32	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
33	D32	D33	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
34	D33	D34	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
35	D34	D35	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
36	D35	D36	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
37	D36	D37	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
38	D37	D38	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
39	D38	D39	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
40	D39	D40	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
41	D40	D41	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
42	D41	D42	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
43	D42	D43	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
44	D43	D44	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
45	D44	D45	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
46	D45	D46	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
47	D46	D47	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
48	D47	D48	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
49	D48	D49	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
50	D49	D50	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
51	D50	D51	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
52	D51	D52	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
53	D52	D53	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
54	D53	D54	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
55	D54	D55	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
56	D55	D56	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
57	D56	D57	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
58	D57	D58	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
59	D58	D59	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
60	D59	D60	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
61	D60	D61	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
62	D61	D62	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
63	D62	D63	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
64	D63	D64	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
65	D64	D65	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
66	D65	D66	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
67	D66	D67	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
68	D67	D68	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
69	D68	D69	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
70	D69	D70	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
71	D70	D71	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
72	D71	D72	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
73	D72	D73	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
74	D73	D74	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
75	D74	D75	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
76	D75	D76	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
77	D76	D77	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
78	D77	D78	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
79	D78	D79	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
80	D79	D80	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
81	D80	D81	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
82	D81	D82	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
83	D82	D83	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
84	D83	D84	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
85	D84	D85	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
86	D85	D86	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
87	D86	D87	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
88	D87	D88	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
89	D88	D89	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
90	D89	D90	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
91	D90	D91	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
92	D91	D92	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
93	D92	D93	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
94	D93	D94	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
95	D94	D95	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
96	D95	D96	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
97	D96	D97	5	5	90	13950	0	0	0	0	13950	9068	13950	13950
98	D97	D98	5	5	90	13950	0	0	0	0	13950	9068	13950	13950

S.No.	Line No	Daily requirement for domestic use																							
		From	To	No. of plots	Pop. / No.	Population in plots / persons / Pop.	Water Requirement / day/person in ltr	Nos.	Pop. in Pops. / day	Water Req. / day	Type of Building	Rate of Water Requirement	Residential & Non Residential Building	Average Demand in ltr	Peak Demand in ltr	Flow Rate	Length of Pipe	Head Loss	Total Head	Velocity	Dia. of Pipe	Ground Level at start	Hydraulic Head at start	Ground Level at End	Hydraulic Head at End
		334.45 KLD																							
		Assuming 4 hours pumping																							
		1393.346 LPM																							
		No. of Pumps (3 W + 1 S)																							
		Say																							
		Maximum Building Height																							
		18 m																							
		30.00 m																							
		Pump Head																							
		52 HP																							
		6.0 HP																							
		Say																							

S.No.	Line No	Daily requirement for domestic use																									
		Assuming 4 hours pumping																									
Flow Rate																											
No. of Pumps (2 W + 1 S)																											
Say																											
Maximum Building Height																											
18 m																											
420.0 LPM																											
418.2 LPM																											
836.413 LPM																											
200.74 KLD																											
Pump Head																											
28.00 m																											
Pump IHP																											
4.3 IHP																											
5.0 HP																											
Say																											

[illegible]

PROJECT : PROPOSED AFFORDABLE PLOTTED COLONY UNDER DEEN DAYAL JAIN AWAS YOJNA-2016 OVER AN AREA MEASURING 10.4125 ACRES IN														
LOAD ON SEWAGE LINES														
Residential Sewage Load														
Non Residential Load														
Residential + Non Residential Load														
S.No.	Name of Sewer Line	Plots	Population for Plot @ 18 persons	Water Req. @ 155 Ltr/ day /Person	EWS	Population for Plot @ 9 persons	Water Req. @ 155 Ltr/ day /Person	Amenity	Water Requirement @ Turnsum/day	Cross Water Requirement (Self Load on (Sewer Line) Ipd.	Sewage Flow (Self Load on (Sewer Line) Ipd.	Sewage Load on (Self Load on (Sewer Line) Ipd.		
	From	To	Unit	18	Unit	9	155.00	-	Ipd.	Ipd.	80%	1000		
1.	S1	S2	18	324	0	0	0	Commercial	11000.00	61220	48976	48.98		
2.	S2a	S2	2	36	0	0	0		0.00	5580	4464	4.46		
3.	S2	S3	6	108	0	0	0		0.00	16740	13392	13.39		
4.	S3a	S3	36	648	0	0	0		0.00	100440	80352	80.35		
5.	S3	S4	5	90	0	0	0		0.00	13950	11160	11.16		
6.	S4	S5	3	54	0	0	0		0.00	8370	6696	6.70		
7.	S5a	S5	8	144	0	0	0		0.00	22320	17856	17.86		
8.	S5	S6	2	36	0	0	0		0.00	5580	4464	4.46		
9.	S6a	S6	6	108	0	0	0		0.00	16740	13392	13.39		
10.	S6	S7	21	378	0	0	0		0.00	58590	46872	46.87		
11.	S8	S9	6	108	0	0	0		0.00	16740	13392	13.39		
12.	S9	S10	20	360	0	0	0		0.00	55800	44640	44.64		
13.	S10a	S10	10	180	0	0	0		0.00	27900	22320	22.32		
14.	S10	S11	8	144	0	0	0		0.00	22320	17856	17.86		
15.	S11a	S11	12	216	0	0	0		0.00	33480	26784	26.78		
16.	S11	S12	7	126	0	0	0		0.00	19530	15624	15.62		
17.	S12	S7	6	108	0	0	0		0.00	16740	13392	13.39		
18.	S7	S7P	0	0	0	0	0		0.00	0	0	0.00		

S.No.	Line No.	From	To	Length (mtr.)	Catchment Area (Sqm.)	Discharge @ 25 mm/hr rainfall	Pipe dia (mm)	Slope 1 in (mm)	Velocity m/sec.	Capacity of pipe	Fall in line	Levels at start (mtr.)	Remark For Classing Sewer & Storm Water	FRL	FSL	IL	Levels at End (mtr.)	Depth (mtr.)	Avg.	Manhole Depth	
1.	A1	A2	120.0	4800.0	0.0	4800.0	20.00	400	0.65	81.57	0.24	200.200	199.20	198.80	200.150	198.96	198.56	1.40	1.59	1.50	
2.	A2	D.C.01	7.0	660.0	4800.0	5460.0	22.75	400	0.65	81.57	0.01	200.150	198.96	198.56	200.150	198.94	198.54	1.59	1.61	1.60	
3.	D.C.01	R.P.01	7.0	0.0	5460.0	5460.0	22.75	400	0.65	81.57	0.01	200.150	198.94	198.54	200.150	198.93	198.53	1.61	1.62	1.62	
4.	R.P.01	A3	7.0	2730.0	2730.0	5410.0	11.38	400	0.65	81.57	0.01	200.150	199.15	198.75	200.150	199.14	198.74	1.40	1.41	1.41	
5.	A3	A4	62.0	2680.0	2730.0	5410.0	22.54	400	0.65	81.57	0.13	200.150	199.14	198.74	200.150	199.01	198.61	1.41	1.54	1.48	
6.	A4	D.C.02	5.0	590.0	5410.0	6000.0	25.00	400	0.65	81.57	0.01	200.150	199.01	198.61	200.150	199.00	198.60	1.54	1.55	1.55	
7.	D.C.02	R.P.02	5.0	0.0	6000.0	6000.0	25.00	400	0.65	81.57	0.01	200.150	199.00	198.60	200.150	198.99	198.59	1.55	1.56	1.56	
8.	R.P.02	A5	5.0	0.0	3000.0	3000.0	12.50	400	0.65	81.57	0.01	200.150	199.15	198.75	200.150	199.14	198.74	1.40	1.41	1.41	
9.	A5	A6	70.0	2570.0	3000.0	5570.0	23.21	400	0.65	81.57	0.14	200.150	199.14	198.74	200.000	199.00	198.60	1.41	1.40	1.41	
10.	A6	A9	75.0	2750.0	0.0	2750.0	11.46	400	0.65	81.57	0.15	200.150	199.15	198.75	200.100	199.00	198.60	1.40	1.50	1.45	
11.	A9	A10	10.0	370.0	2750.0	3120.0	13.00	400	0.65	81.57	0.02	200.100	199.00	198.60	200.100	198.98	198.58	1.50	1.52	1.51	
12.	A10a	A10	28.0	1030.0	0.0	1030.0	4.29	400	0.65	81.57	0.06	200.150	199.15	198.75	200.100	199.09	198.69	1.40	1.41	1.40	
13.	A10	A11	112.0	4110.0	4150.0	8260.0	34.42	400	0.65	81.57	0.23	200.100	198.98	198.58	200.000	198.75	198.35	1.52	1.65	1.59	
14.	A11a	A11	58.0	2130.0	0.0	2130.0	8.88	400	0.65	81.57	0.12	200.000	199.00	198.60	200.000	198.88	198.48	1.40	1.52	1.46	
15.	A11	A6	49.0	1800.0	10390.0	12190.0	50.79	400	0.65	81.57	0.10	200.000	198.75	198.35	200.000	198.65	198.25	1.65	1.75	1.70	
16.	A6	A7	42.0	1540.0	17760.0	19300.0	80.42	400	0.65	81.57	0.06	200.000	198.65	198.15	200.000	198.58	198.18	1.85	1.92	1.88	
17.	A12	A13	80.0	2940.0	0.0	2940.0	12.25	400	0.65	81.57	0.16	200.100	199.10	198.70	200.100	198.94	198.54	1.40	1.56	1.48	
18.	A13	D.C.03	7.0	260.0	3200.0	3200.0	13.33	400	0.65	81.57	0.01	200.100	198.94	198.54	200.100	198.92	198.52	1.56	1.58	1.57	
19.	D.C.03	R.P.03	5.0	0.0	3200.0	3200.0	13.33	400	0.65	81.57	0.01	200.100	198.92	198.52	200.100	198.91	198.51	1.58	1.59	1.58	
20.	R.P.03	A14	5.0	0.0	1600.0	1600.0	6.67	400	0.65	81.57	0.01	200.100	199.10	198.70	200.100	199.09	198.69	1.40	1.41	1.41	
21.	A14	A15	10.0	370.0	1600.0	1970.0	8.21	400	0.65	81.57	0.02	200.100	199.09	198.69	200.100	199.07	198.67	1.41	1.43	1.42	
22.	A15a	A15	20.0	740.0	0.0	740.0	3.08	400	0.65	81.57	0.04	200.100	199.10	198.70	200.100	199.06	198.66	1.40	1.44	1.42	
23.	A15	A16	48.0	1760.0	2710.0	4470.0	18.63	400	0.65	81.57	0.10	200.100	199.06	198.66	200.050	198.96	198.56	1.44	1.49	1.46	
24.	A16a	A16	121.0	4440.0	0.0	4440.0	18.50	400	0.65	81.57	0.25	200.100	199.10	198.70	200.050	198.85	198.45	1.40	1.60	1.50	
25.	A16	A17	48.0	1760.0	8910.0	10670.0	44.46	400	0.65	81.57	0.10	200.050	198.85	198.45	200.000	198.76	198.36	1.60	1.64	1.62	
26.	A17	A18	104.0	3820.0	10670.0	14490.0	60.38	400	0.65	81.57	0.21	200.000	198.76	198.36	200.000	198.54	198.14	1.64	1.86	1.75	
27.	A18	A7	24.0	880.0	14490.0	15370.0	64.04	400	0.65	81.57	0.05	200.000	198.54	198.14	200.000	198.49	198.09	1.86	1.91	1.88	
28.	D.C.04	A7	5.0	190.0	34670.0	34860.0	145.25	850	0.65	182.59	0.01	200.000	198.49	197.89	200.000	198.48	197.88	2.11	2.11	2.11	
29.	D.C.04	R.P.04	5.0	0.0	34860.0	34860.0	145.25	850	0.65	182.59	0.01	200.000	198.49	197.89	200.000	198.48	197.88	2.12	2.12	2.11	
30.	R.P.04	To External	10.0	0.0	17430.0	17430.0	72.63	850	0.65	182.59	0.02	200.000	199.00	198.40	200.000	198.98	198.38	1.60	1.62	1.61	

Formula Used:
Velocity(m/s)=(1/n)(A/P)^{2/3}((1/slope)⁵·n=0.15 for RCC pipe (Manning's Coefficient) A=Area of x-section of pipe in sqm.
P = Wetted Perimeter in m
Capacity of pipe(lps) =Area of x-section of pipe in sqm x velocity in m/s x1000x1/2(Storm water are designed to run full flow)
Abbreviation Used: IL=Invert level of pipe FSL=Full supply level FRL=Formation Road Level CL=Connection Level

Formula Used:
 $\text{Velocity (m/s)} = (1/n) \times (A/P)^{2/3} \times (1/\text{slope})^{1/5}$, n=0.15 for RCC pipe (Manning's Coefficient) A=Area of x-section of pipe in sqm.
P=Wetted Perimeter in m
Capacity of pipe (lps) = Area of x-section of pipe in sqm x velocity in m/s x 1000 x 1/2 (Storm water are designed to run full flow)
Abbreviation Used: IL=Invert level of pipe FSL=Full supply level FRL=Formation Road Level CL=Connection Level

Region Water Network Plot = 10055