11.0625 ACRES RESIDENTIAL PLOTTED COLONY UNDER DDJAY IN SECTOR 36 SOHNA

M/S SIGNATURE GLOBAL HOMES PVT. LTD.

ESTIMATE FOR PROVIDING WATER SUPPLY, SEWERAGE, STORM WATER DRAINAGE, ROADS, STREET LIGHTING AND HORTICULTURE IN RESPECT OF 11.0625 ACRES RESIDENTIAL PLOTTED COLONY IN SECTOR 36, SOHNA

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PROJECT REPORT/ESTIMATE FOR PROVIDING WATER SUPPLY, SEWERAGE, STORM WATER DRAINAGE, ROADS, STREET LIGHTING AND HORTICULTURE IN RESPECT OF 11.0625 ACRES RESIDENTIAL PLOTTED COLONY UNDER DD JAY IN SECTOR 36 SOHNA

REPORT

The Haryana Government has prepared a master plan for development of Residential/Industrial / Commercial urban estate SOHNA. M/S SIGNATURE GLOBAL HOMES PVT LTD has decided to develop a part of the area in this master plan and has named this part as 11.0625 Acres Residential plotted colony . This scheme is located in sector –36 of Haryana Urban Development Authority SOHNA. License has already been granted under by DGTCP Lc. The brief details of the colony are as under:-

WATER SUPPLY

1 Source

The source of water supply in this area is tubewells at present as the underground water is potable and fit for human consumption. Moreover water is available at reasonable depth. The average yield of tubewell with 40-45 ft strainers will be about 20,000 litre 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 and the tubewells will be bored in tune with growth of demand to avoid absolence of the tubewells. The ultimate requirement of tubewells includes provisions of 10% stand by. Ultimately, water shall be supplied to the Project by HARYANA URBAN DEVELOPMENT AUTHORITY, SOHNA.

2 Design

The scheme has been designed for approved population of 2659.50 persons. The rate of water supply per head per day has been taken as 172.5litres (150 + 15 %) as per HUDA norms. In addition to above necessary provision of water for community area, shopping centres, parks etc. have been taken into account for calculating the maximum quantity of water requirement.

3 Pump chambers and Pumping Machinery

It is proposed to equip each tubewell with an electrically driven set ejecto type or submersible pump capable of delivering of 20,000 litre per hour. It is also proposed to equip required Nos pumping sets with stand by diesel engins / gen set engines for operation during failure of electricity.

4 Under Ground Storage

Underground storage tank provision has been made for 300KL capacity.

(a) In two compartments, which caters for the domestic as well as for firefighting requirement. The water for domestic water compartment shall overflow the fire compartment so that the water in the fire compartment also remains fresh.

5 Boosting Station

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

6 Distribution System

The distribution system for this development has been designed to supply @ 172.5litre per head her day @ 3 times the average rate of flow on Hazen William formula. Necessary provision for laying CI/DI pipes conforming to relevant IS standards along with valves and specials has been made in the project. The minimum terminal head at any point will be more than 27.00 meters so that it can serve the stilt and four floors stories construction envisaged in the plan. Minimum pipe dia for distribution is kept as 100 mm dia. For drinking water supply and 80mm dia for flushing cum irrigation water supply.

7 Rising mains

Rising mains from HUDA water main or sector road to water works have also been proposed and provision has been made in this estimate.

8 Sewerage

The sewer lines have been designed for 3 times average DWF in relation to the water supply demand assuming that 75% of the domestic water supply shall find its way into the proposed sewer. SW/RCC pipe sewers have been proposed and designed to run half full. The sewers have been designed on 0.77 M per second minimum velocity i.e. self cleansing velocity. Necessary provision for laying s.w. /~~R.C.C.~~ pipes manholes etc. has been made in this estimate.

9 Storm water Drainage

[[Pick the date]]

The storm water drainage is being designed to carry 6.25mm rainfall per hour. Also suitable provisions are contemplated in our scheme to ensure better recharging of underground water table in the area R.C.C. Hume pipes drain with minimum 400mm dia is proposed in this area.

10 Roads

The roads in the colony have been planned 9m wide. The following specifications have been adopted which are reproduced below.

(i) 300 mm GSB

(ii) 250 mm stone aggregate

(iii) 50 mm thick B.M

(iv) 20 mm MSS

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

11 Street lighting

The provision has been made on lump sum basis.

12 Horticulture

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

13 Specifications

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

14 Rates

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

15 Cost

The total cost of development in this project including various P.H. and B & R services works out to Rs ~~1022.60~~ 1014.23 Lacs. Including 3% contingencies & P.E. charges and 49% departmental administrative , unforeseen and escalation charges.

The cost per gross acre for the phase works out to be Rs ~~92.44~~ 91.68 which covers the provision of services like water supply, sewerage, storm water drainage, roads, street lighting and plantation including maintenance thereof.

11.0625 ACRES RESIDENTIAL PLOTTED COLONY
SECTOR -36 SOHNA
DESIGN CALCULATIONS

Daily Requirement

1. **Total No. of Plots** = 197

   Population per plot (@ 13.5) =2659.50

   Therefore population = 13.5 x 197 Persons

   Water requirement for plots @ 172.5 litres/head/day =458763.75litres

   2659.5 x 172.5 or

   458.76

   Say =465.00

2. **Add Requirement for Institutions etc.**

a. No of commercials = 2 No

   Daily water requirement @ 32000 litre/Acre

   Area of commercial =0.410 Acre

   Therefore daily water requirement = 0.410 x 32000 = 13120.00 litres
   = 13.12 KL

b. Community place

   Area of community place = 1.109 acres

   Daily water requirement @25000litre/acre
   = 1.109X 25000 = 27725.00 litres
   = 27.72 KL

   Total **= 40.84 KL**

   say **= 45.00 KL**

3. **Area under Parks**

   Green Parks

   Therefore daily water requirement = 0.837

   @ 25000 litre/Acre =20925.00 Litres

   = 0.837x 25000 = 21.00 KL

4.	**Area under roads** out of 11.0625acres		= 2.38 acres
	Therefore daily water requirement for sweeping of roads	= 2.38 x 5000	= 11900.00 litres = 11.90KL
	Total daily requirement		
	a. For domestic use (1+2)	= 465.00+45.00	= 510.00 KL
	b. Under parks & roads (3+4)	= 21.00+11.90	= 32.90 KL
	Assuming requirement for flushing as 1/3 of total domestic demand and therefore daily requirement for flushing		= 1/3 X 510.00 = 170.00 KL
	Daily requirement of potable drinking water supply = 510.00 – 170.00		= 340.00 KL

11.0625 ACRES RESIDENTIAL PLOTTED COLONY

SECTOR -36 SOHNA

TUBEWELL

Assuming working hours of tube well	= 16
Assuming discharge/hour of each tube well	= 20000 lit/hour
Total domestic demand (DRINKING)	= 340.00 KL
No. of tubewells required for drinking water supply	= 340.00 = 1.06 20X16
No. of tube wells Required for Total demand = (510.00+32.90) / 20 x 16	= 1.69
~~Add 10% stand by~~	~~= 0.17~~
Total no of tubewells required = 1.69 + 0.17	= 1.86 nos. = 2 nos
Say	

So it is proposed to provide 1 Nos of tube wells at present. Therefore provision for installation of 1 no. tube well has been made in the estimate. More tube wells will be installed when required. Moreover the requirement of flushing water supply is to met from treated water from S.T.P. and ultimately water is to be supplied by HUDA

Pumping machinery for tube wells

Gross working load		= 45.00 m
Average fall in is S.L.		= 3.00 m
Depression head		= 9.00 m
Friction Loss		= 3.00m
Total		= 60.00 m
B.H.P. = 20000 x 60 / 60x60x75x0.6	With 60% efficiency	= 7.40
	Say	= 8.50

Boosting Machinery (Drinking water)

Daily requirement for domestic use (Drinking)		= 340.00 KLD
Assuming 8 hours running 1 pump (with one stand by) discharge/hour.	= 340.00 / 8	= 42.50 KL/HR = 708.33 ltr/m
say		= 720.00 ltr/m

Head of Pump

i)	Suction Lift	4m
ii)	Friction Loss in main & specials	4m
iii)	Clear Head	27m
		35m
say		40m

B.H.P. of Motor	720.00 x 40 / 60x75x0.6	= 10.66
	Say	12.50 ~~12.00~~ H.P.

Underground Storage Tank (Drinking water supply)

Daily requirement for domestic use including institutional demand		= 340.00 KL
Capacity of under ground tank taking storage (25 + 33 = 58%) say 60% of daily demand	= 340 x 0.6	= 204.00 KL
Demand for	Say	= 200.00 KL
Fire fighting 100√P	= 100√2.66	1/3 = ~~266.00~~ KL
1/3 demand = 1/3 x 266.00		55 = 89.00 KL
	Say	= 100.00 KL

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Hence it is proposed to provide underground tank of capacity 300 KL which also includes 100 KL capacity for firefighting as well.

This tank will have two compartments, one for fire and the other for domestic use. The water first enters the fire compartment then over flows to the domestic use compartment so that the water in the fire compartment shall remain fresh.

BOOSTING MACHINERY(Flushing water supply)

Daily requirement for domestic use (flushing)		= 170.00 KL
Add for horticulture and roads		= 32.90 KL
TOTAL		= 202.90 KL
Assuming 8 hours running 1 pumps (with one stand by)		
Discharge/hour	$= \frac{202.90}{8}$	= 25.36 KL
Discharge/minute		= 422.70 liter/m
	say	= 425.00 liter/m

HEAD OF PUMP

i)	Suction lift	= 4 M
ii)	Friction Loss in main & specials	= 4 M
iii)	Clear head	= 27 M
TOTAL		= 35 M
SAY		= 40 M
B.H.P. of Motor	$= \frac{425 \times 40.00}{60X75X0.6}$	= 6.28
	say	= 7.5 HP ~~7.00~~

UNDERGROUND STORAGE TANK(Flushing water supply)

Daily requirement for flushing including horticulture = 202.90 KL

Capacity of underground tank taking 8 hours storage = 121.74 KL
- (25 + 33=58 %)
= 202.90 x 0.6

= 125.00 KL

SAY = 125.00 KL

DIESEL GENERATING SET(BOOSTING MACHINERY

Pumping sets 1 Nos. 10.00 H.P. each Drinking water = 12.00 H.P.

Pumping sets 1 Nos. 7.00 H.P. each Recycle water = 7.00 H.P.

Lightening etc = 2.00 H.P.

= 21.00 H.P.

24.62

Or 21 x 0.746 x 1.50 = 23.49KVA

Add 10 % extra = 2.35

= 25.84 27.08

SAY = 27.50 KVA

30.0

DIESEL GENERATING SET FOR TUBE WELL

Capacity of Diesel gen set = 8.5x 0.746 x 1.5 x1.10 = 10.46KVA

OVER HEAD SERVICE RESERVIOR

There is no necessity of O.H.S.R. as the capacity of U.G.S.T. has been increased from 33 % to 60% which includes 25 % capacity of O.H.S.R. of daily requirement

Capacity of S.T.P.

Capacity of S.T.P. = 0.75 X 510.00 = 382.50 KLD

SAY = 400.00KLD

= 0.40 MLD

11.0625 ACRES RESIDENTIAL PLOTTED COLONY

SECTOR -36 SOHNA

FINAL ABSTRACT OF COST

		Amount (Rs. In Lacs)
Sub Work No. I	Water Supply	Rs. ~~158.80~~ 157.20
Sub Work No. II	Sewerage	Rs. 110.00
Sub Work No. III	Storm Water Drainage	Rs. 105.10
Sub Work No. IV	Road and Footpath	Rs. ~~266.20~~ 258.60
Sub Work No. V	Street Lighting	Rs. 42.40
Sub Work No. VI	Horticulture Work	Rs. 7.10
Sub Work No. VII	Maintenance Charges for 10 years i/c resurfacing of roads after 1st 5 years and 2nd 5 years	Rs. 332.40
	Total	Rs. ~~102.60~~ 1014.31

Say Rs 1014.31 lacs

Dev. Cost Rs $\frac{1014.31 \text{ lacs}}{11.0625 \text{ Acres}}$ = 91.68 lacs

Checked subject to comments in forwarding letter No. 190693 Dt. 23.10.2019 and notes attached with the estimate

Superintending Engineer (HQ)
for Chief Engineer / HSVP
Panchkula

22/10/19

Executive Engineer
HSVP Division No. VI
Gurugram

Superintending Engineer
HSVP Circle-II, Gurugram

C/S

Addl. Chief Engineer
HSVP, Gurugram

Director
Town & Country Planning
Haryana, Chandigarh

[Pick the date]

FINAL ABSTRACT OF COST (WATER SUPPLY)

	Amount (Rs in Lacs)
Sub Head No. 1 Head Works	58.14 ~~58.30~~
Sub Head No. 2 Pumping Machinery	33.0 ~~36.10~~
Sub Head No. 3 Distribution System (Drinking)	37.76 ~~37.50~~
Sub Head No. 4 Distribution System (Flushing) Irigation	28.72 ~~26.90~~ ~~158.80~~ 157.62
Total	~~181.40~~

Sub Work-I

Sub Head No. 1 — **Water Supply**

Head Works Rs (Lacs.)

1. Boring and installing 200 i/d tubewells with reserve/ direct rotary rig complete with pipe strainer to a depth of about 150m complete.

   1 Nos. @ 0.00 Lacs each — 0.00

2. Constructing pump chambers as per standar design of PWD PH/HUDA of size 1.25 x1.25 x1.25 m Housing T-W

   1 Nos. @ 4.00 Lacs each — 1.00

3. Construction of boundary wall around the Tubewell site

   Water Works 1 No. @ Rs 1.00 lac — 1.00

   Tube wells 1 Nos. @ Rs 1.00 — 1.00

4. Provision of footpath hedges and lawns at tubewell 1 Nos.

   (L.S.) — 1.00

5. Construction of boosting chambers of suitable size along with under ground tank of capacity 525 KL pumping machinery and generating set etc. complete in all respects.

   Details of boosting station

   i) Construction of boosting chamber — 3.00

   ii) U.G. tank 425 KL capacity incl 100 KL For fire fighting in two compartments And(125 KL for flushing @ RS 425/KL = 4000x425 3500 — ~~17.00~~ 14.88

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6.	Provision for staff quarters for Maintenance/ store		
	i) 1 No 350 sft @ Rs ~~6.00~~ Lac	~~6.00~~ lac	~~5~~.00
7.	Prov. for carriage of material (L.S.)	1.00 lac	1.00
	P.E. & contingency charges @ 3%		~~38.00~~ 37.88 1.14
			~~39.~~
	Department escalation unforeseen and administrator charges @ 49%		19.18
		Total	~~**58.32**~~ 58.14
		Say	~~**58.30**~~

C.O to final abstract of cost

[Pick the date]

Sub Work I	Water Supply
Sub Head No. 2	Pumping Machinery
	Amount (Rs.) (in Lacs)

1.	Providing and installing electricity driven electro or submersible pumping sets capable of delivering about 20.00KL water per hour against a total head of 60 M complete with motor and other accessories (8.50 B.H.P.)	
	1 Nos. @ Rs 3.00 lac each	2.00
2.	Provision for diesel engine genset stand by arrangement for tubewells (12KVA) (L.S.)	2.00
3.	Provision for cheap pressure type chlorination plant complete	1.00
	1 Nos. @ Rs 1,00,000/-	
4.	Provision for making foundations and erection of pumping machinery (L.S.)	2.00
5.	Provision for pipes, valves, and specials inside the pump chamber	2.00
6.	Provision for electric services connection including electric transformer and fittings for tubewells chambers complete including transformers L.S.	2.50
7.	Providing and installing centrifugal boosting pumping sets, capable of delivering water at 40 M head complete in all respects (2X12+2X7.00=38H.P.) domestic & flushing	
	4 Sets @ Rs 1.50 lac each	6.00
8.	Providing Gen set 27.50 KVA (L.S)	3.00

[Pick the date]

9.	Provision for carriage for materials and other unforeseen items L.S.	1.00
	Total	23.50
	P.E. & contingency charges @ 3%	0.60
		~~24.20~~ 23.15
	Department escalation unforeseen and administrator charges @ 49%	~~10.86~~
	Total	~~36.06~~ 33.95
	say	~~**36.10**~~

C.O to final abstract of cost

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11.0625 ACRES RESIDENTIAL PLOTTED COLONY

SECTOR -36 SOHNA

SUB WORK NO. I — **WATER SUPPLY**

SUB HEAD NO. 3 — **DISTRIBUTION SYSTEM/RISING MAIN**

		Amount (Rs in lacs)
1.	Providing, laying, jointing and testing C.I/D.I K9 Pipes including cost of excavation complete as per specifications.	
	100 mm dia i/d 630 mtrs @ Rs. 1250/- mtr	7.87
	150 mm dia i/d 600mtrs @ Rs. 1575/- mtr	9.45
2.	Providing and fixing sluice valve including cost brick masonry chambers complete in all respect.	
	100 mm dia i/d 2Nos. @ Rs. 12000/- each	0.24
	150 mm dia i/d 3 Nos. @ Rs. 15000/- each	0.45
3.	Providing and fixing air valves and scour valves or scour taps including cost of brick masonry chamber	
	4 Nos. @ Rs. 10,000/- each	0.40
4.	Providing and fixing fire hydrants complete with masonry chambers	
	4 Nos. @ Rs. 10,000/- each	0.40
5.	Providing and fixing indicator plates for sluice valve, air valve etc.	
	13Nos. @ Rs. 1000/- each	0.13
6.	Provision for rising main D.N. 150mm from main HUDA (DI) water line to U.G.S.T. 20 mtrs @ Rs. 1250/- mtr	4.41 lacs ~~0.25~~
7.	Provision for D.N. 150mm D.I. rising main from tube well to U.G.S.T. 260mtrs @ Rs. 1575/- mtr	~~3.25~~ 0.25

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8.	Providing for carriage of material L.S.	1.00
		24.66
	Add P.E. & Contingency charges @ 3%	0.71
		25.34
		25.17
	Department escalation unforeseen and administrator charges @ 49%	12.42 12.33
		37.76
	Total	37.50
	Say:	37.50

[Pick the date]

Sub Work No. I

Sub Head No. 4

Water Supply
Flushing and Irrigation

		Amount (Rs. In Lacs)
1	Providing, laying, jointing and testing DI pipe K-9 pipes including cost of excavation etc. complete in all respect.	
a)	80mm dia C.I./D.I. 680m @ Rs. ~~1000/-~~ M 1255 mtr @ ₹ 1250/-	~~6.80~~ 15.69 la
b)	100mm dia C.I./D.I. 620 m @ Rs. 1250/- M	~~7.75~~
c)		
2	Providing and fixing sluice valves including cost of brick masonry chambers complete in all respect.	
a)	100mm dia 3nos. @ Rs. 12000/- each	~~0.36~~ 0.60 la
b)	80mm dia 2nos. @ Rs. 10000/- each 5	~~0.20~~
3.	Providing and fixing air valves and scour Valves or scour taps including cost of brick masonry chambers 8 nos. @ Rs. 10000/- each	0.80
4.	Providing and fixing indicating plates for sluice Valves, air valves etc. 13 nos. @ Rs. 1000/- each	0.13
5	Provision for carriage of material and other unforeseen items. irrigation dry drains etc.	1.50
		18.72
	Total	~~17.54~~
	Add 3% contingencies & P.E. charges	0.53
		~~18.07~~ 19.28
	Add 4% deptt. price escalation Work charged, Admn Charges	9.44
		28.72 la

Add 49% departmental, escalation, adm. and unforeseen charges.	8.85
Total	**26.92**
say	**26.90**

11.0625 ACRES RESIDENTIAL PLOTTED COLONY

SECTOR -36 SOHNA

SUB WORK II **SEWERAGE SCHEME**

Amount (Rs. In Lacs)

1.	Providing, lowering, cutting, salt glazed stoneware pipes and specials into trenches including cost of excavation, bed concrete, cost of manholes complete in all respect.	
	200 mm i/d	
	Av. Depth upto 2 M – 855M @ Rs. 1250- per M	10.69
	200 mm i/d	
	Av. Depth upto 3 M – 235M @ Rs. 4100- per M	~~3.29~~ 3.53
	200 mm i/d	
	Av. Depth upto 4 M – 160M @ Rs. 1600- per M	
2.	Provision for providing oblique junctions (L.S.)	2.56
3.	Provision for providing and fixing vent shafts at suitable places as per PH requirement (L.S.)	2.00
4.	Provision of temporary disposal arrangement till HUDA sewer laid (including cost of STP capacity 0.40MLD) and over flow pipe upto main HUDA sewer	50.00
5.	Provision of temporary timbering etc.	1.00
6.	Provision for cutting of roads and carriage of materials etc. and other unforeseen charges (L.S.)	1.50
7.	Provision for connection with HUDA main (L.S.)	1.00
	Total	72.94
	P.E. & Contingency charges @ 3%	2.16
		~~74.20~~ 74.44
	Department escalation unforeseen and administrator charges @ 49%	~~36.36~~ 36.48
	Total	~~110.56~~ 110.92
	Say:	**~~110.60~~** 110.92

11.0625 ACRES RESIDENTIAL PLOTTED COLONY
SECTOR -36 SOHNA

SUB WORK – III **STORM WATER DRAINAGE**

		Amount (Rs. In Lacs)
1.	Providing, laying RCC pipes drain class NP – 3 with cement joint, manholes, excavation etc. complete in all respect 400 mm i/d Av. Depth upto 2.0 m – 1200M @ Rs. 2500/- per M	30.00
2.	Provision for road gullies with 300 mm dia pipe connection L.S.	3.00
3.	Provision for lighting, watching and temporary diversion of traffic	2.00
4.	Provision for cutting of roads and carriage of materials etc. and other unforeseen items L.S.	2.00
5.	Provision for temporary arrangement of recharge pit at selected place.	20.00
6.	Provision for connection with HUDA on master line	1.00
7.	Provision for timbering and shoring	0.50
8.	Provision for temporary disposal arrangement Till HUDA services are provided (LS)	10.00
	TOTAL	68.50

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P.E. & contingency charges @ 3%		2.06
	Total	70.56
Department escalation unforeseen and administrator charges @ 49%		34.57
	Total	105.13
	say	105.10

11.0625 ACRES RESIDENTIAL PLOTTED COLONY
SECTOR -36 SOHNA

Sub Work No. IV **Road Work**

Item No.	Description of Item	Unit	Qty.	Rate (Rs)	Amount (Rs in lacs)
1	**Site Clearance**				
1.1	Clearing and grubbing road land including uprooting rank, vegetation, grass, bushes, shrubs, saplings and trees girth upto 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable materials to be used or auctioned, upto a lead of 1000mm including removal and disposal of top soil not exceeding 150 mm thickness by manual means in areas of light jungle as per drawings and Clause 201 of Morth Specifications.	Hectare	1.66	50000	0.83
2	**Earth Works**				
2.1	Provision for leveling + earth filling as per site condition approximate	Acre	11.0625	1,50,000	16.59
3	**Provision for**				
i.	300mm GSB				
ii.	250mm thick stone aggregate				
iii.	50mm thick B.M.				
iv.	20mm thick MSS				
	Total	Sqm	9900	1200/-	118.80
4	**Miscellaneous Items**				
4.1	Construction of cement concrete Kerb and Channels as per specifications	Meter	3100	600/-	18.60
4.2	Construction of footpaths as per specification on 24 m wide road 2x1.50x150 =450	Sqm	450	600/-	2.70

[Pick the date]

4.3	Providing and fixing guide maps at selected locations (L.S.)				1.00
4.4	Provision for plot indicators (L.S.)				1.00
4.5	Provision for demarcating burgies (L.S.)				1.00
4.6	Provision for traffic arrangement				2.00
4.7	Provision for carriage of material (L.S.)				1.00
4.8	Construction of pavement in shopping area 1:1½:3 1-5-50% of the area	sqm	830 3mm	1200/-	~~9.96~~ 4.98
	1660·80/-				~~173.48~~ 168.30
	Add 3% contingency & P.E. charges				~~5.20~~ 5.06
	Total				~~178.68~~ 173.56
	Department escalation unforeseen and administrator charges @ 49%				~~87.55~~ 25.04
	Total				~~266.23~~ 252.60
	Say				266.20

SUB WORK – V

11.0625 ACRES RESIDENTIAL PLOTTED COLONY SECTOR -36 SOHNA

Street Lighting

		Amount (Rs. in lacs)
Providing street lighting on internal Roads as per standard specification in 10.84 acre area @ Rs. 2,50,000/- per acre		= 27.66
11.0625 x 2,50,000/-		= 0.83
Add 3% contingencies & P.E. charges		= 28.49
Add Department escalation unforeseen and administrator charges @ 49%		= 13.96
	Total	= 42.45
	Say	Rs = 42.45 lacs

C/O to final abstract of cost

11.0625 ACRES RESIDENTIAL PLOTTED COLONY
SECTOR -36 SOHNA

SUB WORK – VI		**COST ESTIMATE**

HORTICULTURE

AMOUNT (RS. IN LACS)

1	**Development of Lawn area**	
	a) Trenching the ordinary soil up to 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 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 rows 7.50 cm in either direction including for hedges and grill and barbed wire fencing around park and green belts (as per HUDA Norms) Area 0.837 Acres @ Rs. 1,50,000/- per acre	1.26
2	**Planting of trees with tree guards on Roads at 40' intervals**	
	Total length of roads = 1550.00mtr	
	No. of trees @ 12 m c/c = 1550x 2 / 12 = 257 Nos.	
	Say = 260 Nos	
	Cost of the tree	
	Excavation Rs. 60/-	
	Manure Rs. 90/-	
	Tree plants Rs. 150/-	
	Tree guards Rs. 1000/-	
	1300	
	Total = 1300x 260	3.38
	TOTAL	4.64
	Add 3 % contingencies and P.E charges	0.14
	Add 45% depth, price escalation, unforeseen Action	**4.78**
		2.15
		7.12

27

Add 49% departmental charges, price escalation , unforeseen and Adm charges	2.34
TOTAL	**7.12**
SAY	**7.10**

SUB – WORK NO VII

MAINTENANCE CHARGES AND RESRURFACING OF ROADS

Amount (Rs. in lacs)

2nd phase after 5 yrs of 1st phase

1. Provision for maintenance charges for water supply, sewerage, storm water drainage, roads, streetlights, horticulture etc. complete including operation and establishment charges as per HUDA norma after completion and resurfacing of roads after 10 years.

   11.0625 acres@ Rs. 7.50 lacs per acre = 82.97

2. Provision for resurfacing of roads after 1st 5 years of maintenance i.e. 100mm thick B.M. and 25mm premix carpet with mechanical paver

   9900 sqm @ Rs 600/- Per Sqm = 59.40

3. Resurfacing of road after 10 years of maintenance by providing 25 mm thick premix carpet with seal coat with mechanical paver

   9900 sqm @ Rs 750/- Per Sqm = 74.25

TOTAL	= 216.62
Add 3% PE and contingency charges	= 6.50
	= 223.12
Add 49% Departmental charges, price escalation unforeseen and administrator charges.	= 109.33
Total	= 332.45
Say	**= 332.40**

HYDRAULIC DESIGN STATEMENT OF WATER SUPPLY

Providing Water Supply Scheme11.0625ACRES RESIDENTIAL PLOTTED COLONY IN SECTOR 36, SOHNA

Sr. No.	Name of Pipe Line	Residential plots		Population @13.5 or 9 persons per plot	Water requirement @ 155 l/head /day in KLD	Water requirement for non residential plots				Gross requirement in KLPD	Gross water requirement in gallons per day (Total)
		As per plan	Total			Plots area in acres	Type of building	Basis of water requirement	Total water requirement		
1	2	3	4	5	6	7	8	9	10	11	12
1	RA	-		-	-	-	-	-	-	-	-
2	AB	-		-	-	-	-	-	-	-	-
3	BB1	-		-	-	0.41	Commercial	32KL/ Acer	13.12	13.12	2870
4	BC	3		40.5	4.65	-	-	-	-	4.65	1020
5	CC1	10		135	15.52	-	-	-	-	15.52	3410
6	CD	6		81	9.31	-	-	-	-	9.31	2050
7	DD1	6		81	9.31	-	-	-	-	9.31	2050
8	DE	8		108	-	-	-	-	-	12.42	2720
9	EE1	6		81	9.31	-	-	-	-	9.31	2050
10	E1E2	20		270	31.05	-	-	-	-	31.05	6830

HYDRAULIC DESIGN STATEMENT OF WATER SUPPLY

Providing Water Supply Scheme11.0625ACRES RESIDENTIAL PLOTTED COLONY IN SECTOR 36, SOHNA

Sr. No.	Name of Pipe Line	Residential plots		Population @13.5 or 9 persons per plot	Water requirement @ 155 l/head /day in KLD	Water requirement for non residential plots				Gross requirement in KLPD	Gross water requirement in gallons per day (Total)
		As per plan	Total			Plots area in acres	Type of building	Basis of water requirement	Total water requirement		
1	2	3	4	5	6	7	8	9	10	11	12
11	E1E3	4		54	6.21	-	-	-	-	6.21	1370
12	EF	14		189	21.73	-	-	-	-	21.73	4780
13	FG	6		81	9.31	-	-	-	-	9.31	2050
14	GG1	2		324	37.26	-	-	-	-	37.26	8200
15	GH	9		121.5	13.97	-	-	-	-	13.97	3070
16	HH1	24		324	37.26	-	-	-	-	37.26	8200
17	HI	7		94.5	10.86	-	-	-	-	10.86	2390
18	II1	12		162	18.63	-	-	-	-	18.63	4100
19	IJ	7		94.5	10.86	-	-	-	-	10.86	2390
20	JJ1	24		324	37.26	-	-	-	-	37.26	8200
21	JK	7		94.5	10.86	1.11	Community	25KL/Acre	27.72	38.58	8490

DESIGN STATEMENT

Providing Water Supply Scheme 11.0625ACRES RESIDENTIAL PLOTTED COLONY IN SECTOR 36, SOHNA

S. No	Name of line	Water load in gallons per day			3 times water load in gallons per day	Designed water load in gallons per day	Size in mm	Length in m	Head loss per 1000m	Head loss in pipe line in m	Hydraulic levels in mtr		R.L. at L/E in mtr	Terminal head at L/E in m
		Self	Branch	Total							U/E	L/E		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	RA	-	76240	76240	228720	317000.00	150	20.00	10.14	0.20	247.40	247.20	210.92	36.25
2	AB	-	76240	76240	228720	317000.00	150	25.00	10.14	0.25	247.20	246.95	210.94	36.01
3	BB1	2870	-	2870	8610	24000.00	100	55.00	0.62	0.03	246.95	246.92	210.97	35.95
4	BC	1020	72350	73370	220110	317000.00	150	60.00	10.14	0.61	246.95	246.34	210.92	35.42
5	CC1	3410	-	3410	10230	24000.00	100	60.00	0.62	0.04	246.34	246.30	210.95	35.33
6	CD	2050	66890	68940	206820	283000.00	150	50.00	8.27	0.41	246.34	245.93	210.90	35.03
7	DD1	2050	-	2050	6150	24000.00	100	60.00	0.62	0.04	245.93	245.89	210.93	34.96
8	DE	2720	62120	64840	194520	283000.00	150	90.00	8.27	0.74	245.93	245.19	210.87	34.32
9	EE1	2050	8200	10250	20750	42000.00	100	60.00	1.74	0.10	245.19	245.09	210.87	34.22
10	E1E2	6830	-	6830	20490	30000.00	100	65.00	0.94	0.06	245.09	245.03	210.91	34.12

DESIGN STATEMENT

Providing Water Supply Scheme 11.0625ACRES RESIDENTIAL PLOTTED COLONY IN SECTOR 36, SOHNA

S. No	Name of line	Water load in gallons per day			3 times water load in gallons per day	Designed water load in gallons per day	Size in mm	Length in m	Head loss per 1000m	Head loss in pipe line in m	Hydraulic levels in mtr		R.L. at L/E in mtr	Terminal head at L/E in m
		Self	Branch	Total							U/E	L/E		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
11	E1E3	-	-	1370.00	4110.00	24000.00	100	18.00	0.62	0.01	245.69	245.08	210.87	34.21
12	EF	4780.00	47090.00	51870.00	153610.00	217000.00	150	90.00	5.00	0.45	245.19	244.74	210.89	33.85
13	FG	2050.00	45040.00	47090.00	141270.00	217000.00	150	45.00	5.00	0.26	245.74	245.48	210.90	34.58
14	GG1	8200.00	-	8200.00	24600.00	33600.00	100	85.00	1.12	0.09	245.48	245.39	210.95	34.45
15	GH	3070.00	33770.00	36840.00	110620.00	167000.00	150	72.00	3.10	0.21	245.48	245.27	210.91	34.36
16	HH1	8200.00	-	8200.00	24600.00	33600.00	100	100.00	1.12	0.11	245.27	245.16	210.96	34.20
17	HI	2390.00	23180.00	25570.00	76710.00	117000.00	150	40.00	1.62	0.06	245.27	245.21	210.92	34.29
18	II1	4100.00	-	4100.00	12300.00	24000.00	100	40.00	0.62	0.02	245.21	245.19	210.96	34.23
19	IJ	2390.00	16690.00	19080.00	57240.00	83000.00	150	50.00	0.70	0.04	245.21	245.17	210.93	34.24
20	JJ1	8200.00	-	8200.00	24600.00	33600.00	100	75.00	1.12	0.08	245.17	245.09	210.98	34.21
21	JK	8490.00	-	8490.00	25470.00	58000.00	150	40.00	0.44	0.02	245.17	245.15	210.94	34.21

SCHEDULE OF QUANTITIES

Providing Water Supply Scheme 11.0625ACRES RESIDENTIAL PLOTTED COLONY IN SECTOR 36, SOHNA

Sr. No.	Name of Pipe Line	Pipe (length in M size in mm)					S.V. Qty. in Nos. Size in mm				
		100	150	200	250	300	100	150	200	250	300
1	2	3	4	5	6	7	8	9	10	11	12
1	RA	-	20.00					1			
2	AB	-	25								
3	BB1	55	-								
4	BC	-	60								
5	CC1	60	-								
6	CD	-	50								
7	DD1	60	-								
8	DE	-	90					1			
9	EE1	60	-								
10	E1E2	65	-								

SCHEDULE OF QUANTITIES

Providing Water Supply Scheme 11.0625ACRES RESIDENTIAL PLOTTED COLONY IN SECTOR 36, SOHNA

Sr. No.	Name of Pipe Line	Pipe (length in M size in mm)					S.V. Qty. in Nos. Size in mm				
		100	150	200	250	300	100	150	200	250	300
1	2	3	4	5	6	7	8	9	10	11	12
11	E1E3	18.00	-								
12	EF	-	90.00								
13	FG	-	45.00								
14	GG1	85.00	-								
15	GH	-	72.00					1			
16	HH1	100.00	-				1				
17	HI	-	40.00								
18	II1	40.00	-								
19	IJ	-	50.00								
20	JJ1	75.00	-								
21	JK	-	40.00								
	Total	**618.00**	**582.00**				**2**	**3**			
	Say	**630.00**	**600.00**				**3**	**3**			

Schedule of Quantities

PROVIDING FLUSHING CUM HORTICULTURE SCHEME 11.0625 ACRES RESIDENTIAL PLOTTED COLONY IN SECTOR 36, SOHNA

S.No.	Name of Line	Pipe length in m size in m	
		100mm	80mm
1	R'A'	20.00	
2	A'B'	55.00	
3	B'B1'		55.00
4	B'C'	50.00	
5	C'C1'		55.00
6	C'D'	45.00	
7	D'D1'		55.00
8	D'E'	75.00	
9	E'E1'		60.00
10	E1'E2'		90.00

Fax : 2564655
Website : www.hsvp.org.in
Email : cencrhsvp@ gmail.com

हरियाणा शहरी विकास प्राधिकरण
HARYANA SHEHRI
VIKAS PRADHIKARAN

Address: C-3, HSVP, HQ Sector-6
Panchkula

C.E.I-No.
Dated:

Annexure-A

SUB:- **Approval of Service Plan/Estimates for Affordable Residential Plotted Colony(Under Deen Dayal Jan Awas Yojna-2016)measuring 11.0625 acres area located at Village Dhunela Sec-36, Sohna Gurugram being developed by M/S. Signature Global Homes Pvt. Ltd.(License No. 39 of 2019 dated 1.3.2019).**

Technical note and comments:-

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

Fax : 2564655
Website : www.hsvp.org.in
Email : cencrhsvp@ gmail.com

हरियाणा शहरी विकास प्राधिकरण
HARYANA SHEHRI
VIKAS PRADHIKARAN

Address: C-3, HSVP, HQ Sector-6
Panchkula

C.E.-I No:

Dated:

7. Potability of water will be checked and confirmed and the tube-wells will be put into operation after getting chemical analysis of water tested.

8. Only C.I/D.I pipes will be used in water supply and flushing system, UPVC/HDPE pipe for irrigation purposes.

9. A minimum 100 i/d C.I/D.I, 200mm i/d SW and 400mm id RCC NP-3 pipes will be used for water supply, sewerage and storm water drainage respectively.

10. Standard X-section for S.W. pipes sewer, RCC pipes sewer etc. will be followed as are being adopted in Haryana Public Health Engineering Deptt.or HSVP.

11. The X-section, width of roads, will be followed as approved by the Chief Town Planner, Haryana, Chandigarh. The kerbs and channels will also be provided as per approved X-section and specifications.

12. The specifications for various roads will be followed as per IRC/MORTH specifications.

13. The wiring system of street lighting and specifications of street lighting fixture will be as per relevant standards.

14. This shall confirm to such other conditions as are incorporated in the approved estimate and the letter of approval.

Superintending Engineer (HQ),
For Chief Engineer-I, HSVP,
Panchkula.

Schedule of Quantities

PROVIDING FLUSHING CUM HORTICULTURE SCHEME 11.0625 ACRES RESIDENTIAL PLOTTED COLONY IN SECTOR 36, SOHNA

S.No.	Name of Line	Pipe length in m size in m	
		100mm	80mm
11	E1'E3'		25.00
12	E'F'	120.00	
13	F'G'	50.00	
14	G'G1'		85.00
15	G'H'	70.00	
16	H'H1'		110.00
17	H'I'	40.00	
18	I'I1'		50.00
19	I'J'	50.00	
20	J'J1'		85.00
21	J'K'	35.00	
	TOTAL	**610.00**	**670.00**
	SAY	**620.00**	**680.00**

STATEMENT FOR CALCULATION OF SEWAGE LOAD

PROVIDING SEWERAGE SCHEME 11.0625ACRES RESIDENTIAL PLOTTED COLONY IN SECTOR 36, SOHNA

S.No.	Name of Line	Water Requirement of plots			Demand of non residential areas			Total requirement in KLPD	Quantity of Sewage @ 75% of water requirement in cusecs.
		No. of Plots	Population @13.5 or 9 persons /plot	Water requirement @155 LPCD in KLPD	Nature of bdg	Basis of water requirement	Gross requirement in KLPD		
1	AB	6	81	13.97	COMMUNITY 1.109 Acre	25 KL /Acre	27.72	41.69	0.013
2	B1B	25	337.5	58.22	-	-	-	58.22	0.017
3	BC	6	81	13.97	-	-	-	13.97	0.004
4	C1C	13	175.5	30.27	-	-	-	30.27	0.009
5	CD	7	94.5	16.3	-	-	-	16.3	0.005
6	D1D	25	337.5	58.22	-	-	-	58.22	0.017
7	DE	9	121.5	20.96	-	-	-	20.96	0.006
8	E1E	24	324	55.89	-	-	-	55.89	0.017
9	EF	6	81	13.97	-	-	-	13.92	0.004
10	FG	14	189	32.6	-	-	-	32.6	0.01

STATEMENT FOR CALCULATION OF SEWAGE LOAD

PROVIDING SEWERAGE SCHEME11.0625ACRES RESIDENTIAL PLOTTED COLONY IN SECTOR 36, SOHNA

S.No.	Name of Line	Water Requirement of plots			Demand of non residential areas			Total requirement in KLPD	Quantity of Sewage @ 75% of water requirement in cusecs.
		No. of Plots	Population @13.5 or 9 persons /plot	Water requirement @155 LPCD in KLPD	Nature of bdg	Basis of water requirement	Gross requirement in KLPD		
11	G1G3	20	270	46.57	-	-	-	46.57	0.014
12	G2G3	4	54	9.31	-	-	-	9.31	0.003
13	G3G	6	81	13.97	-	-	-	13.97	0.004
14	GH	8	108	18.63	-	-	-	18.63	0.005
15	H1H	5	67.5	11.64	-	-	-	11.64	0.003
16	HI	6	81	13.97	-	-	-	13.97	0.004
17	I1I	10	135	23.29	-	-	-	23.29	0.007
18	IJ	3	40.5	6.99	-	-	-	6.99	0.002
19	J1J	-	-	-	Commercial 0.410Acre	32KL/ Acre	13.12	13.12	0.004
20	JK	-	-	-	-	-	-	-	-
21	K-STP	-	-	-	-	-	-	-	-

DESIGN STATEMENT

PROVIDING SEWERAGE SCHEME11.0625ACRES RESIDENTIAL PLOTTED COLONY IN SECTOR 36, SOHNA

S. No.	Name of Line	Sewage Load in cusecs			3 times sewage load in cusecs	Designed discharge in cusecs	Size in mm	Length in m	Slope 1 in	Velocity in m/sec	Fall in m	Formation level in m		Invert level in m		Depth in m		Avg depth in m
		Self	Branch	Total								U/E	L/E	U/E	L/E	U/E	L/E	
1	AB	0.013	-	0.013	0.039	0.43	200	35.00	220	0.76	0.16	210.94	210.93	210.00	209.84	0.94	1.09	1.02
2	B1B	0.017	-	0.017	0.051	0.43	200	85.00	220	0.76	0.39	210.98	210.93	210.00	209.61	0.98	1.32	1.15
3	BC	0.004	0.03	0.034	0.102	0.43	200	45.00	220	0.76	0.21	210.93	210.92	209.61	209.40	1.32	1.52	1.42
4	C1C	0.009	-	0.009	0.027	0.43	200	50.00	220	0.76	0.23	210.96	210.92	210.00	209.77	0.96	1.15	1.06
5	CD	0.005	0.043	0.048	0.014	0.43	200	45.00	220	0.76	0.21	210.92	210.92	209.40	209.19	1.52	1.73	1.63
6	D1D	0.017	-	0.017	0.051	0.43	200	100.00	220	0.76	0.45	210.96	210.92	210.00	209.55	0.96	1.37	1.17
7	DE	0.006	0.065	0.071	0.213	0.43	200	70.00	220	0.76	0.32	210.92	210.90	209.19	208.87	1.73	2.03	1.88
8	E1E	0.017	-	0.017	0.051	0.43	200	90.00	220	0.76	0.41	210.95	210.90	210.00	210.59	0.95	1.31	1.04
9	EF	0.004	0.088	0.092	0.276	0.43	200	40.00	220	0.76	0.19	210.90	210.89	208.87	208.68	2.03	2.21	2.12
10	FG	0.01	0.092	0.102	0.306	0.43	200	120.00	220	0.76	0.55	210.89	210.87	208.68	208.13	2.21	2.74	2.48

DESIGN STATEMENT

PROVIDING SEWERAGE SCHEME 11.0625ACRES RESIDENTIAL PLOTTED COLONY IN SECTOR 36, SOHNA

S. No.	Name of Line	Sewage Load in cusecs			3 times sewage load in cusecs	Designed discharge in cusecs	Size in mm	Length in m	Slope 1 in	Velocity in m/sec	Fall in m	Formation level in m		Invert level in m		Depth in m		Avg depth in m
		Self	Branch	Total								U/E	L/E	U/E	L/E	U/E	L/E	
11	G1G3	0.014	-	0.014	0.042	0.43	200	95.00	220	0.76	0.43	210.91	210.89	210.00	209.57	0.91	1.32	1.12
12	G2G3	0.003	-	0.003	0.009	0.43	200	15.00	220	0.76	0.07	210.89	210.89	210.00	209.93	0.89	0.96	0.93
13	G3G	0.004	0.017	0.021	0.063	0.43	200	60.00	220	0.76	0.27	210.89	210.87	209.57	209.30	1.32	1.57	1.45
14	GH	0.005	0.123	0.128	0.384	0.43	200	75.00	220	0.76	0.34	210.87	210.90	208.13	207.79	2.74	3.11	2.93
15	H1H	0.003	-	0.003	0.009	0.47	200	50.00	200	0.82	0.25	210.93	210.90	210.00	209.75	0.93	1.15	1.04
16	HI	0.004	0.131	0.0135	0.405	0.47	200	50.00	200	0.82	0.25	210.90	210.92	207.79	207.54	3.11	3.38	3.25
17	I1I	0.007	-	0.007	0.021	0.47	200	50.00	200	0.82	0.25	210.95	210.92	210.00	209.75	0.95	1.17	1.06
18	I	0.002	0.142	0.144	0.432	0.47	200	50.00	200	0.82	0.25	210.92	210.94	207.54	207.29	3.38	3.65	3.52
19	J1J	0.004	-	0.004	0.012	0.47	200	50.00	200	0.82	0.25	210.97	210.94	210.00	209.75	0.97	1.19	1.08
20	JK	-	0.148	0.148	0.444	0.47	200	40.00	200	0.82	0.20	210.94	210.95	210.29	207.09	3.65	3.86	3.76
21	K-STP	-	0.148	0.148	0.444	0.47	200	20.00	200	0.82	10.00	210.95	211.40	207.09	206.99	3.86	4.41	4.74

Schedule of Quantities of S.W. Pipes

PROVIDING SEWERAGE SCHEME 11.0625ACRES RESIDENTIAL PLOTTED COLONY IN SECTOR 36, SOHNA

S.No.	Name of Line	Dia of pipe in mm and Length in meters						
		200mm	250mm	300mm	350mm	400mm	450mm	500mm
1	AB	35.00						
2	BIB	85.00						
3	BC	45.00						
4	CIC	50.00						
5	CD	45.00						
6	DID	100.00						
7	DE	70.00						
8	EIE	90.00						
9	EF	40.00						
10	FG	120.00						

Schedule of Quantities of S.W. Pipes

PROVIDING SEWERAGE SCHEME 11.0625ACRES RESIDENTIAL PLOTTED COLONY IN SECTOR 36, SOHNA

S.No.	Name of Line	Dia of pipe in mm and Length in meters						
		200mm	250mm	300mm	350mm	400mm	450mm	500mm
11	G1G3	95.00						
12	G2G3	15.00						
13	G3G	60.00						
14	GH	75.00						
15	H1H	50.00						
16	HI	50.00						
17	III	50.00						
18	IJ	50.00						
19	J1J	50.00						
20	JK	40.00						
21	K-STP	20.00						
	TOTAL	**1235.00**						
	SAY	**1250.00**						

DESIGN STATEMENT

PROVIDING STORM WATER DRAINAGE SCHEME 11.0625ACRES RESIDENTIAL PLOTTED COLONY IN SECTOR 36, SOHNA

S. No.	Name of Line	Area in Acres			Discharge in cusecs@¼" rainfall intensity	Designed discharge in cusecs	Size in mm	Length in mtr	Slope 1 in	Velocity in m/sec	Fall in mtr	Formation Levels in mtr		Invert level in mtr		Depth in mtr		Avg depth in mtr
		Self	Branch	Total								U/E	L/E	U/E	L/E	U/E	L/E	
1	AB	0.3	-	0.3	0.08	3.52	400	90.00	560	0.77	0.16	210.90	210.94	209.90	209.74	1.00	1.20	1.10
2	BIB	0.85	-	0.85	0.21	3.52	400	55.00	560	0.77	0.1	210.97	210.94	210.00	209.90	1.00	1.04	1.02
3	BC	0.25	1.15	1.4	0.35	3.52	400	50.00	560	0.77	0.09	210.94	210.92	209.74	209.65	1.20	1.27	1.24
4	CIC	0.60	-	0.60	0.15	3.52	400	60.00	560	0.77	0.11	210.95	210.92	209.95	209.84	1.00	1.08	1.04
5	CD	0.37	2.00	2.37	0.6	3.52	400	50.00	560	0.77	0.09	210.92	210.90	209.65	209.56	1.27	1.34	1.31
6	DID	0.75	-	0.75	0.19	3.52	400	55.00	560	0.77	0.1	210.93	210.90	209.93	209.83	1.00	1.10	1.05
7	D-HUDA STORM	0.65	3.12	3.77	0.94	3.52	400	90.00	560	0.77	0.16	210.90	211.05	209.56	209.40	1.34	1.65	1.50
8	FG	0.27	-	0.27	0.07	3.52	400	35.00	560	0.77	0.06	210.94	210.93	209.94	209.88	1.00	1.05	1.03
9	GIG	0.9	-	0.90	0.23	3.52	400	80.00	560	0.77	0.14	210.98	210.93	209.98	209.84	1.00	1.09	1.05
10	GH	0.37	1.17	1.54	0.39	3.52	400	50.00	560	0.77	0.09	210.93	210.92	209.84	209.75	1.09	1.17	1.13

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S. No.	Name of Line	Area in Acres			Discharge in cusecs@¾'' rainfall intensity	Designed discharge in cusecs	Size in mm	Length in mtr	Slope 1 in	Velocity in m/sec	Fall in mtr	Formation Levels in mtr		Invert level in mtr		Depth in mtr		Avg depth in mtr
		Self	Branch	Total								U/E	L/E	U/E	L/E	U/E	L/E	
11	HIH	0.46	-	0.46	0.12	3.52	400	45.00	560	0.77	0.08	210.96	210.92	209.96	209.88	1.00	1.04	1.02
12	HI	0.37	2.00	2.37	0.59	3.52	400	40.00	560	0.77	0.07	210.92	210.91	209.75	209.68	1.17	1.23	1.20
13	III	87.00	-	0.87	0.22	3.52	400	100.00	560	0.77	0.18	210.96	210.91	209.96	209.78	1.00	1.13	1.07
14	IJ	0.82	3.24	4.06	1.02	3.52	400	75.00	560	0.77	0.13	210.94	210.90	209.68	209.55	1.23	1.35	1.29
15	JIJ	1.13	-	1.13	0.28	3.52	400	90.00	560	0.77	0.16	210.95	210.90	209.95	209.79	1.00	1.11	1.06
16	JK	0.37	5.19	5.56	1.39	3.52	400	45.00	560	0.77	0.08	210.90	210.89	209.55	209.47	1.35	1.42	1.38
17	K-HUDA STORM	0.65	5.56	6.21	1.55	3.52	400	100.00	560	0.77	0.18	210.89	211.05	209.47	209.29	1.42	1.76	1.59
18	L-HUDA STORM	0.70	-	0.70	1.17	3.52	400	70.00	560	0.77	0.14	210.95	211.07	209.95	209.81	1.00	1.14	1.07

Schedule of Quantities of R.C.C. Pipes

PROVIDING STORM WATER DRAINAGE SCHEME 11.0625ACRES RESIDENTIAL PLOTTED COLONY IN SECTOR 36, SOHNA

S.No.	Name of Line	Dia of pipe in mm and Length in meters					
		400mm	500mm	550mm	600mm	800mm	900mm
1	AB	90.00					
2	B1B	55.00					
3	BC	50.00					
4	C1C	60.00					
5	CD	50.00					
6	D1D	55.00					
7	D-HUDA STORM	90.00					
8	FG	35.00					
9	G1G	80.00					
10	GH	50.00					

Schedule of Quantities of R.C.C. Pipes

PROVIDING STORM WATER DRAINAGE SCHEME 11.0625ACRES RESIDENTIAL PLOTTED COLONY IN SECTOR 36, SOHNA

S.No.	Name of Line	Dia of pipe in mm and Length in meters					
		400mm	500mm	550mm	600mm	800mm	900mm
11	H1H	45.00					
12	HI	40.00					
13	I1I	100.00					
14	IJ	75.00					
15	J1J	90.00					
16	JK	45.00					
17	K-HUDA STORM	100.00					
18	L-HUDA STORM	70.00					
	TOTAL	**1180.00**					
	SAY	**1200.00**					

DESIGN DATA OF ROADS

11.0625ACRES RESIDENTIAL PLOTTED COLONY IN SECTOR 36, SOHNA

9.0 M WIDE ROAD

S.NO	Name of Road	Length in M
1	R1	240.00
2	R2	65.00
3	R3	45.00
4	R4	65.00
5	R5	70.00
6	R6	90.00
7	R7	90.00
8	R8	102.00
9	R9	90.00
10	R10	83.00
11	R11	330.00
	Total length of 9m wide roads	1250.00
	Add 10 % at curves	125.00
	TOTAL	1375.00
	SAY	1400.00

24 M WIDE ROAD

S.NO	Name of Road	Length in M	
1	R24	135.00	
	Add 10 % at curves	13.00	
	TOTAL	148.00	
	SAY	150.00	
	Metalled Area of Roads= 1400 M X 5.5 M + 150 X 14=	9800.00	SQ.M
	SAY	9900.00	SQ.M
	Total length of Roads = 1400.00+150.00	1550.00	M
	Length of kerbs = 1550X 2	3100.00	M