LC-2108

9.943 ACRES GROUP HOUSING COLONY IN SECTOR 26, REWARI

B.M. GUPTA DEVELOPERS PVT. LTD.

ESTIMATE FOR PROVIDING WATER SUPPLY, SEWERAGE, STORM WATER DRAINAGE, ROADS, STREET LIGHTING AND HORTICULTURE IN RESPECT OF 9.943 ACRES GROUP HOSING COLONY IN SECTOR 26, REWARI

CONSERVE WATER

INDEX

- AFFIDAVIT CUM UNDERTAKING -

M/s B. M. Gupta Developers Pvt. Ltd. Having its registered office at Room No.2, First Floor, 5948 & 5949, Basti Harphool Singh, Sadar Thana Road, Delhi – 110006 & local office at Elegant City, Sector-26, Garhi Bolni Road, Rewari – 123401 (Haryana) through its Authorized Signatory Sh. Ravi Shanker Gupta, solemnly affirm and declare as under:

The company shall make its own arrangement for water supply and disposal of Sewerage/SWD till arrangement of external services made by HSVP and if the bed level of internal Sewer/SWD not match/tally with the external services to be laid by HSVP later on and pumping is required for disposal of sewerage and SWD, our company will make own arrangement at own expenses in Group Housing Colony named "BMG Elegant Heights" area measuring 9.943 acres, Sector 26, Garhi Bolni Road, Rewari, the company will maintain the services as per license conditions.

Deponent

Verification: -

Verified that the contents of this affidavit cum- undertaking are true and correct to the best of my knowledge and belief and nothing has been concealed therein.

Place - Rewari

Date 06/11/2019

Deponent

ATTESTED

ROHITASH SINGH Advocate
Notary Public Rewari (Hry.)

PROJECT REPORT/ESTIMATE FOR PROVIDING WATER SUPPLY, SEWERAGE, STORM WATER DRAINAGE, ROADS, STREET LIGHTING AND HORTICULTURE IN RESPECT OF 9.943 ACRES GROUP HOUSING COLONY IN SECTOR 26 REWARI .

REPORT

The Haryana Government has prepared a master plan for development of Residential/Industrial / Commercial urban estate REWARI . M/S B.M GUPTA PVT. LTD. has decided to develop a part of the area in this master plan and has named this part as 9.943 Acres Group Housing colony . This scheme is located in sector –26 of REWARI. License has already been granted DGTCP license. No of 2009 dated 11.07.2009. 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 20000 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 obsolesce of the tubewells. The ultimate requirement of tubewells includes provisions of 10% stand by.

2 Design

The scheme has been designed for approved population of 2483 persons. The rate of water supply per head per day has been taken as 155.00 litres (135 + 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 engines / gen set engines for operation during failure of electricity.

4 Under Ground Storage

Provision has been made for 500 KL capacity 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 underground storage tank catering to the above requirement

6. Distribution System

The distribution system for this development has been designed to supply @ 155 litre 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 142.00 meters above G.L. so that it can serve the G.F + 27 floors construction envisaged in the plan. Minimum pipe dia for distribution is kept as 100 mm dia.

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.

7. 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.

Along with S.T.P. of capacity 0.60MLD. Treated Sewerage will be used for flushing purposes and Horticulture purpose. The over flow will be discharged into HUDA Sewerage system.

9. Storm water Drainage

The storm water drainage in being designed to carry 6.25 mm rainfall per hour for intramural and 3.125mm rainfall intensity for extramural sewers. Also suitable provision 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 6m wide. The following specifications have been adopted which are reproduced below.

(i) 200 mm GSB

(ii) 250 mm stone aggregate

(iii) 50 mm thick B.M

(iv) 25 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 ~~1229.~~1260.59Lacs.

The cost per gross acre for the phase works out to be Rs ~~123.63~~ 126.78 lacs which covers the provision of services like water supply, sewerage, storm water drainage, roads, street lighting and plantation including maintenance thereof as well as escalation, administrative departmental and unforeseen charges.

For B.M. Gupta Developers Pvt. Ltd.

Authorised Signatory

9.943 ACRES GROUP HOUSING COLONY
SECTOR -26 REWARI
DESIGN CALCULATIONS (BLOCK 1-9)

Daily Requirement

Total No. of Dwelling Units	= 420
Total No. of EWS Dwelling Units	= 79
Population per unit (general @5)	
Therefore population = 420 x5	= 2100 persons
Population per EWS unit @2 ~~5~~ 5	
Therefore population = 79 x2 ~~5~~ 5	= ~~158~~ 395 persons
Total population = 2100+~~158~~ 395	= ~~2258~~ 2495 persons
Water requirement for units @ ~~155~~ litres/head/day 2258 x ~~155~~	=~~349990~~ litres or ~~3499.90 KL~~ 349.90 KL
Provision for service personnel	= 45 units
Population @2 persons per dwelling unit = 45x2	= 90 persons
Total population including service personnel	= ~~2348~~ 2585 persons
Water requirement for dwelling units @ 155 litres/head/day ~~2348~~ 2585 x 155	=~~363940.00~~ 400675 litre =~~363.94 KL~~ 400.67 KL Say 400 KL

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

a.	No of commercials	= 1 No	
	Daily water requirement	@ 70 liter / head /per day	
	F.A.R Commercial	= 201.13 SQM	
	Therefore daily water requirement	= 201.13 x 70/10 SAY	= 1407.21 litres = 1.40 KL = ~~10.00 KL~~ 5 KL
b.	Community place F.A.R		= 467.23 SQM
	Area of community place		= 0.12 acres
	Daily water requirement @70litre/day= 467.23/10 x 70		= 3270.61 litres

		= 3.27 KL
SAY		
c) Add for swimming pool		= 10.00 KL
		= 25.00 KL
Total		**= 45.00 KL**
Say		**= 45.00 KL**

3. **Area under Parks**

Green Parks		
Therefore daily water requirement		=1.507 Acre
@ 25000 litre/Acre		=37675.00 Litres
= 1.507x 25000		= 37.67 KL

4. **Area under roads and surface parking** out of 9.943

		= 4.03 acres
Therefore daily water requirement	= 4.03 x 5000	= 20150.00 litres
for sweeping of roads		= 20.15KL
Total daily requirement		
a. For domestic use (1+2)	= 363.94+35.00	= 398.94 KL
b. Under parks & roads (3+4)	= 37.67+20.15	= 57.82 KL
Assuming requirement for flushing as 35% of total domestic demand and therefore daily requirement for flushing=0.35x398.26		= 0.35 X 398.26
		= 139.39 KL
SAY		= 140.00 KL
		= 258.87 KL
Daily requirement of potable drinking water supply		
= 39826 – 139.39		
SAY		**= 260.00 KL**

9.943 ACRES GROUP HOUSING COLONY
SECTOR -26 REWARI

TUBEWELL

Assuming working hours of tube well	= 16
Assuming discharge/hour of each tube well	= 20000 lit/hour
Total domestic demand (DRINKING)	= 260.00 KL
No. of tubewells required for drinking water supply	= 260.00 / 20 X16 = 0.81
No. of tube wells Required for Total demand	= (398.94+57.82) / 20 x 16 = 1.43 → 1.58
~~Add 10% stand by~~	~~= 0.14~~
Total no of tubewells required = ~~1.43 + 0.14~~	~~=1.58~~ nos. 1.54 = 2 No

SAY

So it is proposed to provide 1 Nos of tube wells at present.The provision of Installation of 1 No tube well has been made in this estimate More tube wells will be installed when required. Moreover the requirement of flushing water supply and irrigation 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		= 65.00 m
Average fall in is S.L.		= 3.00 m
Depression head		= 9.00 m
Friction Loss		= 3.00m
Total		= 80.00 m
B.H.P. = 20000 x 80 / 60x60x75x0.6	With 60% efficiency	= 9.80 B.H.P.
	Say	= 10.00 B.H.P

Boosting Machinery (Drinking water)

Daily requirement for domestic use (Drinking)

= 280 / 260.00 KLD

Assuming 8 hours running 2 pump (with one stand by) discharge/hour.

= 280 / 260.00 / 8X2

= 17.50 / 16.25 KL/HR

= 270.00 ltr/m

= 291.67

say

= 300.00 ltr/m

Head of Pump

i)	Suction Lift	4.00m
ii)	Friction Loss in main & specials	4.00m
iii)	Clear Head	78.00m
		86.00m
	say	90.00m

B.H.P. of Motor

$\frac{300 \times 90}{60 \times 75 \times 0.6}$ = 10.00

Say 10.00 H.P.

Underground Storage Tank (Drinking water supply)

Daily requirement for domestic use including institutional demand

= 280.0 / 260.00 KL

Capacity of under ground

= 280.0 / 260.00 x 0.5

= 140.0 / 130.00 KL

Say = 200.00 KL

Demand of Fire fighting $100\sqrt{P}$	$= 100\sqrt{2.39}$	$= 155.00$ KL
	Say	$= 200.00$ KL

Hence it is proposed to provide underground tank of capacity 400 KL which also includes 200 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)		$= 140.00$ KL
Add for horticulture and roads		$= 57.82$ KL
TOTAL		$= 197.82$ KL
Assuming 8 hours running 2 pumps (with one stand by)		
Discharge/hour	$= \frac{197.82}{8X2}$	$= 12.36$ KL
Discharge/minute		$= 206.06$ liter/m
	say	$= 290.00$ liter/m
HEAD OF PUMP		
i) Suction lift	$= 4.00$ M	
ii) Friction Loss in main & specials	$= 4.00$ M	
iii) Clear head	$= 78.00$ M	
TOTAL	$= 86.00$ M	
SAY	$= 90.00$ M	
B.H.P. of Motor	$= \frac{220\times90}{60X75X0.6}$	$= 7.33$
	say	$= 7.50$

UNDERGROUND STORAGE TANK(Flushing water supply)

Daily requirement for flushing including horticulture	= ~~197.82~~ KL 212.82
Capacity of underground tank taking 12/~~8~~ hours storage	= ~~98.91~~ KL 106.41
212.82 ~~197.82~~ X 0.5	
	= ~~100.00 KL~~
SAY	= ~~100.00~~ KL
	100.00

DIESEL GENERATING SET

Dom. Pumping sets 2Nos. 10.00B. H.P. each	= 20.00 B.H.P.
Pumping sets 2 Nos. 7 ~~5~~0B. H.P. each	= ~~10~~ 15.00 B.H.P.
Lightening etc	= 5.00 B.H.P.
	= ~~4~~0.00 H.P.

Capacity of diesel gen set	
~~4~~0 x 0.746 x 1.50	= ~~44.76~~KVA 44.76
Add 10 % extra	= ~~4.48~~ 4.48
	= ~~49.24~~ 49.24
SAY	= ~~5~~0.00 KVA
Capacity of genset for tubewell	= 11.19 KVA
= 10.00 x 0.746 x 1.5 x 1.10	
SAY	= 15.00 KVA

PUMPS FOR FIRE PROTECTION

Sr. No.	PARAMETERS	LOCATION	PUMP SETS		
			Jockey	Main	Diesel
a.	Discharge in lpm	Pump Room	180 lpm	2280 lpm	2280 lpm
b.	Head in meters		120	120	120

c.	HP		7.5	125	125
d.	Quantity in nos.		1	1	1

Capacity of S.T.P.

Capacity of S.T.P. = ~~0.75~~ 0.85 X ~~398.26~~ 435.0 = ~~298.69~~ 348.0 KLD

SAY = 400.KLD or 0.40 MLD

9.943 ACRES GROUP HOUSING COLONY
SECTOR -26 REWARI
DESIGN CALCULATIONS(BLOCK-10)

Daily Requirement

a	Total No. of Dwelling Units		= 27
	Population per unit @5		
	Therefore population = 27 x5		= 135 persons
	Water requirement for units @ 155 litres/head/day 135 x 155		=20925.00litres or 20.92 KL
	b) Add for swimming pool		= 4.00 KL
	Total daily requirement		
	c. For domestic use (1+2)	= 20.92+4.00	= 24.92 KL
	Assuming requirement for flushing as 35% of total domestic demand and therefore daily requirement for flushing		= 0.35 X 25.00 = 8.75 KL
	SAY		= 10.00 KL ~~= 16.25 KL~~
	Daily requirement of potable drinking water supply = 25.00 – 8.75		16.25 KL
	SAY		**= 20.00 KL**

9.943 ACRES GROUP HOUSING COLONY
SECTOR -26 REWARI

TUBEWELL

Assuming working hours of tube well	= 16
Assuming discharge/hour of each tube well	= 10000 lit/hour
Total domestic demand (DRINKING)	= 20.00 KL
No. of tubewells required for drinking water supply	= 20.00 / 10 X16 = 0.125
No. of tube wells Required for Total demand = (30+43.17) / 10 x 16	= 0.19
Add 10% stand by	= 0.02
Total no of tubewells required = 0.19 + 0.02	=0.21 nos.
SAY	= 1No

So it is proposed to provide 1 Nos of tube wells at present.The provision of Installation of 1 No tube well has been made in this estimate . Moreover the requirement of flushing water supply and irrigation 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	= 65.00 m
Average fall in is S.L.	= 3.00 m
Depression head	= 9.00 m
Friction Loss	= 3.00m
Total	= 80.00 m
B.H.P. = 10000 x 80 / 60x60x75x0.6 With 60% efficiency	= 4.93 B.H.P.
Say	= 5.00 B.H.P

Boosting Machinery (Drinking water)

Daily requirement for domestic use (Drinking)		= 20.00 KLD
Assuming 8 hours running 1 pump (with one stand by) discharge/hour.	= 20.00 / 8	= 2.5 KL/HR =41.66 ltr/m
say		= 50.00 ltr/m

Head of Pump

i)	Suction Lift	4.00m
ii)	Friction Loss in main & specials	4.00m
iii)	Clear Head	142.00m
		150.00m
	say	160.00m

B.H.P. of Motor	50 x 160 / 60x75x0.6	= 2.96
	Say	3.00 H.P.

Underground Storage Tank (Drinking water supply)

Daily requirement for domestic use including institutional demand		= 10.00 KL
Capacity of under ground	= 20.00 x 0.5	= 10.00 KL
	Say	= 20.00 KL

Demand of Fire fighting 100√P	= 100√.135	= 37.00 KL
	Say	= 300.00 KL

Hence it is proposed to provide underground tank of capacity 320KL which also includes 300 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)		= 10.00 KL
Add for horticulture and roads		= 2.5 KL
TOTAL		= 12.50 KL
Assuming 8 hours running 2 pumps (with one stand by)		
Discharge/hour	$= \frac{12.50}{8}$	= 1.56 KL
Discharge/minute		= ~~16.66~~ 26.04 liter/m
	say	= ~~20.00~~ 50 liter/m

HEAD OF PUMP

iv)	Suction lift	= 4.00 M
v)	Friction Loss in main & specials	= 4.00 M
vi)	Clear head	= 142.00 M
TOTAL		= 150.00 M
SAY		= 160.00 M
B.H.P. of Motor	$= \frac{50 \times 160}{60X75X0.6}$	= ~~1.13~~ 2.96
	say	= ~~1.25~~ 3.0 BHP

UNDERGROUND STORAGE TANK(Flushing water supply)

Daily requirement for flushing including horticulture = 12.50 KL

Capacity of underground tank taking 8 hours storage = 6.25 KL
12.50 X 0.5

= 20.00 KL

SAY

DIESEL GENERATING SET

Pumping sets 1Nos. 3.00B. H.P. each = 30.00 B.H.P.

Pumping sets 1Nos. 1.25B. H.P. each = 1.25 B.H.P.

Lightening etc = 0.75 B.H.P.

= 5.00 H.P.

Capacity of diesel gen set

5x 0.746 x 1.50 = 5.60KVA

Add 10 % extra = 0.56

= 6.16

SAY = 10.00 KVA

Capacity of genset for tubewell = 6.15 KVA

= 5 x 0.746 x 1.5 x 1.10

SAY = 7.50 KVA

PUMPS FOR FIRE PROTECTION

Sr. No.	PARAMETERS	LOCATION	PUMP SETS		
			Jockey	Main	Diesel
a.	Discharge in lpm	Pump Room	180 lpm	2280 lpm	2280 lpm
b.	Head in meters		120	120	120
c.	HP		7.5	125	125
d.	Quantity in nos.		1	1	1

[Pick the date]

Capacity of S.T.P.

Capacity of S.T.P. = 0.80 X 25 = 20.00 KLD

SAY = 20.KLD or 0.020 MLD

9.943 ACRES GROUP HOUSING COLONY
SECTOR -26 REWARI

FINAL ABSTRACT OF COST

		Amount (Rs. In Lacs)
Sub Work No. I	Water Supply	Rs. ~~303.50~~ 259.27 las
Sub Work No. II	Sewerage	Rs. ~~120.70~~ 102.05 las
Sub Work No. III	Storm Water Drainage	Rs. ~~55.90~~ 70.20 las
Sub Work No. IV	Road and Footpath	Rs. ~~277.40~~ 344.66 las
Sub Work No. V	Street Lighting	Rs. ~~15.30~~ 38.15
Sub Work No. VI	Horticulture Work	Rs. ~~5.40~~ 10.03
Sub Work No. VII	Maintenance Charges for 10 years i/c resurfacing of roads after 1st 5 years and 2nd 5 years	Rs. ~~451.10~~ 443.83 las
		& 1260.59 las
	Total	Rs. ~~1229.30~~ & 1260.59 las

Cost p. Acre = ~~1229.30~~ / 9.943 Acre = Rs ~~123.63~~ 126.78 lac p. Acre

For B.M. Gupta Developers Pvt. Ltd.

Authorised Signatory

Checked subject to comments in forwarding letter No. 204568 Dt. 15.11.2019.....and notes attached with the estimate

CHECKED

Executive Engineer
HSVP Division, Rewari

Superintending Engineer (HQ)
for Chief Engineer 1 HSVP
Panchkula

Addl. Chief Engineer
HSVP, Gurugram

[Pick the date]

FINAL ABSTRACT OF COST (WATER SUPPLY)

Amount (Rs in Lacs)

	BLOCK 1-9	BLOCK-10	TOTAL
Sub Head No. 1 Head Works	Rs. ~~61.50~~ 47.57	Rs ~~29.90~~ 33.60	Rs ~~91.40~~ 81.17
Sub Head No. 2 Pumping Machinery	~~65.20~~ 52.18	~~46.10~~ 51.40	Rs ~~111.30~~ 103.58
Sub Head No. 3 Distribution System (Drinking) & Rising main			Rs 19.13 lacs ~~22.00~~
Sub Head No. 4 Fire Ring Main			Rs 25.00 lacs ~~37.80~~
Sub Head No. 5 flushing system			~~14.80~~ Rs. 13.45 lacs
Sub Head No. 6 Irrigation			Rs 9.94 lacs ~~26.20~~

~~Total 303.50~~ Total Rs. Rs. 252.97 lacs

Block 1 to 9

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 120m complete along with machinery .

   1 Nos. @ ~~7,00000~~/- Lacs each — 10.00 ~~14.00~~

2. Constructing pump chambers as per standar design of PWD PH/HUDA of size 1. 5m x 1.55m x 1. 5m

   1 Nos. @ 1.00 Lacs each — 1.00

3. Construction of boosting chambers of suitable size along with under ground tank of capacity 500 KL pumping machinery and generating set etc. complete in all respects.

   Details of boosting station

   i) Construction of boosting chamber — ~~2~~.00
   ii) U.G. tank 500 KL capacity incl 200 KL For fire fighting in two compartments And 100 KL for flushing near S.T.P. 500KL @ RS 3500 /KL — ~~21.00~~ 17.50 las

4. Prov. for carriage of material (L.S.) — ~~1.00~~ 0.50

   ~~40.00~~ las

   31.00

   P.E. & contingency charges @ 3% — ~~1.20~~ 0.93 las

   las

   31.93 ~~41.20~~

   las

   Department escalation unforeseen and administrator charges @ 49% — 15.64 ~~20.19~~

   Total 47.57 ~~61.49~~

   Say ~~61.50~~

[Pick the date]

Sub Work I

Sub Head No. 2

Water Supply

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 1 Nos. @ Rs 2,00,000 lac each	2.00
2.	~~Provision for diesel engine genset stand by arrangement for tubewells (15KVA) (L.S.)~~ ~~1 Nos. @ Rs 1,50,000~~	~~1.50~~
3.	Provision for cheap pressure type chlorination plant complete 1 Nos. @ Rs 1,00,000/-	1.00
4.	Provision for making foundations and erection of pumping machinery (L.S.)	0.50
5.	Provision for pipes, valves, and specials inside the pump chamber (L.S.)	1.00
6.	Provision for electric services connection including electric transformer and fittings for tubewells chambers complete (L.S.)	2.50
7.	Providing and installing centrifugal boosting pumping sets, capable of delivering water at 300LPM and 250 LPM water at 90 M head complete in all respects domestic & flushing (3x10.00 H.P. + 3X 7.5 H.P= 52.50) 6 Sets @ Rs 1.00000 lac each	6.00

8.	Providing and fixing pumping sets of following capacity For fir protection 180 LPM @ 120 m head 1.50 2280LPM @ 120 m head 2 Nos 15.00 ~~180 LPM @ 120 m 1 No 2.50~~	16.50 ~~19.00~~
9.	Providing Gen set 80 KVA for Boosting machinery	~~8.50~~ 5.00
10.	Provision for carriage for materials and other unforeseen items L.S.	0.50
		34.00 lacs ~~42.50~~
	P.E. & contingency charges @ 3%	1.02
		~~43.77~~ 35.02
		~~21.44~~
	Department escalation unforeseen and administrator charges @ 49%	17.16
	TOTAL	52.18 ~~65.21~~
	SAY	~~65.20~~

Sub Work-I Block-10

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 120m complete along with machinery .
   1 Nos. @ ~~7,00000~~/- Lacs each (10.0m) — ~~7.00~~ (10.0m)

2. Constructing pump chambers as per standar design of PWD PH/HUDA of size 1. 5m x 1.55m x 1. 5m
   1 Nos. @ 1.00 Lacs each — 1.00

3. Construction of boosting chambers of suitable size along with under ground tank of capacity ~~600~~ 340 KL pumping machinery and generating set etc. complete in all respects.

   Details of boosting station

   i) Construction of boosting chamber — 2.00
   ii) U.G. tank 220KL capacity incl 200 KL For fire fighting in two compartments And 20 KL for flushing 240KL @ RS ~~340/KL~~ 3500/- KL — ~~8.50~~ 8.40 lacs

4. Prov. for carriage of material (L.S.) — ~~1.00~~ 0.50 lacs

   ~~19.50~~ 21.90

   P.E. & contingency charges @ 3% — 0.65 ~~0.58~~

   ~~20.08~~ 22.55 lacs

   Department escalation unforeseen and administrator charges @ 49% — 11.05 ~~9.84~~

   Total — ~~29.92~~ ~~33.75~~ lacs

   Say — ~~29.90~~ 33.60

[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 (5B.H.P.)

   1 Nos. @ Rs 2,00,000 lac each — 1.00

2. Provision for diesel engine genset stand by arrangement for tubewells (7.5KVA) (L.S.)

   ~~1 Nos. @ Rs 1,50,000~~ — ~~1.50~~ 0.50 5.0

3. Provision for cheap pressure type chlorination plant complete

   1 Nos. @ Rs 1,00,000/- — 1.00

4. Provision for making foundations and erection of pumping machinery (L.S.) — 0.50

5. Provision for pipes, valves, and specials inside the pump chamber (L.S.) — 1.00

6. Provision for electric services connection including electric transformer and fittings for tubewells chambers complete (L.S.) — 1.50

7. Providing and installing centrifugal boosting pumping sets, capable of delivering water at 50LPM and 20 LPM water at 160 M head complete in all respects domestic & flushing ~~2+3 H.P. + 2X 11.25 H.P= 8.50~~) 2(3.0+3) 18.0 HP

   ~~4~~ 2 Sets @ Rs 0.7500 lac each — ~~3.00~~ 1.50

8.	Providing and fixing pumping sets of following capacity For fir protection 180 LPM @ 120 m head 1.50 2280LPM @ 120 m head 2 Nos 15.00 ~~180 LPM @ 120 m 1 No 2.50~~	16.50 ~~19.00~~
9.	Providing Gen set 7.5KVA for Boosting machinery	5.00 ~~1.50~~
10.	Provision for carriage for materials and other unforeseen items L.S.	0.50
		33.50 ~~30.00~~ 1.00
	P.E. & contingency charges @ 3%	~~0.90~~ 34.50 16.90 ~~30.90~~
	Department escalation unforeseen and administrator charges @ 49%	~~15.14~~ 51.40
	TOTAL	~~46.04~~
	SAY	~~46.10~~

9.943 ACRES GROUP HOUSING COLONY
SECTOR -26 REWARI

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. K7 Pipes including cost of excavation complete as per specifications.	
	100 mm dia i/d 580mtrs @ Rs. ~~1200~~/- mtr	~~6.96~~
2.	Providing and fixing sluice valve including cost brick masonry chambers complete in all respect.	
	100 mm dia i/d 6 Nos. @ Rs. 12000/- each	~~0.72~~
3.	Providing and fixing air valves and scour valves or scour taps including cost of brick masonry chamber	
	4 Nos. @ Rs. 10000/- each	0.48
4.	Providing and fixing indicator plates for sluice valve, air valve etc.	~~0.10~~
	10 Nos. @ Rs. 1000/- each	
5.	Provision for rising main from main HUDA water line to U.G.S.T.	
	i)100mm i/d 50 mtrs @ Rs. ~~1200~~/- mtr	~~0.60~~
	ii)80mm i/d 80 mtrs @ Rs. ~~1000~~/- mtr	~~0.80~~
6.	Provision for rising main from tube well to U.G.S.T. i)100mm dia i/d240 mtrs @ Rs. 1200/- mtr	~~2.88~~
	ii)80mm i/d 40 mtrs @ Rs. 1000/- mtr	0.80
7	Providing for carriage of material L.S.	~~14.34~~
		~~10.76~~
	Add P.E. & Contingency charges @ 3%	~~0.43~~
		~~14.77~~
	Department escalation unforeseen and administrator charges @ 49%	~~7.24~~
	Total	~~22.01~~
	Say:	~~22.00~~

[Pick the date]

Sub Work No. 1

Sub Head No. IV

Fire Ring Main

Amount (Rs. in Lac)

1	Providing, laying, jointing and testing M.S./D.I. pipe for fire rising main including cost of fittings, valves, connection etc. complete in all respect.	
	i) 150mm M.S Pipe line ~~800~~ 1575 270 m @ Rs. ~~1500~~/- M	4.25 ~~18.00~~ ~~12.60~~
	ii) 80mm M.S Pipe line ~~125~~ 25 m @ Rs. 1000/- M	0.25 ~~1.25~~
2	Providing and fixing fire hydrant with accessories ~~20~~ 40 Nos. @ Rs. 10000/-	0.60 ~~2.00~~
3	Providing for carriage of material (L.S.)	0.05 ~~1.00~~ ~~0.25~~
4	Providing and fixing indicating plates	0.02
	~~20~~ 40 Nos. @ Rs. 1000/- Each	~~0.40~~
		5.17 16.30 ~~24.65~~
	Add 3% contingencies & P.E. charges	0.16 0.48 ~~0.74~~
		5.33 16.78 ~~25.39~~
	Add 49% departmental, escalation, adm. and unforeseen charges.	2.60 8.22 ~~12.44~~
		7.93 25.00 Lac ~~37.83~~
	TOTAL SAY	~~37.80~~

Sub Work No. I

Sub Head No. 4

Water Supply
Flushing

		Amount (Rs. in Lacs)
1	Providing, laying, jointing and testing DI pipe K-9 pipe Line conforming to IS:4985 specification including cost of excavation etc. complete in all respect.	
	a) ~~100mm dia 500m @ Rs. 1200/- M~~ 80 mm dia ~~80~~m @ Rs . 1000/- 30	~~6.00~~ ~~0.80~~ 0.30
2	Providing and fixing sluice valves including cost of brick masonry chambers complete in all respect.	
	a) ~~100mm dia 4nos. @ Rs. 12000/- each~~ 80mm dia 2nos . @ Rs. 10000/- each 1	~~0.48~~ ~~0.20~~ 0.10
3	Providing and fixing indicating plates ~~4~~ 1 nos. @ Rs. 1000/- each	~~0.04~~ 0.01
4	Provision for carriage of material and other unforeseen items.	0.10 ~~1.00~~ 0.50
5	Provision for cutting of roads and making good to its original condition . (L.S)	0.10 0.50
	Total	0.61 ~~8.73~~ ~~9.02~~
	Add 3% contingencies & P.E. charges	0.02 0.27
		0.63 ~~9.29~~ 9.03
	Add 49% departmental, escalation, adm. and unforeseen charges.	0.30 ~~4.55~~ 4.42
	Total	0.93 13.45 ~~14.84~~
	say	~~14.80~~

[Pick the date]

Sub Work No. I

Sub Head No. 4 **IRRIGATION**

		Amount (Rs. in Lacs)
1	Providing, laying, jointing and testing HUDA/VPVC pipe K-9 pipes including cost of excavation etc. complete in all respect.	
	a) [illegible] Rs. [illegible]/- M	
	b) 50mm dia 80m @ Rs . 500/- M 1020 m	~~0.40~~ 5.10
2	Providing and fixing sluice valves including cost of brick masonry chambers complete in all respect.	
	a) [illegible] Rs. [illegible] each	~~0.40~~
	b) 50mm dia 2nos. @ Rs ~~7350~~/- each	0.15
3	Providing and fixing air valves and scour valves or scour taps including cost of brick masonry chamber 4 Nos. @ Rs. 10000/- each	0.40
4	Providing and fixing 25 mm dia Irrigation hydrant valves complete in all respect 80 Nos @ Rs ~~1000~~ 3500/- each.	~~0.60~~ 2.70 las
5	Providing and fixing indicating plates for sluice Valves , air valves etc. 8 Nos. @ Rs. 1000/- each	0.08
6	Provision for carriage of material and other unforeseen items	~~0.50~~ 1.00 0.25
	Provision for cutting of roads and making good to its original	~~1.00~~

7 condition . (L.S)

Total	6.48
Add 3% contingencies & P.E. charges	0.19 lacs
total	6.67 ~~17.58~~
Add 49% departmental, escalation, adm. and unforeseen charges.	3.27 ~~8.61~~
	9.94
Total	~~26.19~~
~~say~~	~~26. 20~~

1,00 lacs

Block -10

9.943 ACRES GROUP HOUSING COLONY

SECTOR -26 REWARI

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.	
	i) 200 mm i/d	
	Av. Depth upto 3.00 M – ~~500~~ 30 M @ Rs. 1250- per M	0.38 ~~6.25~~
	ii) ~~250 mm i/d~~	~~4.42~~
	~~Av. Depth upto 4.00 M – 250M @ Rs. 1700- per M~~	~~4.25~~
2.	Provision for providing oblique junctions (L.S.)	0.10 ~~2.00~~
3.	Provision for providing and fixing vent shafts at suitable places as per PH requirement (L.S.)	0.25 ~~2.00~~
4.	Provision for making connection with HUDA main sewer line (L.S.) upto main HUDA sewer	1.00
5.	Provision of temporary timbering etc.	1.00
6.	Provision of S.T.P. of ~~420~~ 20 KLD capacity storage for treated sewage And including rising main from STP to flushing tank (L.S.) (400 KL + 20 KL) Two location.	2.50 ~~60.00~~ ~~50.00 lacs~~
7.	Provision for carriage of material etc. and other unforeseen charges. L.S	0.50 0.105 ~~1.00~~
8.	Provision for for cutting of roads and making good to its original condition.(LS)	0.50 ~~1.00~~
	Total	~~78.67~~ 66.50
	P.E. & Contingency charges @ 3%	~~2.36~~ 1.99
		~~81.03~~ 68.99
	Department escalation unforeseen and administrator charges @ 49%	39.70 33.56
	Total	120.73 ~~109.05 lacs~~
	Say:	~~120.70~~

[Pick the date]

9.943 ACRES GROUP HOUSING COLONY
SECTOR -26 REWARI

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	
	300 mm i/d Av. Depth upto 2.0 m – ~~200~~ 196 M @ Rs. ~~1~~500/- per M	~~3.00~~ 4.25 4.90
	400 mm i/d Av. Depth upto 2.0 m – ~~800~~ 780 M @ Rs. ~~1750~~ 2500/- per M	~~14.00~~ ~~19.50~~
2.	Provision for road gullies with 300 mm dia pipe connection L.S.	~~1.00~~ 3.00 0.50
3.	Provision for lighting, watching and temporary diversion of traffic	~~1.00~~ 0.10
4.	Provision for cutting of roads and carriage of materials etc. and other unforeseen items L.S.	~~1.00~~ 2.00
5.	Provision for recharge pit at selected place. (L.S)	~~9.94~~ 10.00 2.50
6.	Provision for connection with HSVP on master line	1.00
7.	Provision for timbering and shoring	~~0.50~~ 1.00 0.10
8.	Providing for temporary disposal arrangement Till HUDA services are provided (LS)	~~3.00~~ 5.00 1.00
	Total	36.44 45.75

[Pick the date]

P.E. & contingency charges @ 3%	~~1.09~~ 1.37 lacs		10.30
			0.31
Total	~~37.53~~ 47.12 lacs		10.61
Department escalation unforeseen and administrator charges @ 49%	~~18.39~~ 23.08 lacs		5.19
Total	~~55.92~~ 70.20 lacs		15.80
say	~~55.90~~		

c.o. to final abstract of cost

9.943 ACRES GROUP HOUSING COLONY
SECTOR -26 REWARI

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	~~1.42~~ 0.20	~~50000~~	~~0.71~~ 0.10
2	**Earth Works**				
2.1	Provision for leveling + earth filling as per site condition approximate	Acre	~~9.943~~ 1.20	1,00000	~~9.94~~ ~~14.91~~ 1.80
3	**Provision for**				
i.	200mm GSB				
ii.	250mm thick stone aggregate				
iii.	50mm thick B.M.				
iv.	25mm thick MSS				~~190.44~~
	Total	Sqm	~~16250~~ ~~15870~~ 835	~~850~~ 1200	~~138.12~~ 10.44
4	**Miscellaneous Items**				
4.1	Construction of cement concrete Kerb and Channels as per specifications	Meter	~~3160~~ 275 ~~1580~~	600	~~18.96~~ 9.48 1.65
4.2	Construction of footpaths as per specification on 24 m wide road 2X1.5X280 = 840 sqm	Sqm	840	600	~~5.04~~
4.3	Providing and fixing guide maps at selected locations (L.S.)				~~1.00~~ 0.50

[Pick the date]

4.4	Provision of metalling of commercial	Sq.m.	X	(L.S)	~~1.00~~ ~~0.50~~
4.5	Provision for plot indicators (L.S.)		0.10	(L.S)	~~1.00~~ ~~0.50~~
4.6	Provision for demarcating burgies (L.S.)		X	~~(L.S)~~	~~1.00~~ ~~0.50~~
4.7	Provision for traffic arrangement		0.20	(L.S)	~~2.00~~ 1.00
4.8	Provision for carriage of material (L.S.)		0.20	(L.S)	~~1~~.00
	TOTAL		14.99	~~224.58~~	~~180.77~~ las
	Add 3% contingency & P.E. charges		0.45	~~6.74~~	~~5.42~~
	Total		15.44	~~231.32~~	~~186.19~~ las
	Department escalation unforeseen and administrator charges @ 49%		7.56	113.34	~~91.23~~ las
	Total		23.00	~~344.66~~	~~277.42~~ Ans
	Say				~~277.40~~

c.o. to final abstract of cost

SUB WORK – V

9.943 ACRES GROUP HOUSING COLONY
SECTOR -26 REWARI

Street Lighting

		Amount (Rs. in lacs)
Providing street lighting on internal Roads as per standard specification in ~~10.84~~ 9.943 acre area @ Rs. ~~2,00,000~~/- per acre		~~24.86~~ = 9.943 3.r
~~9.943~~ x 2,50,000/- 1.20		= ~~0.30~~ ~~0.75~~ 0.09
Add 3% contingencies & P.E. charges		~~25.61~~ 3.09 = ~~10.24~~
Add Department escalation unforeseen and administrator charges @ 49%		~~12.54~~ 1.51 = ~~5.02~~ 4.60
Total		= ~~15.26~~ 38.15 las
Say		= ~~15.30~~

c.o to final abstract & cost

9.943 ACRES GROUP HOUSING COLONY

SECTOR -26 REWARI

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 ~~1.528~~ Acres @ Rs. 1,60,000/- per acre	~~1.53~~
2	**Planting of trees with tree guards on Roads at 40' intervals**	
	Total length of roads =1580mtr	
	No. of trees @ 12 m c/c = 1580x 2 / 12 = 263.33Nos.	
	Say = 265Nos .	
	Cost of the tree	
	Excavation Rs. ~~30/-~~	
	Manure Rs. 60/-	
	Tree plants Rs. 60/-	
	Tree guards Rs. ~~600/-~~	
	Total = 265x ~~750~~	~~1.99~~
	TOTAL	3.52
	Add 3 % contingencies and P.E charges	0.11
		3.63

Add 49% departmental charges, price escalation , unforeseen and Adm charges	1.78
TOTAL	**5.41**
SAY	**5.40**

824.57

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.

   ~~9.943~~ acres@ Rs. 7.50 lacs per acre = ~~74.57~~ lacs

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

   ~~16250~~sqm @ Rs 600/- Per Sqm = ~~97.50~~ lacs

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

   ~~16250~~ sqm @ Rs 750/- Per Sqm = ~~121.87~~ lacs

   TOTAL = ~~293.94~~ lacs

   Add 3% PE and contingency charges = ~~8.82~~ lacs

   = ~~302.76~~ lacs

   Add 49% Departmental charges, price escalation unforeseen and administrator charges. = ~~148.35~~ lacs

   Total = ~~451.11~~ lacs

   Say = ~~451.00~~ lacs

HYDRAULIC STATEMENT WATER SUPPLY (Calculation of water load)									
Providing Water Supply Scheme 9.943 Acres Group Housing Colony Sector-26, REWARI									
Sr. No.	Name of Line	No. of Dwelling Units			Population @5 OR 2 persons per unit	Water requirement @ 100 Lts per head per day in KLPD	Water requirement for non residential unit in KLPD	Gross water requirement in KLPD	Water requirement in gallons/day
		General	E.W.S.	Service Personnel					
1	RA	-	-	-	-	-	-	-	-
2	AA1	52	-	45	350	35.00	-	35.00	7700
3	AB	-	-	-	-	-	-	-	-
4	BB1	-	79	-	158	15.8	-	15.8	3480
5	BC	-	-	-	-	-	-	-	-
6	CC1	52	-	-	260	26.00	-	26.00	5720
7	CD	52	-	-	260	26.00	-	26.00	5720
8	DE	52	-	-	260	26.00	-	26.00	5720
9	EF	56	-	-	280	28.00	-	28.00	6160
10	FG	56	-	-	280	28.00	Community +shopping+ swimming pool =45.00	73.00	16060
11	GH	52	-	-	260	26.00	-	26.00	5720
12	HI	52	-	-	240	24.00	-	24.00	5280
13	R2J	27	-	-	135	13.5	-	13.5	2970

DESIGN STATEMENT FOR WATER SUPPLY

Providing Water Supply Scheme 9.943 Acres Group Housing Colony Sector-26, REWARI

Sr. 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 1000 Mtr in M	Head Loss in pipe in Mtr	Hydraulic Level in M		Formation Level at L/E in Mtr	Terminal Head at L/E in Mtr
		Self	Branch	Total							U/E	L/E		
1	RA	-	61560	61560	184680	190000	100	20.00	29.30	0.59	326.00	325.41	246.43	78.93
2	AA1	7700	-	7700	23100	24000	100	29.00	0.62	0.02	325.41	325.39	246.43	78.96
3	AB	-	53860	53860	163800	168000	100	17.00	22.80	0.39	325.41	325.12	246.43	78.69
4	BB1	3480	-	3480	11340	24000	100	60.00	0.62	0.07	325.12	325.05	246.44	78.61
5	BC	-	50380	50380	152460	156000	100	39.00	22.30	0.87	325.12	324.25	246.42	77.83
6	CC1	5720	-	5720	17160	24000	100	85.00	0.62	0.05	324.25	324.20	246.22	77.98
7	CD	5720	38940	44660	135300	140000	100	115.00	17.00	2.06	324.25	322.19	247.06	75.13
8	DE	5720	33220	38940	118140	120000	100	19.00	12.20	0.23	322.19	321.96	247.06	74.90
9	EF	6160	27060	33220	100980	102000	100	31.00	9.00	0.28	321.96	321.68	247.06	74.62
10	FG	16060	11000	27046	82500	84000	100	26.00	6.30	0.16	321.68	321.52	247.06	74.46
11	GH	5720	5280	11000	34320	36000	100	43.00	1.32	0.05	321.52	321.47	247.05	74.42
12	HI	5280	-	5280	17160	24000	100	10.00	0.62	0.06	321.47	321.41	247.05	74.36
13	R2J	2970	-	2970	2970	24000	100	50	0.62	0.05	396.00	395.95	247.5	148.5

Schedule Quantities of D.I. Pipes & S.V.S.

Providing Water Supply Scheme 9.943 Acres Group Housing Colony Sector-26, REWARI .

S.NO.	Name of Line	Diameter of Pipe in MM / Length in			Diameter of S.V. in MM /		
		100 mm	150 mm	200 mm	100	150	200
1	RA	20.00					
2	AA1	29.00					
3	AB	17.00					
4	BB1	60.00					
5	BC	39.00					
6	CC1	85.00					
7	CD	115.00					
8	DE	19.00					
9	EF	31.00					
10	FG	26.00					
11	GH	43.00					
12	HI	10.00					
13	R2J	~~80.00~~ 544					
	Total	~~572.00~~ 544					
	say	~~580.00~~ 550.00					

Flushing Water Pipe

Flushing Water Supply Scheme 9.943 Acres Group Housing Colony Sector-26, REWARI

S.NO.	Name of Line	Diameter of Pipe in MM / Length in M		
		80	100	150
1	R'A'		10.00	
2	A'A1'		66.00	
3	A'B'		25.00	
4	B'B1'		39.00	
5	B1'B2'		46.00	
6	B1'B3'		61.00	
7	B'C'		114.00	
8	C'D'		18.00	
9	D'E'		31.00	
10	E'F'		26.00	
11	F'G'		43.00	
12	G'H'		10.00	
13	R2'J'	30.00	-	
14	OVER FLOW FROM STP TOWER-10 TO HUDA SEWER	50.00	-	
	Total	80.00	489.00 ~~446.00~~	
	say	100.00	500.00	

Statement for Calculation of Sewage Load

Providing Sewerage Scheme 9.943Acres Group Housing colony Sector-26, REWARI

S. NO	Name of Line	No. of Dwelling Units			Population @ 5 persons or 2 persons per Unit	Water Requirement @ 155 LPCD in KLPD	Quanitiy of Sewage @ 75% of Water requirement in cusecs
		General	EWS	Service Personnel			
1	AB	48	-	- -	240	37.20	0.011
2	BC	-	-	-	-	Community +Swimming pool =35.00	0.01
3	CD	52	-	-	260	40.30	0.012
4	DE	-	-	-	-	-	-
5	EF	-	-	-	-	-	-
6	F1F2	-	38	-	76	11.78	0.004
7	F2F3	-	41	-	82	12.71	0.004
8	F3F4	26	-	45	220	34.10	0.01
9	F4F5	52	-	-	260	40.30	0.012
10	F5F6	26	-	-	130	20.15	0.006

Statement for Calculation of Sewage Load

Providing Sewerage Scheme 9.943Acres Group Housing colony Sector-26, REWARI

S. NO	Name of Line	No. of Dwelling Units			Population @ 5 persons or 2 persons per Unit	Water Requirement @ 155 LPCD in KLPD	Quanitiy of Sewage @ 75% of Water requirement in cusecs
		General	EWS	Service Personnel			
11	F6F7	-	-	-	-	-	-
12	F7F8	-	-	-	-	-	-
13	F8F	-	-	-	-	Commercial =10KL	0.003
14	FG	-	-	-	-	-	-
15	GH	52	-	-	260	40.30	0.12
16	HI	56	-	-	280	43.40	0.13
17	IJ	56	-	-	280	43.4	0.013
18	JK	52	-	-	260	40.30	0.012
19	K-STP	-	-	-	-	-	-
20	L-STP TOWER-10	27	-	-	135	20.92	0.006

DESIGN STATEMENT

Providing Sewerage Scheme 9.943Acres Group Housing colony Sector-26, REWARI

Sr. 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	Ground Level in M		Invert Levels in M		Depth in M		Avg. Depth
		Self	Branch	Total								U/E	L/E	U/E	L/E	U/E	L/E	
1	AB	0.011	-	0.011	0.033	0.47	200	44.00	190	0.83	0.23	247.07	247.06	245.22	244.99	1.85	2.07	1.96
2	BC	0.010	0.011	0.021	0.063	0.47	200	28.00	190	0.83	0.15	247.06	247.05	244.99	244.84	2.07	2.21	2.14
3	CD	0.012	0.021	0.033	0.099	0.47	200	49.00	190	0.83	0.26	247.05	247.05	244.84	244.58	2.21	2.47	2.34
4	DE	-	0.033	0.033	0.099	0.47	200	30.00	190	0.83	0.16	247.05	247.06	244.58	244.42	2.47	2.64	2.56
5	EF	-	0.033	0.033	0.099	0.47	200	6.00	190	0.83	0.03	247.06	247.06	244.42	244.39	2.64	2.67	2.66
6	F1F2	0.004	-	0.004	0.012	0.47	200	13.00	190	0.83	0.07	246.44	246.44	245.47	245.40	0.97	1.04	1.00
7	F2F3	0.004	0.004	0.008	0.024	0.47	200	39.00	190	0.83	0.20	246.44	246.43	245.40	245.20	1.04	1.23	1.14
8	F3F4	0.010	0.008	0.018	0.054	0.47	200	50.00	190	0.83	0.26	247.43	246.43	245.20	244.94	1.23	1.49	1.36
9	F4F5	0.012	0.018	0.030	0.090	0.47	200	38.00	190	0.83	0.20	246.43	246.43	244.94	244.74	1.49	1.69	1.59
10	F5F6	0.006	0.030	0.036	0.108	0.47	200	45.00	190	0.83	0.24	246.42	246.41	244.74	244.50	1.69	1.91	1.80

DESIGN STATEMENT

Providing Sewerage Scheme 9.943Acres Group Housing colony Sector-26, REWARI

Sr. 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	Ground Level in M		Invert Levels in M		Depth in M		Avg. Depth
		Self	Branch	Total								U/E	L/E	U/E	L/E	U/E	L/E	
11	F6F7	-	0.036	0.036	0.108	0.47	200	18.00	190	0.83	0.09	246.41	246.40	244.50	244.41	1.91	1.99	1.95
12	F7F8	-	0.036	0.036	0.108	0.47	200	36.00	190	0.83	0.19	246.40	246.40	244.41	244.22	1.99	2.18	2.08
13	F8F	0.003	0.036	0.039	0.117	0.47	200	67.00	190	0.83	0.35	246.40	247.06	244.22	244.87	2.18	2.23	2.20
14	FG	-	0.072	0.072	0.216	0.86	250	58.00	200	0.96	0.29	247.06	247.07	244.36	244.07	2.70	3.00	2.85
15	GH	0.012	0.072	0.084	0.252	0.86	250	42.00	200	0.96	0.21	247.07	247.08	244.07	243.86	3.00	3.22	3.11
16	HI	0.013	0.084	0.097	0.291	0.86	250	38.00	200	0.96	0.19	247.08	247.08	243.86	243.67	3.22	3.41	3.22
17	IJ	0.013	0.097	0.110	0.333	0.86	250	30.00	200	0.96	0.15	247.08	247.09	243.67	243.52	3.41	3.57	3.49
18	JK	0.012	0.110	0.122	0.366	0.86	250	32.00	200	0.96	0.16	247.09	247.10	243.52	243.36	3.57	3.74	3.66
19	K-STP	-	0.122	0.122	0.366	0.86	250	41.00	200	0.96	0.21	247.10	247.08	243.36	243.15	3.74	3.93	3.84
20	L-STP TOWER-10	0.006	-	0.006	0.018	0.47	200	30.00	200	0.83	0.16	247.15	247.13	245.30	245.14	1.85	1.99	1.92

Schedule Quantities of S.W. Pipes

Providing Sewerage Scheme 9.943Acres Group Housing colony Sector-26, REWARI

Sr.NO.	Name of Line	Length in M		
		200 mm	250 mm	300 mm
1	AB	44.00		
2	BC	28.00		
3	CD	49.00		
4	DE	30.00		
5	EF	6.00		
6	F1F2	13.00		
7	F2F3	39.00		
8	F3F4	50.00		
9	F4F5	38.00		
10	F5F6	45.00		

Schedule Quantities of S.W. Pipes

Providing Sewerage Scheme 9.943Acres Group Housing colony Sector-26, REWARI

Sr.NO.	Name of Line	Length in M		
		200 mm	250 mm	300 mm
11	F6F7	18.00		
12	F7F8	36.00		
13	F8F	67.00		
14	FG		58.00	
15	GH		42.00	
16	HI		38.00	
17	IJ		30.00	
18	JK		32.00	
19	K-STP		41.00	
20	L-STP TOWER-10	30.00		
	TOTAL	493.00	241.00	
	SAY	500.00 mt	260.00 mt	

DESIGN STATEMENT

Providing Storm Water Drainage Scheme 9.943Acres Group Housing Colony Sector-26, REWARI

Sr. No	Name of Line	Area in Acres			Discharge @1/4" in Rain Fall in causes	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 Levels in M		Depth in M		Avg. Depth
		Self	Branch	Total								U/E	L/E	U/E	L/E	U/E	L/E	
1	AB	1.58	-	1.58	0.39	3.80	400	122.00	450	0.84	0.27	247.10	247.07	245.55	245.28	1.55	1.79	1.67
2	BC	0.08	1.58	1.66	0.42	3.80	400	25.00	450	0.84	0.06	247.07	247.07	245.28	245.22	1.79	1.85	1.82
3	CD	0.16	1.66	1.82	0.46	3.80	400	40.00	450	0.84	0.09	247.07	247.06	245.22	245.13	1.85	1.93	1.89
4	DE	0.07	1.82	1.89	0.47	3.80	400	18.00	450	0.84	0.04	247.06	247.06	245.13	245.09	1.93	1.97	1.95
5	EF	0.21	1.89	1.90	0.48	3.80	400	6.00	450	0.84	0.02	247.06	247.05	245.09	245.07	1.97	1.98	1.98
6	FG	0.07	1.90	1.97	0.49	3.80	400	27.00	450	0.84	0.06	247.05	247.05	245.07	245.01	1.98	2.04	2.01
7	G1G	1.58	-	1.58	0.39	3.80	400	115.00	450	0.84	0.25	247.07	247.05	245.52	245.27	1.55	1.78	1.67
8	GH	0.69	3.55	4.24	1.06	3.80	400	25.00	450	0.84	0.05	247.05	247.05	245.01	244.96	2.04	2.09	2.07
9	H-HUDA STORM	0.17	4.24	4.41	1.10	3.80	400	25.00	450	0.84	0.05	247.05	246.20	244.96	244.91	2.09	1.29	1.64
10	IJ	1.26	-	1.26	0.32	2.06	300	140.00	350	0.80	0.40	247.44	247.42	246.59	246.19	0.85	1.23	1.04

DESIGN STATEMENT

Providing Storm Water Drainage Scheme 9.943Acres Group Housing Colony Sector-26, REWARI

Sr. No	Name of Line	Area in Acres			Discharge @1/4" in Rain Fall in causes	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 Levels in M		Depth in M		Avg. Depth
		Self	Branch	Total								U/E	L/E	U/E	L/E	U/E	L/E	
11	JM	0.21	1.26	1.47	0.37	2.06	300	28.00	350	0.80	0.08	247.42	247.40	246.19	246.11	1.23	1.29	1.26
12	KL	1.26	-	1.26	0.32	3.80	400	115.00	450	0.84	0.25	247.43	247.42	246.58	246.33	0.85	1.09	0.97
13	LM	0.21	1.26	1.47	0.37	3.80	400	32.00	450	0.84	0.07	247.42	247.40	246.33	246.26	1.09	1.14	1.12
14	M-HUDA STROM	0.02	2.94	2.96	0.74	3.80	400	26.00	450	0.84	0.06	247.40	246.20	246.11	246.05	1.29	1.15	1.22
15	NO	0.16	-	0.16	0.04	3.80	400	33.00	450	0.84	0.07	247.16	247.15	245.61	245.54	1.55	1.61	1.58
16	OP	0.27	0.16	0.43	0.11	3.80	400	60.00	450	0.84	0.13	247.15	247.14	245.54	245.41	1.61	1.73	1.67
17	PQ	0.25	0.43	0.68	0.17	3.80	400	57.00	450	0.84	0.13	247.14	247.13	245.41	245.28	1.73	1.85	1.79
18	Q1Q	0.16	-	0.16	0.04	3.80	400	36.00	450	0.84	0.08	247.13	247.13	245.58	245.50	1.55	1.63	1.59
19	Q-HUDA STORM	0.14	0.84	0.98	0.25	3.80	400	10.00	450	0.84	0.02	247.13	246.20	245.28	245.26	1.85	1.94	1.90

Schedule of Quantities of R.C.C Pipes

Providing Storm Water Drainage Scheme 9.943Acres Group Housing Colony Sector-26, REWARI

S.NO.	Name of Line	Length in M			S.NO.	Name of Line	Length in M			S.NO.	Name of Line	Length in M		
		300 mm	400 mm	450 mm			300	400	450			300	400	450
1	AB		122.00											
2	BC		25.00											
3	CD		40.00											
4	DE		18.00											
5	EF		6.00											
6	FG		27.00											
7	G1G		115.00											
8	GH		25.00											
9	H-HUDA STORM		25.00											
10	IJ	140.00												

Schedule of Quantities of R.C.C Pipes

Providing Storm Water Drainage Scheme 9.943Acres Group Housing Colony Sector-26, REWARI

S.NO.	Name of Line	Length in M			S.NO.	Name of Line	Length in M			S.NO.	Name of Line	Length in M		
		300 mm	400 mm	450 mm			300	400	450			300	400	450
11	JM	28.00												
12	KL		115.00											
13	LM		32.00											
14	M-HUDA STROM		26.00											
15	NO		33.00											
16	OP		60.00											
17	PQ		57.00											
18	Q1Q		36.00											
19	Q-HUDA STORM		10.00											
	Total	168.00	772.00											
	SAY	~~200.00~~ 170.0	~~800.00~~ 780											

Schedule of Quantities of R.C.C Pipes

Providing Storm Water Drainage Scheme 9.943Acres Group Housing Colony Sector-26, REWARI

S.NO.	Name of Line	Length in M			S.NO.	Name of Line	Length in M			S.NO.	Name of Line	Length in M		
		300 mm	400 mm	450 mm			300	400	450			300	400	450
11	JM	28.00												
12	KL		115.00											
13	LM		32.00											
14	M-HUDA STROM		26.00											
15	NO		33.00											
16	OP		60.00											
17	PQ		57.00											
18	Q1Q		36.00											
19	Q-HUDA STORM		10.00											
	Total	168.00	772.00											
	SAY	~~200.00~~ 170.0 ~~170.00~~	~~800.00~~ 780 mtr											

हरियाणा शहरी विकास प्राधिकरण
HARYANA SHEHRI
VIKAS PRADHIKARAN
HSVP

: 2564655
Website : www.hsvp.org.in
Email : cencrhsvp@ gmail.com
Address: C-3, HSVP , HQ Sector-6
Panchkula

C.E.I-No. 204568
Dated: 15/11/2019

Annexure-A

SUB:- Approval of service plan / Estimate for Group Housing Colony for an area measuring 9.943 acres in Residential Plotted Colony on area measuring 52.218 acres (License No. 35 of 2009 dated 11.7.2019) in Sector-26, Rewari being developed by B.M. Gupta Developers Pvt. Ltd. & others.

Technical note and comments:-

1. All detailed working drawings would have to be prepared by the colonizer for Integrating the internal services proposals with the master proposals of town.
2. The correctness of the levels will be the sole, responsibility of the colonizer for the integration of internal proposals, with the master proposals, of town and will be got confirmed before execution.
3. The material to be used shall the same specifications as are being adopted by 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.

SE-2

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.

SE(HQ) 15/11/19

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.

हरियाणा शहरी विकास प्राधिकरण
HARYANA SHEHRI
VIKAS PRADHIKARAN

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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.

DESIGN DATA OF ROADS

9.943 Acres Group Housing Colony Sector-26, REWARI

24.00 M Wide Road		
S. No.	Name of Road	Length in M
1	R13	254
Add 10 % for curves		25
	TOTAL	279

6.00 M Wide Road			6.00 M Wide Road		
S. No.	Name of	Length in M	S. No.	Name of	Length
1	R1	252	15	R15	102
2	R2	47	16	R16	128
3	R3	130	17	R17	40
4	R4	70	18	R18	26
5	R5	25	19	R19	25
6	R6	22	20	R20	15
7	R7	48	21	R21	20
8	R8	26			
9	R9	35			
10	R10	35			
11	R11	35			
12	R12	28			
13	R13	38			
14	R14	21			1168
				TOTAL	~~1172~~
	Add 10 % for curves				117
					~~1289~~ 1284.8
				say	1300

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mettalled area of roads = 1300x6+280x14=	11720.00	sq.mtr.
~~add for 4.00 m wide roads~~	~~280.00~~	sq.mtr.
~~add extra at at entry exit -~~	~~100.00~~	sq.mtr.
add for surface parking =332x2.5x5=	4150.00	sq.mtr.
	1587	
total	~~16250.00~~	sq.mtr.
tal length of roads =1300 + ~~280~~=	1300 ~~1580.00~~	mtr.
total length of Kerbs 2x ~~1580~~	~~3160.00~~	mtr.
1300	~~3600~~	