SERVICE ESTIMATE, DESIGN REPORT AND CALCULATION OF INTERNAL DEVELOPMENT WORKS

FOR COMMERCIAL COLONY MEASURING 3.95 Acres AT SECTOR - 15(II) GURGAON.

DEVELOPED BY SH. ANUMOD SHARMA AND OTHERS C/o EXPERION DEVELOPERS PVT. LTD.

Report

Gurgaon town of Haryana State is situated on Delhi - Jaipur National Highway No.8 at a distance of 30 kms from Delhi. Being in the national capital Region, the town has fast developing tendency and potential. Further, it has also started sharing the growing Industrial load of Delhi. In order to relieve the growing pressure of population in National Capital of Delhi, Haryana Urban Development Authority has already developed residential sector which are fully inhabited to an extent. Further to the increasing demand HUDA has planned to develop new sectors at

3.950 acres Group housing scheme at Sec-15 (II) Gurgaon.

This report and estimate is for approval of **3.95 Acres** Commercial colony scheme.

WATER SUPPLY The revision is due to change in area chart as per DTCP as per license no. 92 of 2010 dated 20.10.10 approval

At present the source of water supply in this area is HUDA and optional bore well. As the underground water is potable, provision for one numbers of Bore wells have been made in this estimate. It has been proposed to construct underground tanks of capacity as per attached details and at location for domestic purpose and for fire protection. The underground tanks will be fed from the bore wells and HUDA supply, from there water will be supplied by set of variable frequency pump to each plot which is now a days universally adopted. The water supply system has been designed as per the Hazen William formula.

DESIGN

The scheme has been designed for population considering 6sqm/person for retail area, 3 sqm/person floating population & 10 sqm/person. The rate of water supply per head/day has been taken as 45 liters per head per day for office and retail and 15 lpcd for floating population and visitors.

PUMPING EQUIPMENTS

It has been proposed to install pumping set as described with standby of equal capacity. Standby electric power requirement is added to the main DG Sets in case of electricity failure.

SEWERAGE SCHEME

Sewer line from proposed development will be connecting to a centralized Sewage treatment plant with a bypass to HUDA sewer to dispose excess sewage. The sewerage system has been marked on the respective plans.

Sewer lines have been designed for three times average D.W.F in relation to water supply demand. It has been assumed that about 80% of the domestic water supply shall find its way into the proposed sewer. Sewer lines shall be laid to a gradient maintaining minimum 2.46 ft./sec (0.75m/sec) self-cleaning velocity. Sewer line up to 400mm dia has been designed to run half full and above 400mm dia has been designed to run three fourth full at peak flow. Necessary provision for laying S.W/RCC pipe sewer line, construction of required number of manholes etc., has been made in the estimate.

Necessary design statement for entire sewerage system has been prepared and attached with estimate. Manning's formula has been used on the design of sewerage system.

STORM WATER DRAINAGE

We proposed to lay underground R.C.C. pipe drains with required number of catch basins, manholes and rainwater recharge pits with over flow to the Proposed HUDA storm drain on sector Road. The intensity of rain fall has been taken as ¼" per hour. R.C.C storm water line will be designed as per Manning's formula.

SPECIFICATIONS

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

ROADS

Roads have been provided to above zones and estimate is prepared as per revised specifications adopted by HUDA

STREET LIGHITING

Provision for streets also has been made

HORTICULTURE

Estimates of plantation, landscaping, signage, etc., have been included

RATES

The estimate has been prepared based on the present market rates

COST

The total cost of the scheme, including cost of all services works out to be **Rs. ~~437.55~~ 657.52** Lacs

Including 3% Contigencies & PE @ 49% Departmental, price escalation, Unforseen, Admn. charges.

Say apx. Four crore twenty seven lacs four thousand twenty four rupees only

For: SH. ANUMOD SHARMA AND OTHERS C/o EXPERION DEVELOPERS PVT. LTD.

Authorized Signatory

PROPOSED BUILDING PLAN OF COMMERCIAL COLONY MEASURING 3.95 ACRES
DAILY WATER DEMAND & PUMPING SYSTEM (Annexure - 1)

S.No	Description	Nos. / Area	Units	Basis of Population	Total Population	Total Water Requirement		Domestic Water (A)		Flushing Water (B)	
						LPCD	LPD	LPCD	LPD	LPCD	LPD
A	**NEW PROPOSED**										
1	Retail At Ground (Floating Population)	1001.53	sq.m.	3 sq.m. / person	334	15	5007.65	6	2003.06	9	3004.59
2	Retail At Ground (Fixed Population)			10% of Visitors	33	45	1485	15	495	30	990
3	Office Area Gr. to 12th Floor	22844.9	sq.m.	10 sq.m. / person	2284	45	102802.05	15	34267.35	30	68534.7
4	Proposed Banquet at Gr. Fl.	632.9	sq.m.	1.5 sq.m. / person	422	15	6329	6	2531.6	9	3797.4
5	Maintenance Staff			LS	50	45	2250	15	750	30	1500
	Common Services										
1	Swimming Pool/Water Body Make-up	Assumed		Assumed			5000		5000		
2	DG Cooling	Assumed		Assumed			10000				10000
3	Filter Backwash	Assumed		Assumed			10000		10000		
Total Water Requirement							142874		55047.01		87826.69
Say					**3123**		~~165 KLD~~ 145 KLD		~~64~~ 55.0 KLD		~~100~~ 90.0 KLD

Fire demand 100 * (P in thousand)^0.5 only for Undrground static Reservior) **177 KLD** **Proposed 450 KL**

HortiCulture Total area of 0.5925 Acre @ 25000 / Acre from STP **15 KLD** **20** **Proposed 20 KLD**

Green Area (15% of Total Site) 0.5925

STP capacity 100% Flushing + 90% Domestic (Added 20% extra as per MOEF) **147 KLD** **Proposed 180 KLD**

Capacity of Tanks:

Capacity of under ground tank is on the basis of 1 day requirement and overhead on 1/2 day requirement.

	U.G. Tank	O.H. Tank	Location		Nos of Tank
Fire Tank (Proposed cap.)	450 KL	20 KL	U.G. Plant Room		200 x 2
Raw Water Tank	150 KL	Nil	U.G. Plant Room		75 x 2
Dom. Water Tank	75 KL	35 KL	U.G. Plant Room		75 x 1
Flu. Water Tank	60 KL	48 KL	S.T. Plant Room		60 x 1
				Total	685 KL

SNC

B EXISTING BUILDING

S.No	Description	Nos. / Area	Units	Basis of Population	Total Population	Total Water Requirement		Domestic Water (A)		Flushing Water (B)	
						LPCD	LPD	LPCD	LPD	LPCD	LPD
1	Ground Floor (Floating population)	2341		3 sq.m. / person	780	45	35100	15	11700	30	23400
2	Ground Floor (Fixed population)			10% of Visitors	78	45	3510	15	1170.0	30	2340
3	First Floor (Floating population)	2025.24		6 sq.m. / person	338	45	15210	15	5070.0	30	10140.0
4	First Floor (Fixed population)			10% of Visitors	34	45	1530	15	510.00	30	1020.00
5	Second Floor (Floating population)	491.463		6 sq.m. / person	82	45	3690	15	1230.050	30	2460.315
6	Second Floor (Fixed population)			10% of Visitors	8	45	360	15	120.8658	30	240.7315
	Total Water Requirement						59280.00		19796.43		39592.87
	Say				**1320**		**59 KLD**		**20 KLD**		**40 KLD**

Fire demand 100 * (P in thousand)^0.5 only for Undrground static Reservior)	**115 KLD**		**Proposed 120 KL**
HortiCulture Total area of 0.2775 Acre @ 25000 / Acre from STP	**7 KLD**	**20**	**Proposed 7 KLD**
Green Area (15% of Total Site) 0.2775			
STP capacity 100% Flushing + 90% Domestic (Added 20% extra as per MOEF)	**69 KLD**		**Proposed 70 KLD**

Capacity of Tanks:

Capacity of under ground tank is on the basis of 1 day requirement and overhead on 1/2 day requirement.

	U.G. Tank	O.H. Tank	Location	Nos of Tank
Fire Tank (Proposed cap.)	150 KL	10 KL	U.G. Plant Room	75 x 2
Raw Water Tank	50 KL	Nil	U.G. Plant Room	50 x 1
Dom. Water Tank	50 KL	10 KL	U.G. Plant Room	50 x 1
Flu. Water Tank	45 KL	22.5 KL	S.T. Plant Room	45 x 1
			Total	295 KL

SANDEEP CHAWLA & ASSOCIATES
S-480, GREATER KAILASH-2
NEW DELHI-110048
PH.: 29210732, 29210185

REGISTRATION NO.
CA/90/13362

SUNIL NAYYAR CONSULTANTS PVT. LTD.
GURGAON

Pump Calculation

1	Domestic water transfer pump (Tower)		
1.1	**Pump Capacity**	**125 LPM**	**(1w+1s)**
a)	Total Demand	52 KLD	
b)	Daily working hours	8.0 Hrs	(24/3)
c)	Required pump capacity	107.8 LPM	
d)	Nos. of working pumps	1 Nos.	
1.2	**Pump Head**	**80 Mtr.**	**Say**
a)	Suction lift	0	
b)	Elevation height	62.75	
	(B2(7.775)+Terrace(51.975)+Mumty(3)		
c)	Residual head	15	
d)	Frictional head loss (As per design sheet)	0.9	
		5.0	
1.3	**Pump HP**	~~3.5 HP~~	**Say**
a)	(Lpm*head (m)/4500*.65(effi)	~~3.4~~ 3.70	

1a	Domestic water transfer pump (Banquet)		
1.1	**Pump Capacity**	**75 LPM**	**(1w+1s)**
a)	Total Demand	3.28 KLD	
b)	Daily working hours	1.0 Hrs	
c)	Required pump capacity	54.7 LPM	
d)	Nos. of working pumps	1 Nos.	
1.2	**Pump Head**	**40 Mtr.**	**Say**
a)	Suction lift	0	
b)	Elevation height	20	
c)	Residual head	15	
d)	Frictional head loss (As per design sheet)	3.3	
1.3	**Pump HP**	**1.0 HP**	**Say**
a)	(Lpm*head (m)/4500*.65(effi)	1.01	

2	Flushing water transfer pump (Tower)		
2.1	**Pump Capacity**	**200 LPM**	**(1w+1s)**
a)	Total Demand	83 KLD	
b)	Daily working hours	8.0 Hrs	(24/3)
c)	Required pump capacity	171.9 LPM	
d)	Nos. of working pumps	1 Nos.	
2.2	**Pump Head**	**80 Mtr.**	**Say**
a)	Suction lift	0	
b)	Elevation height	62.75	
c)	Residual head	15	
d)	Frictional head loss (As per design sheet)	0.3	
		7.50	
2.3	**Pump HP**	~~5.5 HP~~	**Say**
a)	(Lpm*head (m)/4500*.65(effi)	5.92	

2a	Flushing water transfer pump (Banquet)		
2.1	**Pump Capacity**	**120 LPM**	**(1w+1s)**
a)	Total Demand	5 KLD	
b)	Daily working hours	1.0 Hrs	
c)	Required pump capacity	88.3 LPM	
d)	Nos. of working pumps	1 Nos.	
2.2	**Pump Head**	**40 Mtr.**	**Say**
a)	Suction lift	0	
b)	Elevation height	20	
c)	Residual head	15	
d)	Frictional head loss (As per design sheet)	0.70	
2.3	**Pump HP**	**2.0 HP**	**Say**
a)	(Lpm*head (m)/4500*.65(effi)	~~1.6~~ 1.78	

3	Irrigation water transfer pump		
3.1	**Pump Capacity**	**50 LPM**	**(1w+1s)**
a)	Total Demand	20 KLD	
b)	Daily working hours	8.0 Hrs	
c)	Required pump capacity	41.7 LPM	
d)	Nos. of working pumps	1 Nos.	
3.2	**Pump Head**	**40 Mtr.**	**Say**
a)	Suction lift	0	
b)	Elevation height	10	
c)	Residual head	10	
d)	Frictional head loss	10	
3.3	**Pump HP**	**1.0 HP**	**Say**
a)	(Lpm*head (m)/4500*.65(effi)	0.7	

4	Fire pumpsets		
a)	Wet riser pump (Electric operated)	2850 LPM	
b)	Jockey pump (WR) (Electric operated)	180 LPM	
c)	Sprinkler pump (Electric operated)	2850 LPM	
d)	Jockey pump (Spr) (Electric operated)	180 LPM	
e)	Diesel Engine driven pump	4500 LPM	
4.2	**Pump Head**	**125 Mtr.**	**Say**
a)	Suction lift	0	
b)	Elevation height	62.75	
c)	Residual head	35	
d)	Frictional head loss	20	
4.3	**Pump HP for Main Electric pumps**	**125.0 HP**	**Say**
a)	(Lpm*head (m)/4500*.65(effi)	121.8	
4.4	**Pump HP for Jockey pumps**	**8.0 HP**	**Say**
a)	(Lpm*head (m)/4500*.65(effi)	7.7	

5	Borewell & Pumping machinery		
	(Borewells will be installed if authorities Permits)		
5.1	**Number of borewell**	**1**	**Nos.**
a)	Yield / Borewell	8	KL/Hr
b)	Operational borewell per day	8	Hrs
c)	Water requirement	55.05	KL
d)	Required no. of borewell	0.860	Nos.
e)	Added 10% as stand by	0.086	Nos.
5.2	**Total head required**	**80 Mtr.**	**Say**
a)	Gross working Head	60	
b)	Average Fall in S.L.	5	
c)	Depression Head loss	5	
d)	Friction Loss in main	10	
5.3	**Pump HP for Main Electric pumps**	~~8.5 HP~~	**Say**
a)	(Lpm*head (m)/4500*.65(effi)	3.6	

6	Capacity of DG Set			Total Power
			5.0	cons.
a)	Domestic water transfer pump (Tower)	1 Nos.	~~3.5~~ HP	~~5.5~~ HP
b)	Domestic water transfer pump (Banquet)	1 Nos.	1.0 HP	1.0 HP
c)	Flushing water transfer pump (Tower)	1 Nos.	~~5.5~~ HP	~~7~~ 5.5 HP
d)	Flushing water transfer pump (Banquet)	1 Nos.	2.0 HP	2.0 HP
e)	Irrigation water transfer pump	1 Nos.	1.0 HP	1.0 HP
f)	~~Borewells~~	~~1 Nos.~~	~~8.5 HP~~	~~8.5 HP~~
				16.5
6.2	**Total HP required**			~~21.5~~ HP
a)	DG Capactiy 80% of total power			~~17.2~~ KVA
	Add for lighting			18.47
6.3	**DG Capacity**	~~20 KVA~~		5.0
		25.0 KVA		23.47

7	HUDA water supply line calculation	Demand LPD	Flow LPM	Dia mm	Line length Mtr	F. Loss Mtr/Mtr	Velocity M/Sec	Total loss Mtr/Mtr
7.1	From Municipal conn. To UGT	55047.01	45.87	65	60	0.002	0.2	0.092

FINAL ABSTRACT OF COST

Description	Total of sub work	3% Contigencies and PE charges	TOTAL	49% departmental charges price circulation & unforseen admin charges	Grand Total
	Rs in lacs	Rs in lacs	Rs. in lacs		Rs in lacs
Sub Work-1 Water Supply	114.11 11,734,100	3.42 352,023	117.53 12,086,123	57.59 5,922,200	175.12 18,008,323
Sub Work-2 Sewerage	52.44 2,781,600	1.57 83,448	54.01 2,865,048	26.46 1,403,874	80.47 4,268,922
Sub Work-3 S.W. Drainage	39.95 2,017,750	1.20 60,533	41.15 2,078,283	20.16 1,018,358	61.31 3,096,641
Sub Work-4 Road Works	93.24 6,039,500	2.80 181,185	96.04 6,220,685	47.06 3,048,136	143.10 9,268,821
Sub Work-5 Street Lighiting	9.87 288,000	0.30 8,640	10.17 296,640	4.98 145,354	15.15 441,994
Sub Work-6 Plantation	5.38 546,750	0.16 16,403	5.54 563,153	2.71 275,945	8.25 839,097
Sub Work-7 Services & Resurfacing of road for 10 years as per norms	113.46 5,103,000	153,090	5,256,090	2,575,484	7,831,574
TOTALS	Rs. 28,510,700.00	Rs. 855,321.00	Rs. 29,366,021.00	Rs. 14,389,350.29	Rs. 43,755,371.29

Total Cost — Say apx. Four crore twenty seven lacs four thousand twenty four rupees only

Amount per acre Rs. 657.52 lacs

For: SH. ANUMOD SHARMA AND OTHERS C/o EXPERION DEVELOPERS PVT. LTD.

Authorized Signatory

Executive Engineer
HSVP Division No.I,
Gurugram

Checked subject to comments in forwarding letter No. 182/80 Dt. 11.9.18 and notes attached with the estimate

Superintending Engineer (HQ)
for Chief Engineer HSVP
Panchkula

Superintending Engineer
HSVP, Circle-II, Gurugram

Addl. Chief Engineer
HSVP, Gurugram

Director
Town & Country Planning
Haryana, Chandigarh

SUB WORK No. 1 **WATER SUPPLY**

S No.	Heads	Description	Amount
1	Sub Head 01	~~Bore well & rising Main~~ Head Works	~~25,47,500/-~~ 35.80 lacs Rs. ~~3,330,000.00~~
2	Sub Head 2	HUDA Rising Mains	3.38 lacs Rs. ~~368,000.00~~
3	Sub Head 03	Pumping and machinery	~~5,325,000/-~~ 47.00 lacs Rs. ~~5,425,000.00~~
4	Sub Head 04	Water supply and distribution (Dom. & Flushing)	7.58 lacs Rs. ~~543,000.00~~
5	Sub Head 05	Irrigation System	1.19 lacs Rs. ~~637,600.00~~
6	Sub Head 06	Fire fighting	~~1,430,500.00~~ 19.21 lacs Rs. 1,430,500.00
		TOTAL	~~**Rs. 11,734,100.00**~~ 114.11 lacs ~~18,076,500/-~~ ~~1,11,94,000/-~~

SUB WORK No. 1 — **WATER SUPPLY**

Sub Head 01 — Bore well & rising Main

(Head works)

S No.	Description	Amount
1	Boring and installing 510 mm i/d Bore well with reverse rotary rig complete with pipe and strainer to a depth of about 120 meter	
	1 Nos. @ Rs. 700,000 each.	Rs. ~~700,000.00~~
2	Provision for rising mains, connecting Bore wells with water main and bye-pass arrangements: for tank feeding.(CILA Pipe)	
a)	80 mm dia 75 Mtr. @ Rs. 1,100	Rs. ~~82,500.00~~
3	Construction of UG Tank (In total) ~~685~~ 980 KL @ Rs. 3,500 /-KL	Rs. ~~2,397,500.00~~ 34.30 lacs
	Dom. and Fire tank ~~625~~ 125 + 400 + 150 = 675 KL	
	Flushing tank near STP 60 + 45 = 105 KL Raw water Tank 150 + 50 = 200 KL	
4	Provision of unseen items/carriage of materials	Rs. 50,000.00
5	Provision for construction of pump chamber of Size 1.5 x 5 x 1.5 m for Housing	
	Bore wells 1 Nos. @ Rs. 100,000	Rs. 100,000.00
	Total of Sub Head 01 Carried over to summary of Sub work - 1	**Rs. ~~3,330,000.00~~** ~~25,47,500/-~~ 35.80 lacs

MATERIAL STATEMENT OF BOREWELL RISING MAINS REFERS TO ANNEXURE 5 & 1

SUB WORK No. 1		WATER SUPPLY
Sub Head 2		HUDA Rising Mains
S No.	**Description**	**Amount**
1	1. Providing, laying, jointing and testing CILA pipe lines Including cost of excavation etc. complete in all respects.	
a)	~~65~~ 100 mm dia pipe 60 Mtr. @ Rs. 1,000 1250	Rs. ~~60,000.00~~ 0.75 lacs
2	Providing and fixing sluice valve including cost of surface boxes and masonary chambers etc. complete in all respects	
a)	~~65~~ 100 mm dia pipe 1 Nos. @ Rs. 7,000	Rs. ~~7,000.00~~ 0.12 lacs
3	Providing and fixing indicating plates for sluice valve and air valves	
a)	1 Nos. @ Rs. 1,000 each	Rs. 1,000.00
4	Provision for carriage for materials and other unforeseen items (L/S)	Rs. 50,000.00
5	Provision for cutting of roads and making good to its original conditions (L/S)	Rs. 100,000.00
6	Provision for making connection with HUDA on Master Road (L/S)	Rs. 1~~5~~0,000.00
Total of Sub Head 2	**Carried over to summary of Sub work - 1**	**Rs. ~~368,000.00~~ 3.38 lacs**

MATERIAL STATEMENT OF HUDA MAINS REFERS TO ANNEXURE 5A

SUB WORK No. 1 — **WATER SUPPLY**
Sub Head 3 — **Pumping and machinery**

S No.	Description					Amount
1	Providing and installing electricity driven submersible pumping set capable of delivering about 8 KL/Hr of water against a total head of 80m complete with motor and other accessories					
	1 Nos.	Rs. 100,000.00				Rs. ~~100,000.00~~
2	Providing & installing pumping set of following capacity for Water supply Booster Pumps					
a)	Capacity 125 LPM @ 80 mtr. Head (Towers) (5.0 HP)	(1+1) 2 Nos. @	Rs. ~~250,000.00~~ 1.00	each.		2.00 lacs Rs. ~~500,000.00~~
b)	Capacity 75 LPM @ 40 mtr. Head (Banquet) (1.0 HP)	(1+1) 2 Nos. @	Rs. ~~150,000.00~~ 0.25	each.		0.50 lacs Rs. ~~300,000.00~~
3	Providing & installing pumping set of following capacity for Flushing Pumps					
a)	Capacity 200 LPM @ 80 mtr. Head (Towers) (7.50 HP)	(1+1) 2 Nos. @	1.50 lacs Rs. ~~450,000.00~~	each.		3.00 lacs Rs. ~~900,000.00~~
b)	Capacity 120 LPM @ 40 mtr. Head (Banquet) (2.0 HP)	(1+1) 2 Nos. @	Rs. ~~75,000.00~~ 0.50	each.		1.00 lacs Rs. ~~150,000.00~~
4	Providing & installing pumping set of following capacity for Fire Pumps					
a)	Capacity 2850 LPM @ 150 mtr. Head (Main	2 Nos. @	Rs. ~~650~~,000.00	each.		15.00 Rs. ~~1,300,000.00~~
b)	Capacity 180 LPM @ 150 mtr. Head (Jockey	2 Nos. @	Rs. ~~150~~,000.00	each.		4.00 Rs. ~~300,000.00~~
b)	Capacity 4500 LPM @ 150 mtr. Head (diesel	1 Nos. @	10.00 Rs. ~~850,000.00~~	each.		10.00 Rs. ~~850,000.00~~
5	Providing & installing pumping set of following capacity for Irrigation Pumps					
a)	Capacity 50 LPM @ 40 mtr. Head	2 Nos. @	Rs. 50,000.00	each.		Rs. 100,000.00
6	Provisions for chlorination plant complete	1 Nos @	Rs. 100,000.00	each		Rs. 100,000.00
7	Provision for making foundations and erection of pumping machinery					
	L.S.					Rs. 200,000.00
8	Provision for pipes, valves and specials inside the boosting chamber					
	L.S.					Rs. 150,000.00
9	Provision for electric service connection including electrical fittings for bore well and boosting etc. 1 Set incl. cost of Transformer					2.50 lacs Rs. ~~175,000.00~~
10	Provision for carriage of material and other unforeseen items etc. L/S					Rs. 100,000.00
11	Provision for diesel engine Gen set each for standby arrangements for T.W. & booster pump complete with gear head arrangements of 25 KVA capacities – 1 No.					Rs. 250,000.00
	TOTAL CO to SUB WORK - 1					**Rs. ~~5,425,000.00~~** ~~5,325,000/-~~ 47.0

SUB WORK No. 1 — **WATER SUPPLY**
Sub Head :- Water supply and distribution

S No.	Description					Amount
1	Providing, laying, jointing and testing DI/GI pipe lines including fittings etc. complete in all respects.**(Domestic)**					
a)	65 mm Pipe	95	Mtr @	Rs. 950	For main Tower	Rs. 90,250
b)	50 mm Pipe	130	Mtr @	Rs. 750	For Banquet	Rs. 97,500
1a	**Flushing**	225				
a)	80 mm Pipe	80	Mtr @	Rs. 1,000		Rs. 80,000
b)	65 mm Pipe	135	Mtr @	Rs. 950		Rs. 128,250
		215				
2	Providing and fixing sluice valve including cost of surface boxes and masonry chambers etc. complete in all respects.**(Domestic)**					
a)	80 mm	1	Each @	Rs. 7,000		Rs. 7,000
b)	65 mm	2	Each @	Rs. 5,000		Rs. 10,000
c)	50 mm	2	Each @	Rs. 3,000		Rs. 6,000
		5				
2a	**Flushing**					
a)	80 mm	2	Each @	Rs. 7,000		Rs. 14,000
b)	65 mm	2	Each @	Rs. 5,000		Rs. 10,000
		4				
3	Provision for carriage of materials and other unforeseen items					Rs. 100,000
	TOTAL CO to SUB WORK - 1					**Rs. 543,000.00**

MATERIAL STATEMENT OF DWS AND FWS REFERS TO ANNEXURE 3 & 4

PROPOSED BUILDING PLAN OF COMMERCIAL COLONY MEASURING 3.95 ACRES

Water supply hydraulic calculation

S No.	Line No	Total water Dom. demand	Peak Water Demand	Length of Pipe	Effective Length (actual	Proposed line dia.	Velocity in m/sec	Frictional head losses	Ele. Height	F. Loss in Riser	Total Friction al head	Commulative Frictional head losses	Head at Start	Head at End	Remarks
		As/Design													
		LPD	LPM	Mtr	Mtr	MM	Mtr/sec	Mtr/Mtr	Mtr	Mtr	Mtr	Mtr	Mtr	Mtr	
1	Main-UGT	60090	125.2	95.0	119	65	0.754	0.0139	63	0.869	2.515	2.515	15.00	81.13	
		PUMP (Req. cap.)	125.2 LPM		@	81	Mtr.								
		PUMP (Provided)	**125.0 LPM**		@	80	Mtr.	1W+1S							
1	Banquet-UGT	4350	72.5	130.0	163	50	0.738	0.0181	20	0.362	3.300	3.300	15.00	38.30	PRV Req.
		PUMP (Req. cap.)	72.5 LPM		@	38	Mtr.								
		PUMP (Provided)	**75.0 LPM**		@	40	Mtr.	1W+1S							

SNC

PROPOSED BUILDING PLAN OF COMMERCIAL COLONY MEASURING 3.95 ACRES

Water supply hydraulic calculation (Annexure-3)

Material satement for Domestic water supply								
S No.	Line No	Length	Valves	Dia	32 mm	50 mm	65 mm	80 mm
1	Banquet-UGT	130	2	150		130		
2	Main-UGT	95	2	~~65~~			95	
	TOTAL			100	0	130	95	0
	Valves				0	2	2	1

Annexure-5 (Bore well Supply)							
Bore well Material statement							
S No	Line No	Length		Dia	80 mm	100 mm	150 mm
1	BW1-1	50		80	50		
2	1-PUMP	25		80	25		
	Total				75	0	0

Annexure-5A (HUDA Supply)						
Municipal suplly line material statement						
S No	Line No	Length	Dia	40 mm	65 mm	100 mm
1	Main-Pump	60	~~65~~ 100		60	

Annexure-7 External Fire hydrant ring							
S No.	Line No	Length	EFH	Dia	80 mm	100 mm	150 mm
1	Main Ring	595		150			595
2	EFH	60	12	80	60		
	Total		12		60	0	595

PROPOSED BUILDING PLAN OF COMMERCIAL COLONY MEASURING 3.95 ACRES

Water supply hydraulic calculation

Flushing Water Supply For Main Towers

S No.	Line No	Total water Flu. demand	Peak water demand@ 3 of daily water demand LPD	Peak Water Demand	Length of Pipe	Effective Length (actual length+ 25%)	Proposed line dia.	Velocity in m/sec	Frictional head losses	F. Loss in Riser	Ele. Height	Total Frictional head losses	Commulative Frictional head losses	Head at Start	Head at End	Remarks
1	2	As / Design	9	10	11	12	13	14	15	16		17	18	19	20	21
2		LPD	LPD	LPM	Mtr	Mtr	MM	Mtr/sec	Mtr/Mtr	Mtr	Mtr	Mtr	Mtr	Mtr	Mtr	
3	Tower-STP	93888	281664	195.6	80.0	100	80	0.778	0.0115	0.7342	63.75	1.1517	1.152	15.00	79.90	

PUMP (Req. cap.) 195.6 LPM @ 80 Mtr.

PUMP (Provided) 200.0 LPM @ 80 Mtr. 1W+1S

Flushing Water Supply For Banquet

1	Banq.-STP	6900		115.0	135.0	169	65	0.69	0.01	0.24	20	2.23	2.23	15.00	37.47	PRV Req.

PUMP (Req. cap.) 115.0 LPM @ 37 Mtr.

PUMP (Provided) 120.0 LPM @ 40 Mtr. 1W+1S

SNC

PROPOSED BUILDING PLAN OF COMMERCIAL COLONY MEASURING 3.95 ACRES

Material statement for Flushing water supply (Annexure-4)									
S No.	Line No	Length	Valves	Dia	32 mm	50 mm	65 mm	80 mm	100 mm
1	Tower-STP	80	2	~~80~~ 100				80	
2	Banq.-STP	135	2	~~65~~ 100			135		
	Total				**0**	**0**	**135**	**80**	**0**
	Valves				**0**	**0**	**2**	**2**	

Annexure-6 Garden hydrant ring							
S No.	Line No	Length	GH	Dia	80 mm	25 mm	150 mm
1	Main Ring	560		80	560		
2	GH	80	16	25		80	
	Total		**16**		**560**	**80**	**0**

SNC

SUB WORK No. 1 — **WATER SUPPLY**
Sub Head 5 — Irrigation System

S No.	Description	Amount
1	Providing, laying, jointing and testing pipes lines conforming to IS:4985 including cost of excavation etc. complete in all respects.	
a)	80 mm Pipe 560 Mtr @ Rs. 750 (1000/- Connect to Flushing Pit)	Rs. 420,000
b)	25 mm Pipe 80 Mtr @ Rs. 220 (350/-)	Rs. 17,600
2	Providing and fixing sluice valve including cost of surface boxes and masonry chambers etc. complete in all respects.	
a)	80 mm 4 Each @ Rs. 5,000	Rs. 20,000
b)	25 mm 16 Each @ Rs. 1,500	0.40 lacs Rs. 24,000
3	Providing and fixing Garden Hydrant Chamber	
	16 Nos. @ Rs. 3,500 each (5080/-)	Rs. 56,000.00
4	Provision for carriage of materials and other unforeseen items	0.50 Rs. 100,000.00
	TOTAL CO to SUB WORK - 1	Rs. 637,600.00

1.74 lacs

MATERIAL STATEMENT OF IRRIGATION SUPPLY REFERS TO ANNEXURE 6

SUB WORK No. 1 — **WATER SUPPLY**

Sub Head 6 — Fire fighting

S No.	Description	Amount
1	Providing , Laying , jointing and testing M.S. pipes lines for fire rising main including cost of fittings, valves, connection etc. complete in all respect.	
a)	150 mm MS Pipe 595+210 = 805 Mtr @ Rs. ~~1,500~~ 1575/-	12.68 Rs. ~~892,500~~
b)	80 mm MS Pipe 60+35 = 95 Mtr @ Rs. 1,000	0.95 Rs. ~~60,000~~
2	Providing and fixing valves complete in all respects.	
a)	150 mm MS Pipe 2 Each @ Rs. ~~12~~,000	0.30 Rs. ~~12,000~~
b)	80 mm MS Pipe 12 Each @ Rs. ~~7~~,000	1.20 Rs. ~~84,000~~
3	Providing and fixing indicating plates for sluice valve and air Valves .	
	12 Nos. @ Rs. 1,000 each ~~2000~~ 1000/-	0.14 Rs. 12,000.00
4	Providing and fixing Fire Hydrant.	
	12 Nos. @ Rs. 10,000 each ~~25000~~ 12000/-	1.44 Rs. 120,000.00
5	Provision for cutting of roads and making good to its original condition	Rs. 150,000.00
6	Provision for carriage of materials and other unforeseen items	Rs. 100,000.00
	TOTAL CO to SUB WORK - 1	19.21 Lacs **Rs. ~~1,430,500~~.00** ~~1,692,500~~

MATERIAL STATEMENT OF FIRE HYDRANT REFERS TO ANNEXURE 7

SUB WORK No. 2 — **SEWERAGE SCHEME**

S No.	Description				Amount
1	Providing , jointing , cutting and testing SW pipe and lowering into trenches including cost excatvation, bed concrete, cost of manhole etc.				
a)	100 mm dia	50 Mtr.	@ Rs. 1,100	CI class LA (Bye Pass Line)	Rs. 55,000.00
b)	200 mm dia	0 Mtr.	@ Rs. 1,200	CI Class LA (Ceiling crossing)	Rs. 0.00
c)	200 mm dia	144 Mtr.	@ Rs. 1,250	SW Pipe	Rs. 180,000.00
d)	250 mm dia	137 Mtr.	@ Rs. 1,800	SW Pipe	Rs. 246,600.00
2	Provision for carriage of material (L.S)				Rs. 400,000.00
3	Provision for making connection with HUDA sewer on Master Road				Rs. 100,000.00
4	Provision for cutting of roads & making good to its original condition (L.S.)				Rs. 200,000.00
5	Provision for lighting and watering (L.S.)				Rs. 100,000.00
6	Providing STP of 175 KLD		Rs. 10,000	per KLD (L.S)	Rs. 1,750,000.00
7)	Prov. for Rcc pipe as per P.H. Rep. (L.S)				
	TOTAL CO to FINAL ABSTRACT OF COST				**Rs. 2,731,600.00**

MATERIAL STATEMENT OF SEWERAGE SCHEME REFERS TO ANNEXURE 2

PROPOSED BUILDING PLAN OF COMMERCIAL COLONY MEASURING 3.95 ACRES

DESIGN STATEMENT OF SEWERAGE LINE

Sewerage calculation

S No	Line No		Length	Total water consumption as per Water demand sheet			Daily waste water (80%) of water consumption	Total Waste water (peak=average*3)	Total Waste water (peak=average*3)	Dia Proposed	Gradiant	Velocity	Design discharge	Check for carrying capacity	Fall in (m)	G Level Upper	G Level Lower	Invert Level Upper	Invert Level Lower	Depth Start	Depth End	REMARKS
	From	To	Mtr		LPD	LPD	LPD	LPD	LPS	mm	1/	m/Sec	LPS		Mtr.	Mtr	Mtr	Mtr	Mtr	Mtr	Mtr	
1	1	2	62	Total Load	145228	145228	116182.4	348547.2	4.03	200	150	0.74	11.61	OK	0.41	227.017	227.017	226.017	225.604	1.000	1.413	
3	2	3	82	Banquet+staff	11250	156478	125182.4	375547.2	4.35	200	150	0.74	11.61	OK	0.55	227.017	227.017	225.604	225.057	1.413	1.960	
4	3	4	36			156478	125182.4	375547.2	4.35	250	200	0.74	18.23	OK	0.18	227.017	227.017	225.057	224.877	1.960	2.140	Dia Change
5	4	5	40			156478	125182.4	375547.2	4.35	250	200	0.74	18.23	OK	0.20	227.017	227.017	224.877	224.677	2.140	2.340	
6	5	7	19	1/4-Banquet	11250	167728	134182.4	402547.2	4.66	250	200	0.74	18.23	OK	0.10	227.017	227.017	224.677	224.582	2.340	2.435	
7	6	7	37			167728	134182.4	402547.2	4.66	250	200	0.74	18.23	OK	0.19	227.017	227.017	226.017	225.832	1.000	1.185	
8	7	STP	5			167728	134182.4	402547.2	4.66	250	200	0.74	18.23	OK	0.03	227.017	227.017	224.582	224.557	2.435	2.460	

SNC

PROPOSED BUILDING PLAN OF COMMERCIAL COLONY MEASURING 3.95 ACRES

Material statement for Sewerage (Annexure 2)

Towers Sewerqage MB									
S No.	*Line No*		*Length*	*Pipe Dia*	*200 mm*	*250 mm*	*300 mm*	*400 mm*	*450 mm*
			Mtr	*mm*	*Mtr.*	*Mtr.*	*Mtr.*	*Mtr.*	*Mtr.*
1	1	2	62	200	62	-	-	-	-
2	2	3	82	200	82	-	-	-	-
3	3	4	36	250	-	36	-	-	-
4	4	5	40	250	-	40	-	-	-
5	5	7	19	250	-	19	-	-	-
6	6	7	37	250	-	37	-	-	-
7	7	STP	5	250	-	5	-	-	-
TOTAL					144	137	0	0	0

Add. for exist. bldg = 65

STP Bye pass **CILA** **100 mm** 50 **200 mm** 19 **STP** 180 **KL**

39
161
~~409 m~~

Say 410 m

Say 140 m

PROPOSED BUILDING PLAN OF COMMERCIAL COLONY MEASURING 3.95 ACRES

MATERIAL STATEMENT FOR STORM WATER DRAINAGE SYSTEM ANNEXURE-2a

SL NO	NAME OF LINE	LENGTH	PIPE DIA	400MM	500MM	600MM	700MM
		MTR	MM	MTR	MTR	MTR	MTR
Drainage MB for Towers							
1	1-2	66	400	66			
2	2-3	26	400	26			
3	3-RCP 1	42	400	42			
4	RCP1-4	75	400	75			
5	4-RCP2	43	400	43			
6	RCP2-5	10	400	10			
6	5-7	45	400	45			
6	6-RCP3	15	400	15			
6	RCP3-7	16	400	16			
6	7- Huda main line	15	400	15			
	TOTAL			353.00	0.00	0.00	0.0

7) Exist. bldg. 400mm 265 m

618 m

SUB WORK No. 3 **STORM WATER DRAINAGE**

S No.	Description	Amount
1	Providing, laying, RCC pipe class NP-2 manholes etc. complete in all respects	
a)	400 mm dia 353.00 Mtr. @ Rs. ~~1,750~~	Rs. ~~617,750.00~~
2	Provision for lighting and watching	Rs. 100,000.00
3	Provision for road gullies & connecting pipe L.S.	Rs. 500,000.00
4	Provision for rainwater harvesting arrangements	
	~~Rs. 200,000.00 per acre Recharge Pit (with twin bore.) 2 Nos.~~	Rs. ~~400,000.00~~
5	Provision for timbering & shoring (L.S.)	Rs. 150,000.00
6	Provision for watering and timbering drains & other unforeseen charges	Rs. 150,000.00
7	Provision for making connection with HUDA Mains.(L.S.) 1 Nos.	Rs. 100,000.00
	TOTAL CO to FINAL ABSTRACT OF COST	**Rs. ~~2,017,750.00~~**

MATERIAL STATEMENT OF STORM WATER DRAINAGE REFERS TO ANNEXURE 2a

SUB WORK No. 4 **ROAD WORK**

Width in meter	length in meter	Metalled Portion	Area in Sqm.
5	0.00 16.50	5	0.00 82.50
6	730 ~~650.00~~	6	~~3900.00~~ 4380
7.5	7.50 0.00	7.5	0.00 56.25
Total	754.0 ~~**650**~~		~~**3900.00**~~ 4518.75
	37.70	Add 5% for curves	~~**195.00**~~ 225.95
	791.70	Total Area	~~**4095.00**~~ 4744.70

say 800 m Add for Parking = 1162.50 6207.0 say 6210 Sqm

S No.	Description	Amount
1	Provision for leveling & earth filling as per site condition	
	Approx 3.95 ~~2.88~~ Acre @ Rs. 100,000 per acre	Rs. ~~288,000.00~~
2a	Construction of roads by providing granular sub base 300 mm as per MORT & H specification conforming to clause 401 grading B 400.1	5.92 lacs
2b	Providing ,laying,spreading & compacting hand broken/ crushed stone aggregate to met mix macadam conforming to physical requirement laid in 400 of 300 mm GSB 250 mm stone aggregate MORT &H specification in two layers (compacted to 250 mm (125+125) by taking material 1.32 times of the (thickness of the layer) including per mixing of material with water in mechanical mixer .	
2c	50 mm thick BM	
2d	20 mm thick mix seal surfacing	75.52
	6210 ~~4095~~ Sqm @ Rs. 1200 ~~900~~ per sqm	Rs. ~~3,685,500.00~~
3a	Providing of kerbs and channel of CC (1:2.4) on both side of road	4.80
	800 ~~650~~ m @ Rs. 600 /M	Rs. ~~390,000.00~~
4	Provision for guide map and other unforeseen item L.S	₹ 1.00 lacs
	~~2.88 Acre~~ @ Rs. 1~~00,000 per Acre~~	Rs. ~~288,000.00~~
5	Provision for making approch to each block and pavement L.S	₹ 5.0 lacs
	~~2.88 Acre~~ @ ~~Rs. 100,000 per Acre~~	Rs. ~~288,000.00~~
6	Provision for ~~parking~~ Traffic light arrangement L.S	Rs. 100,000.00
7	Provision for carriage of material & unforeseen items L.S	Rs. 1,000,000.00
	TOTAL CO to FINAL ABSTRACT OF COST	93.24 lacs **Rs. ~~6,039,500.00~~**

MATERIAL STATEMENT OF ROAD NODS REFERS TO ANNEXURE 8

SUB WORK No. 6 — **Plantation & Road side Trees**

S No.	Description	Amount
1	**Development of Green areas (organised green of 2.88 Acres)**	
a	Trenching the ordinary soil up to dept of 60cm including removal and stacking serviceable material and disposing of by spreading and leveling within a lead of 50m and making up the trenches area to proper leads by filling with earth mixed with manure before and after flooding trench with water including cost of imported earth and manure.	
b	Rough dressing of roof area	
	Grassing with "Doob Grass" including watering and IV. Maintenance of lawns for 30 days till the grass forms a thick lawn, free from weeds and fit for moving in rows 7.5 m Apart in either direction	0.89 lacs
	Approx. 0.5925 ~~2.88~~ Acres @ Rs. 100,000 per Acres	Rs. ~~288,000.00~~
2	**Planting Tree**	
a	Providing tress, guards and planting trees along road at 12 m inteval Total road length = 3629 No of Tress = 303 say = 305 Cost Analysis of Planting Trees Excavation = ~~30~~ each 60.40 Manure = ~~60~~ each 90.00 Tree plants = ~~60~~ each 150.00 Tree guards = ~~600~~ each = Rs.~~750~~ per tree 1500 1300 1300	4.49 lacs
	345 Trees @ Rs. ~~750~~ per tree	Rs. ~~258,750.00~~
	TOTAL CO to FINAL ABSTRACT OF COST	5.38 lacs **Rs. ~~546,750.00~~**

SUB WORK No. 7 — **M/C Charges for Services & Resurfacing of road**

S No.	Description	Amount
1	Providing of M/C charges for water supply , strom water drainage, sewerage, Road, Street lighting, Horticulture etc. complete in all aspect, including Operational and establishment charges as per HUDA norms for 10 years completion	29.62 lacs
	Approx. 3.95 ~~2.88~~ Acres @ Rs. ~~3~~50,000 per Acres	Rs. ~~1,008,000.00~~
2	Providing of resurfacing of roads after 5 years 100mm thick layer 100mm thick BUSG complete to 25mm thick premix carpet with seal cost	37.26 lacs
	Approx. 6210 ~~4095.00~~ Sqm @ Rs. ~~400~~ 600/- per Sqm	Rs. ~~1,638,000.00~~
3	Providing of resurfacing of roads after 10 years with 25mm thick premix carpet with seal coat with mech.paver	46.58 lacs
	Approx. ~~4095.00~~ 6210 Sqm @ Rs. ~~600~~ 750/ per Sqm	Rs. ~~2,457,000.00~~
	TOTAL CO to FINAL ABSTRACT OF COST	113.46 lacs **Rs. ~~5,103,000.00~~**

HSVP

हरियाणा शहरी विकास प्राधिकरण
HARYANA SHEHRI
VIKAS PRADHIKARAN

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

C.E.I-No. 182180
Dated: 11/09/18
Annexure-A

SUB:- **Approval of revised Service Plan Estimates for Commercial Colony on the land measuring 3.95 acres (License No. 63 of 2008 dated 20.03.2008 & No. 92 of 2010 dated 30.10.2010) in Sector-15-II, Gurgaon Manesar Urban Complex being developed by Sh. Anumod Sharma & Others in collaboration with Experion Developers Pvt. Ltd.**

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.