

PROJECT REPORT / ESTIMATES FOR PROVIDING EXTERNAL SERVICES e.g. WATER SUPPLY, FIRE, SEWERAGE & STORM WATER DRAINAGE ETC. IN RESPECT OF Proposed Building Plan Of Affordable Group Housing Colony For An Area Measuring 7.875 Acre (License No.31 Of. 2024 Dated.26.02.2024) In Sector-3 Farukhnagar Being Developed By U.V. Landbase Pvt. Ltd.					
Gurgram is located at 28°28'N 77°02'E 28.47°N 77.03°E/28.47; 77.03. It has an average elevation of 220 metres (721 ft) Gurgram district, comprising four blocks Pataudi, Sohna, Gurgram and Farukhnagar, was created on 15 August, 1979. On its north,					
AFFORDABLE GROUP HOUSING COLONY For An Area Measuring 7.875 Acre (License No.31 Of. 2024 Dated.26.02.2024) In Sector-3 Farukhnagar Being Developed By U.V. Landbase Pvt. Ltd.					
<u>Water Supply</u>					
The source of water supply shall be HSVP / HUDA water supply connection. It has been proposed to construct underground tanks of capacity as per attached detailed for domestic and other purpose. The underground tanks will be filled up from the riser and then pumped to the overhead water tanks of each tower.					
1	<u>Source</u>				
The source of water supply in this area is tubewells as the underground water is sweet and fit for human consumption, moreover, the water is available at reasonable depth. The average yield of tubewell with 60'-80' strainer will be about 18000 lph per hour. The recharging of under ground water table in this belt is stated to be good. However still we shall resort to rain water harvesting system to keep up the recharging system. The number of tubewells required for the above area has been worked out to 3 Nos and the tubewells will be bored in tune with growth of demand to avoid absence of the tubewells. The ultimate requirement of tubewells includes provision of 10% standby.					
2	<u>Pumping Equipments</u>				
It has been proposed to install pumping set as described with standby of equal capacity. The provision for standby generating set has been provided in case of any electricity failure. Generator will be provided separately or added to the capacity of main generator.					
3	<u>Sewerage</u>				
This scheme is designed for sewer connecting to the proposed sewage treatment. The sewerage system has been marked on the respective plans.					
The sewer lines have been designed for 3 times average DWR in relation to the water supply demand assuming that 80% of the domestic water supply shall find its way into the proposed sewer SW pipe sewers have been proposed designed to run half full. The sewers have been designed on 2.50 ft. per second velocity ie. Self cleansing velocity. Necessary provisions for laying SW pipes manholes etc. has been made in this estimate.					
Necessary design statement for entire sewerage system has been prepared and attached with estimate.					
4	<u>Storm Water Drainage</u>				
The storm water drain is being designed to carry 25 mm rain fall per hour. Also suitable provisions are contemplated in our scheme to ensure better recharging of under ground water table in the area. RCC NP2 pipe drain with minimum 400 mm dia is proposed in this area.					
5	<u>Roads</u>				
Cost of road has been taken in the estimate					
6	<u>Street Lighting</u>				
Provision for street lighting on surrounding area has been made.					
7	<u>Horticulture</u>				
Estimates and details of plantation, landscaping, signage etc. has been included					
8	<u>Specifications :</u>				
The work will be carried out in accordance with the standard specifications of PH Department as laid down by the HSPV / HUDA/Haryana Government.					

9	<u>Rates</u>					
	Estimates for providing services in this site has been prepared on the recent HSVP rates.					
10	<u>Cost</u>					
	The total cost of development in this Project including various PH & B & R services works out to Rs. 1143.0 lacs which includes 3% contingency and PE charges and 49% departmental charges also.					
	The cost per gross acre for this works out to Rs. 145.14 Lacs/acre which covers the provision of services like water supply, sewerage, storm water drainage, roads, street lighting and plantations including plantations maintenance thereof as well as future expansion whatsoever indicated.					
	For U.V. LANDBASE PVT. LTD.					
	Authorised Signatory					

Project :-PROPOSED AFFORDABLE GROUP HOUSING COLONY FOR AN AREA MEASURING.7.875 ACRE IN SECTOR-3 OF TEHSIL VILLAGE-FARRUKHNAGAR DISTRICT. GURUGRAM,HARYANA						
1	DESIGN CALCULATION					
i)	Daily Domestic Water Requirement					
a)	Residential (D.U)			1124		
	Population @ 5 person per unit - DU			5		
	Therefore population (DU)			5620	persons	
	Population (Maintenance & Security Personnel)			100	persons	
	Total Population			5720	persons	
			SAY	5720	persons	
	Water requirement		@	172.5	liter / head / day	
				986700.00	lpd	
			or	986.70	KLD ____ (a)	
b)	Anganwadi	0.0482	@	25000	lit/acre/day	
	Therefore daily water requirement			1204.60	lit/day	
				1.20	KLD ____ (b)	
c)	Community center / Common facilities	0.0482	@	25000	lit/acre/day	
	Daily water requirement			1204.60	lit/day	
	Therefore daily water requirement			1.20	KLD ____ (c)	
d)	No. of Convenient Shopping	0.775303	@	32000	lit/acre	
	Daily water requirement			24809.68619	lit/day	
	Therefore daily water requirement			24.90	KLD ____ (d)	
ii)	Total Daily Water Requirement for (a+b+c+d)			1014.01	KLD	
a)	Domestic Water Requirement @	67%		679.39	KLD	
			Say	680.00	KLD	
b)	Flushing Water Requirement @	33%		334.62	KLD	
			Say	335.00	KLD	
iii)	Water usage from STP					
a)	Area under Parks	1.37	acre	@	25000	lit/acre/day
	Daily water requirement				34296.02	lit/day
					34.30	KLD
b)	Area under Roads & Open Parking Area	3.80	acre		5000	lit/acre/day
	Daily water requirement				19010.01	lit/day
					19.02	KLD
c)	Under Road+ Parks (a+b)		Total	53.32	KLD	
			Say	53.40	KLD	
iv)	Total treated water requirement [ii (b) + iii (c)]			389.00	KLD	
v)	Total Daily Requirement [ii (a) + iv]			1069.00	KLD	
			SAY	1069.00	KLD	
2	Tubewell					
	Assuming working hours of tubewells			14	hours	
	Assuming discharge/hour of each tubewell			18	KL/hours	
	Total fresh water demand			680.00	KLD	

No. of tubewells required	680.00	/18/14	2.70		
Add 10% standby			0.27		
		Total	2.97		
		Say	3.00		
So It is proposed 3 No.of tubewell if permission will get from CGWA. the provision of 3 nos. of tubewell has been made in the estimate because the water demand for flushing, horticulture and the road washing purpose is to be meet from recirculation after treatment at STP and ultimate water supply is to be provided by HSVP					
3 Pumping machinery for tubewell					
Gross working load		=	55.00	m	
Average fall in SL		=	3.05	m	
Depression head		=	6.10	m	
Friction loss in main		=	2.50	m	
		=	66.65	m	
	Say	=	70.00	m	
BHP = 18000x70x1/60x60x75x0.6		=	7.78	BHP	
With 60% efficiency	Say		10.00	BHP	
It is proposed to install 3 nos. Submersible pumping set with a discharge of 18000 ltrs/hrs driven With 10.00 hp electrical motor					
4 Underground Tanks					
4.1 Domestic Underground Tank					
Daily fresh water requirement for domestic use			=	680.00	KL
Capacity of under ground tank					
24 hours storage	680.00 x 24 / 24		=	680.00	KL
	Say Total			680.00	KL
4.2 Fire water tank demand					
Fire Tank Capacity Proposed As / IS Code 15105 & NBC 2016 (as no. of hydrants are more than 100)			=	150.00	KL
say			=	150.00	KL
Capacity of under ground tank for Domestic use including fire fighting			=	830.00	KL
	Say Total			850.00	KL
It is proposed to provide under ground tank of capacity 830 KL which also includes 150 KL capacity for fire fighting.					
This tank will have Six compartments, Two for fire, Two for raw and the other two for domestic use. The water first enters the fire compartment, then over flows to the raw use compartment so that the water in the fire compartment shall remain fresh.					

4.3 STP Underground Tank					
Daily recycled water requirement for flushing & irrigation use			=	389.00	KL
Capacity of Recycled Treated water tank 24 hours storage			=	389.00	KL
	Say		=	390.00	KL
TOTAL UG STORAGE (DOMESTIC + FLUSHING + HORTICULTURE)				1240.00	KL
FIRE WATER TANK				150.00	KL
RAW WATER TANK				350.00	KL
DOMESTIC WATER TANK				350.00	KL
FLUSHING, HORTICULTURE & ROAD WASHING (PART OF STP)				390.00	KL
PROPOSED CAPACITY OF STP (80% OF DOMESTIC AND FLUSHING WATER)				992.00	KLD
	Say		=	1000.00	KLD
5 DOMESTIC WATER PUMPS - LOCATED IN PUMP ROOM					
a.) RAW WATER FILTER FEED PUMP					
Daily requirement for domestic use			=	680.00	KL
Assuming 12 hours running 1 pumps (with one standby)					
Discharge/hour	680.00	/ 12 / 1	=	56.67	KL/HR
Head of pump					
i) Suction lifts			=	0.0	m
ii) Friction loss in M<main & specials			=	0.0	m
iii) Clear head			=	35.0	m
			=	35.0	m
BHP of motor	56.67	x1000x35/4500x60x0.60		12.2	HP
		SAY	=	13.00	HP
b.) Domestic Water Transfer Pumps					
Daily requirement for domestic use overhead tank filling			=	680.00	KL
Assuming 6 hours running 2 pumps (with one standby)					
Discharge/hour	680	/ 6 / 2	=	56.67	KL/HR
Head of pump					
i) Suction lifts			=	0.0	m
ii) Friction loss in M<main & specials			=	21.1	m
iii) Clear head			=	44.95	m
iv) Residual head			=	15.0	m
			=	81.0	m
Adding Safety Factor @ 10%			=	89.1	m
			Say =	90.0	m
BHP of motor	56.67	x1000x90/4500x60x0.60		31.5	HP
		SAY	=	32.00	HP
6 FLUSHING WATER PUMPS - LOCATED IN STP					
Daily requirement for flushing use			=	389.00	KL
Assuming 8 hours running 2 pumps (with one standby)					
Discharge/hour	389.00	/ 8 / 2	=	24.31	KL/HR
Head of pump					
i) Suction lifts			=	0.0	m
ii) Friction loss in M<main & specials			=	30.8	m
iii) Clear head			=	44.95	m
iv) Residual head			=	15.0	m
			=	90.8	m
Adding Safety Factor @ 10%			=	99.8	m
			Say =	100.0	m
BHP of motor	24.31	x1000x100/4500x60x0.60		15.0	HP
		SAY	=	16.00	HP

7 PUMPS FOR FIRE PROECTION						
	Pump Description	Location	Nos.	Discharge	Head	HP
i)	Diesel Pump -1	Pump Room	1	2280	110.00	
ii)	Diesel Pump -2	Pump Room	1	2280	110.00	95
ii)	Hydrant Pump	Pump Room	1	2280	110.00	95
iii)	Jockey Pump	Pump Room	1	180	110.00	7.5
8	Capacity of Gen Set	Nos.	HP			
a.)	Raw Water Transfer Pumps (1 Working + 1 Standby)	1	13.0	=	13	HP
b.)	Domestic water transfer pumps (1 Working + 1 Standby)	2	32.0	=	64	HP
c.)	Flushing water transfer pumps (2 Working + 1 Standby)	2	16.0	=	32	HP
d)	Fire Pump (Jockey)	1	7.5	=	7.5	HP
e.)	Tubewell	3	10.0	=	30	HP
f.)	Lighting			=	25	HP
	Total				171.5	HP
		or	171.5	x0.746x1.50	191.91	KVA
				Say	200.00	KVA
Requirement of 200 KVA capacity will be added in to the main D.G. set to provide standby supply.						

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ACRE IN SECTOR-3 OF TEHSIL VILLAGE-FARRUKHNAGAR DISTRICT. GURUGRAM,HARYANA**

For U.V. LANDBASE PVT. LTD.

Description	Amount (Lacs.)
Sub Work - I Water Supply	357.80
Sub Work - II Sewerage	272.10
Sub Work - III Storm Water Drainage	75.35
Sub Work - IV Roads & Footpath	284.38
Sub Work - V Street Lighting	30.21
Sub Work - VI - Horticulture	23.60
Sub Work - VII - Maintenance of Services for 10 years including resurfacing of roads after 1st 5 years & II phase i.e. 10 years of maintenance (as per HUDA norms)	99.40
Total	1142.84
Say	1143.00

(RUPEES ELEVEN CRORE FOURTY THREE LACS ONLY)

For U.V. LANDBASE PVT. LTD.

Authorized Signatory

SUMMARY OF SUB WORK - I (WATER SUPPLY)

Amount (Lacs.)

Sub Head - (I) Head Works				81.80	
Sub Head - (II) Pumping Machinery				95.40	
Sub Head - (III) Distribution System				25.50	
Sub Head - (IV) Irrigation Scheme				2.44	
Sub Head - (V) Fire Scheme				28.00	
Total				233.14	
Add 3% Contingencies				6.99	
				240.13	
Add 49% Departmental Charges				117.67	
		Total		357.80	
(CO to final abstract of cost)			Say	357.80	

Sub Work I				Water Supply	
Sub Head No. I				Head Works	
S. No.	Description	Unit	Qty	Rate	Amount (Rs.) (in Lakhs)
1	Boring and installing 510 mm i/d tubewells with reverse/direct rotary rig complete with pipe strainer to a depth of about 80 m. complete	Nos.	3	1000000.00	30.00
2	Constructing pump chambers as per standard design of PWD PH/HUDA of size 1.50x1.50 m	Nos.	3	100000.00	3.00
3	Construction of boosting chambers of suitable size along with under ground tank of capacity 460 KL pumping machinery and generating set etc. complete in all respects.				
	Details of boosting station				
i)	construction of boosting chamber	Nos.	3	LS	7.50
ii)	UG tank 850 KL capacity including 150 KL for fire fighting @ 4500 / KL.	KL	850.00	4500.00	38.25
4	Provision for carriage of material and other unforeseen items				1.00
5	Provision for facilities staff for Maintenance				2.00
	(C.O. to abstract of cost of Sub-work No.I)				81.75 Lacs
				Say	81.80 Lacs

Sub Work I			Water Supply			
Sub Head No. II			Pumping Machinery			
S. No.	Description	Unit	Qty	Rate	Amount (Rs.) (in Lakhs)	
1	Providing & installing electricity driven electro or submersible pumping set capable of delivering 18 KL/hrs of water against a total head of 70 m complete with motor and other accessories.	Nos.	3	160000.00	4.80	
2	Providing & installing electricity driven pumping set capable of delivering 945 LPM of water against a total head of 35 m complete with motor and other accessories (For Filter feed pump - 13HP) (1 working + 1 standby)	Nos.	2	300000.00	6.00	
3	Providing & installing electricity driven pumping set capable of delivering 945 LPM of water against a total head of 90 m complete with motor and other accessories (For Domestic - 32 HP) (2 working + 1 standby)	Nos.	3	330000.00	9.90	
4	Providing & installing electricity driven pumping set capable of delivering 406 LPM of water against a total head of 100 m complete with motor and other accessories (For Flushing - 16 HP) (2 working + 1 standby)	Nos.	3	280000.00	8.40	
5	Provision for diesel engine generator set each for standby Arrangements for booster pump complete with gear head arrangements of following capacities. 1 No. - 200 KVA	KVA	200.00	20000.00	40.00	
6	Providing & installing fire pumps electrical operated pumps 2280 LPM -1No, Jockey pump 180 LPM-2No, Diesel operated pumps 2280 LPM -1 Nos. complete with all the accessories suction and delivery header ect.	LS			20.00	
7	Provision for diesel engine genset stand bye arrangements for Tubewells	Nos.	1	150000.00	1.50	
8	Provision for cheap pressure type chlorination plant complete	LS			1.00	
9	Provision for making foundations & erection of pumping machinery	LS			1.00	
10	Provision for pipes, valves & specials inside the pump chamber	LS			1.00	
11	Provision for electric services connection including electric fittings for tubewells chambers complete	LS			1.00	
12	Provision for carriage for materials and other unforeseen items	LS			0.75	
	(C.O. to abstract of cost of Sub-work No.I)				95.35	
				Say	95.40	

Sub Work I			Water Supply		
Sub Head No. III			Distribution System/Rising Main		
S. No.	Description	Unit	Qty	Rate	Amount (Rs.)
1	Providing, laying, jointing & testing G.I pipes including cost of excavation complete as per ISI marked. (Domestic water supply line)				
a)	25 mm dia	M	10	250.00	2500.00
b)	40 mm dia	M	64	600.00	38400.00
c)	65 mm dia	M	100	875.00	87500.00
d)	80 mm dia	M	0	1000.00	0.00
e)	100 mm dia	M	0	1250.00	0.00
f)	150 mm dia	M	571	1650.00	942150.00
2	Providing, laying, jointing & testing upvc pipes SH-80 confirming to IS 4985 including cost of exavation complete as per ISI marked (Flushing water supply line)				
a)	25 mm dia	M	67	250.00	16750.00
b)	32 mm dia	M	0	350.00	0.00
c)	40 mm dia	M	100	550.00	55000.00
d)	65 mm dia	M	0	750.00	0.00
e)	80 mm dia	M	0	800.00	0.00
f)	100 mm dia	M	522	1000.00	522000.00
3	Providing, fixing & Testing Ball valves including cost of complete in all respects.				
i)	25 mm dia	Nos.	3	900.00	2700.00
ii)	32 mm dia	Nos.	0	1250.00	0.00
iii)	40 mm dia	Nos.	11	1500.00	16500.00
3	Providing, fixing & Testing Sluice valves including cost of complete in all respects.				
i)	65 mm i/d	Nos.	10	8500.00	85000.00
ii)	80 mm i/d	Nos.	2	10000.00	20000.00
iii)	100 mm i/d	Nos.	4	12000.00	48000.00
iv)	150 mm i/d	Nos.	6	15000.00	90000.00
4	Providing, fixing & Testing Non Return valves (NRV) including cost of complete in all respects.				
i)	80 mm i/d	Nos.	1	12000.00	12000.00
4	Providing and fixing air valves and scour valves including cost of complete in all respects.				
		Nos.	4	10000.00	40000.00
5	Providing and fixing indicating plates for sluice valve, air valve etc.				
		Nos.	14	1000.00	14000.00
6	Provision for carriage of material	LS	-	-	100000.00
7	Provision for cutting the roads and making to its original conditions.	LS	-	-	100000.00
8	Making water supply connection.	LS	-	-	100000.00
10	providing laying jointing & testing of DI K-9 pipes including cost of excavation complete as per ISI marked for rising main from tubewells to UG Tank				
i)	100 mm i/d	M	275	950.00	261250.00
ii)	150 mm i/d	M	0	1250.00	0.00
	(C.O. to abstract of cost of Sub-work No.I)				2551250.00
				Say	25.50 Lacs

S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	

S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
Sub Work I					Water Supply	
Sub Head No. IV					Irrigation	
S. No.	Description	Unit	Qty	Rate	Amount	
1	Providing, laying, jointing & testing uPVC SH-40 pipe line conforming to IS 4985 including cost of Excavation etc. complete in all respect.					
a	25 mm dia	M	90	300.00	27060.00	
b	32 mm dia	M	57	450.00	25515.00	
c	40 mm dia	M	59	600.00	35220.00	
d	65 mm dia	M	33	750.00	24825.00	
e	80 mm dia	M	0	850.00	0.00	
f	100 mm dia	M	79	1000.00	78500.00	
2	Providing and fixing 20mm dia Irrigation hydrant valve complete in all respect.	Nos.	11	3500.00	38500.00	
3	Providing & fixing valve 25mm dia	Nos.	11	400.00	4400.00	
7	Provision for carriage of materials etc. and other unforeseen charges	LS	-	-	10000.00	
	(C.O. to abstract of cost of Sub-work No.I)			Total	244020.00	
				Say	2.44 Lacs	
Sub Work I					Water Supply	
Sub Head No. V					Fire Scheme	
S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
1	Providing, laying, jointing & testing M.S. pipes for fire ring main including cost of Fittings, Valves & excavation complete (as per ISI marked) in all respect.					
a)	150 mm dia	M	1110	1850.00	2053500.00	
b)	100 mm dia	M	150	1550.00	232500.00	
c)	80 mm dia	M	48	1200.00	57600.00	
2	Providing and fixing External Fire Hydrant and accesories.	Nos.	19	7500.00	142500.00	
3	Providing & fixing sluice valve.					
a)	150 mm dia	Nos.	4	15000.00	60000.00	
b)	100 mm dia	Nos.	0	12000.00	0.00	
c)	80 mm dia	Nos.	0	10000.00	0.00	
5	Provision for security services equipments for fire fighting	LS	-	-	300000.00	
	(C.O. to abstract of cost of Sub-work No.I)			Total	2846100.00	
				Say	28.00 Lacs	

S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
Sub Work II		Sewerage Scheme				
S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
1	Providing, lowering, jointing of DWC HDPE pipe and specials into trenches including cost of excavation, bed concrete lot of manholes complete.					
i) 200 mm i/d						
a)	Average depth 0.0 m to 1.5 m	M	452	1250.00	565000.00	
a)	Average depth 1.5 m to 4.5 m	M	261	1500.00	391500.00	
b)	Average depth 4.5 m to 6.0 m	M	0	1800.00	0.00	
i) 250 mm i/d						
a)	Average depth 0.0 m to 1.5 m	M	0	1500.00	0.00	
a)	Average depth 1.5 m to 4.5 m	M	108	1800.00	194400.00	
b)	Average depth 4.5 m to 6.0 m	M	0	2250.00	0.00	
ii) 300 mm i/d						
a)	Average depth 1.5 m to 4.5 m	M	12	1800.00	21600.00	
b)	Average depth 4.5 m to 6.0 m	M	0	2250.00	0.00	
2	Provision for lighting, watching and temporary diversion of traffic	LS	-	-	100000.00	
3	Provision for timbering and shuttering	LS	-	-	100000.00	
4	Provision for cutting of roads and carriage of materials etc. and other unforeseen charges	LS	-	-	100000.00	
5	Provision for connection with HSVP / GMDA line	LS	-	-	100000.00	
6	Cost of 1000Kld Sewerage Treatment Plant.	Per KLD	1000	16000	16000000.00	
7	Provision for CI / DI pipe 150 mm dia pipe from STP. To Huda Main Line.	Mtrs	100	1575	157500.00	
				Total	17730000.00	
	Add 3% contingencies				531900	
					18261900.00	
	Add 49% Deptt. Charges				8948331	
				Total	27210231.00	
				Say	272.10 Lacs	

S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
Sub Work - III		Storm Water Drain				
S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
1	Providing, lowering, jointing, cutting RCC NP2 pipes and specials into trenches including cost of excavation cost of manholes, ventilating chambers etc. complete in all respects.					
i)	400 mm i/d					
a)	Average depth upto 1.5 m	M	926	2500.00	2315000.00	
b)	Average depth 1.5 m to 4.5 m	M	37	2600.00	96200.00	
ii)	500 mm i/d					
a)	Average depth upto 1.5 m	M	0	3200.00	0.00	
b)	Average depth 1.5 m to 4.5 m	M	0	3800.00	0.00	
2	Provision for Road Gully & Drain	LS	-	-	250000.00	
3	Provision for cutting of roads and carriage of materials etc. and other unforeseen items	LS	-	-	100000.00	
4	Costruction of rain water harvesting pit of material as per details and spacification given below and as per attached drawing including, cost of excavation of all kind soil foundation trances of drain including dressing of sides of remming and getting out excavtion of soil	Nos	8	250000.00	2000000.00	
5	Provision for lighting, watching and temporary diversion of traffic	LS	-	-	100000.00	
6	Provision for connection with HSVP / GMDA line					
	400 mm i/d (Average depth upto 1.5 m)	M		2600.00	0.00	
	500 mm i/d (Average depth upto 1.5 m)	M	13	3750.00	48750.00	
				Total	4909950.00	
	Add 3% contingencies				147298.50	
					5057248.50	
	Add 49% Deptt. Charges				2478051.765	
				Total	7535300.27	
				SAY	75.35 Lacs	

S. No.	Description	Unit	Qty	Rate	Amount (Rs.)
Sub Work IV			Road Work		
S. No.	Description	Unit	Qty	Rate	Amount (Rs.)
1	Provision for leveling & earth filling as per site condition	Acres	7.875	175000	1378125.00
2	Construction of road by:- i) 200 mm thick GSB ii) 250 mm thick WMM iii) 50 mm thick DBM iv) 25 mm thick BL	Sq. mtr.	6771.7	1200	8126078.40
3	Providing for kerbs & Chennels 6 mtrs wide road (1026.02 x 2 =2052.0)	M	2052.0	600	1231224.00
4	Provision of foot path of precast conc. 6 mtrs wide road (1026.02 x 1.2 x 2 =1050.96)	Sq. mtr.	1051.0	750	788250.00
5	Provision for parking arrangement 8614.97 sqm.@ 750/sqm	Sq. mtr.	8614.97	750	6461227.50
6	Provision for Carriage of material	LS.			150000.00
7	Provision for traffic lighting and guide map/ indicators	LS.			150000.00
8	Provision for tower indicator	LS.			150000.00
9	Provision for demarc above and unformation items	LS.			95000.00
Total					18529904.90
Add 3% contingencies					555897.15
					19085802.05
Add 49 % department charges					9352043.00
					28437845.05
SAY				Total SAY	284.38 Lacs

S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
Sub Work V					Street Lighting	
S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
1	Providing and fixing of Street Lighting on internal roads as per standard specification of HVPNL and CFL complete in all respect					
	Provision made on LS cost @ 250000 per acres	Acres	7.875	250000.00	1968750.00	
	Add 3% contingencies				59062.50	
	Total				2027812.50	
	Add 49% Deptt. Charges				993628.125	
			Total		3021441.00	
		SAY			30.21	Lacs
Sub Work VI					Horticulture	
S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
1	Development of lawn area					
	a) Trenching the ordinary soil upto depth of 60 cm. Including removal & packing of serviceable material & disposing at a lead of 50 M and making up the trenched area to proper level by filling with earth mixed with manure before & after flooding trench with water including cost of imported earth & manure.					
	b) Rough dressing of trenched area.					
	c) Grassing including watering & maintenance of lawns free from weeds & fit for mowing in rows including hedges, shrubs & green belts (as per HSVP / HUDA Norms)	per acre	7.875	150000	1181250	
	Planting of tree with tree guards on green at 20 m intervals along with road					
	Road $1026.02 / 12 = 85.502 \times 2 = 171$ say - 171 Nos.)					
	Green $(1026.02 \times 2 / 20 = 102.6$ Say = 103 Nos.)					
	$(171+103 = 274)$ trees @ Rs. 1300/- each	Nos.	274	1300	3,56,200	
					1537450.00	
	Add 3% contingency charges				46123.50	
					1583573.50	
	Add 49% Deptt. Charges				775951.02	
			Total		2359524.52	
			Say		23.60	Lacs

S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
Sub Work VII					Maintenance Charges & Resurfacing of Roads	
S. No.	Description	Unit	Qty	Rate	Amount (Rs.)	
1	Provision for maintenance charges for water supply, sewerage, storm water drainages, roads, street light, horticulture etc. complete including operation & establishments charges as per HUDA norms after completion & resurfacing of roads after 10 years or 1st phase.					
	7.875 acres @ 5 lacs per acre	per acre	7.875	500000	3937500	
2	Provision for resurfacing & strengthening of road after five years of 1st phase @ 250/- per sqm	Sq. mtr.	6771.7	250	1692933.00	
3	Provision for resurfacing & strengthening of road after ten years of 2 nd phase @ 125/- per sqm	Sq. mtr.	6771.7	125	846466.50	
					6476899.5	
	Add 3% contingency & PE charges				194306.985	
				Total	6671206.485	
	Add 49% Departmental charges				3268891.178	
				Total	9940097.663	
			say		99.40 Lacs	

Project :-PROPOSED AFFORDABLE GROUP HOUSING COLONY FOR AN AREA MEASURING.7.875 ACRE IN SECTOR-3 OF TEHSIL VILLAGE-FARRUKHNAGAR DISTRICT. GURUGRAM,HARYANA

DESIGN CALCULATION FOR SEWERAGE LINE

S.N o.	sewerage Line No.		Length(m)	Design of Sewerage System			Population	Sewage flow @ 80%LPCD	Peak Flow(lpd)	Peak Flow (lps)	Pipe Size(mm)	Slope (1 in)	Velocity (m/s)	Capacity of pipe(lps)	Check For Pipe Size	Fall(m)	Fall(mm)	Ground Level(mm)		Invert Level(mm)		q/Q	va/v	Actual velocity (va)	d/D	Depth(mm)	
	From	To		Self	Prev.	Total												Start	End	Start	End					Start	End
				Units																							
1	S1	S2	111.00	168	0	168	840	115920	289800	3.354	200	250	0.780	12.262	OK	0.444	444.00	700	700	-300	-744.0	0.140	0.710	0.554	0.260	1000.00	1444.00
2	S2	S4	40.00	28	168	196	980	135240	338100	3.913	200	250	0.780	12.262	OK	0.160	160.00	700	700	-744	-904.0	0.160	0.740	0.577	0.280	1444.00	1604.00
3	S3	S4	64.00	140	0	140	700	96600	241500	2.795	200	250	0.780	12.262	OK	0.256	256.00	700	700	-300	-556.0	0.110	0.670	0.523	0.230	1000.00	1256.00
4	S4	S6	8.00	0	336	336	1680	231840	579600	6.708	200	250	0.780	12.262	OK	0.032	32.00	700	700	-904	-936.0	0.270	0.850	0.663	0.360	1604.00	1636.00
5	S5	S6	52.00	58	0	58	290	40020	100050	1.158	200	250	0.780	12.262	OK	0.208	208.00	700	700	-300	-508.0	0.050	0.530	0.414	0.160	1000.00	1208.00
6	S6	S16	13.50	0	394	394	1970	271860	679650	7.866	200	250	0.780	12.262	OK	0.054	54.00	700	700	-936	-990.0	0.320	0.890	0.695	0.390	1636.00	1690.00
7	S7	S8	22.50	0	0	0	0	19848	49619.2	0.574	200	250	0.780	12.262	OK	0.090	90.00	100	700	-900	-990.0	0.020	0.400	0.312	0.100	1000.00	1690.00
8	S8	S9	78.00	168	0	168	840	115920	289800	3.354	200	250	0.780	12.262	OK	0.312	312.00	700	700	-990	-1302.0	0.140	0.710	0.554	0.260	1690.00	2002.00
9	S9	S10	86.50	168	168	336	1680	231840	579600	6.708	200	250	0.780	12.262	OK	0.346	346.00	700	100	-1302	-1648.0	0.270	0.850	0.663	0.360	2002.00	1748.00
10	S10	S13	35.00	0	336	336	1680	231840	579600	6.708	200	250	0.780	12.262	OK	0.140	140.00	100	100	-1648	-1788.0	0.270	0.850	0.663	0.360	1748.00	1888.00
11	S11	S12	87.50	168	0	168	840	117848	294620	3.410	200	250	0.780	12.262	OK	0.350	350.00										
																		700	700	-300	-650.0	0.140	0.710	0.554	0.260	1000.00	1350.00
12	S12	S13	86.00	168	168	336	1680	231840	579600	6.708	200	250	0.780	12.262	OK	0.344	344.00	700	100	-650	-994.0	0.270	0.850	0.663	0.360	1350.00	1094.00
13	S13	S15	94.00	0	672	672	3360	463680	1159200	13.417	250	300	0.827	20.296	OK	0.313	313.33	100	700	-1788	-2101	0.330	0.900	0.744	0.400	1888.00	2801.33
14	S14	S15	29.00	58	0	58	290	40020	100050	1.158	200	250	0.780	12.262	OK	0.116	116.00	700	700	-300	-416.0	0.050	0.530	0.414	0.160	1000.00	1116.00
15	S15	S16	14.00	0	730	730	3650	503700	1259250	14.575	250	300	0.827	20.296	OK	0.047	46.67	700	700	-2101	-2148	0.360	0.920	0.760	0.420	2801.33	2848.00
16	S16	STP	12.00	0	1124	1124	5620	775560	1938900	22.441	300	350	0.864	30.556	OK	0.034	34.29	700	700	-2148	-2182	0.370	0.930	0.804	0.430	2848.00	2882.29

**Project :-PROPOSED AFFORDABLE GROUP HOUSING COLONY FOR AN AREA MEASURING 7.875 ACRE IN SECTOR-3 OF TEHSIL VILLAGE-
FARRUKHNAGAR DISTRICT. GURUGRAM, HARYANA**

TITLE - SEWER QUANTITY SHEET

S.No.	Line No.		Length (mtr.)	Dia of Pipe (mm) (mtr.)		Slope	Fall mtr	Depth			Excavation Depth (cum.)	EXCAVATION			
	From	To						Start (mtr.)	End (mtr.)	Avg. (mtr.)		0.0 -1.5 (mtr.)	1.5 - 3.0 (mtr.)	3.0 - 4.5 (mtr.)	4.5 - 6.0 (mtr.)
	START														
1	S1	S2	111.00	200	0.200	250	0.44	1.00	1.44	1.22	101.37	111.0	0.0	0.0	0.0
2	S2	S4	40.00	200	0.200	250	0.16	1.44	1.60	1.52	43.78	0.0	40.0	0.0	0.0
3	S3	S4	64.00	200	0.200	250	0.26	1.00	1.26	1.13	54.84	64.0	0.0	0.0	0.0
4	S4	S6	8.00	200	0.200	250	0.03	1.60	1.64	1.62	9.22	0.0	8.0	0.0	0.0
5	S5	S6	52.00	200	0.200	250	0.21	1.00	1.21	1.10	43.80	52.0	0.0	0.0	0.0
6	S6	S16	13.50	200	0.200	250	0.05	1.64	1.69	1.66	15.90	0.0	13.5	0.0	0.0
7	S7	S8	22.50	200	0.200	250	0.09	1.00	1.69	1.35	22.21	22.5	0.0	0.0	0.0
8	S8	S9	78.00	200	0.200	250	0.31	1.69	2.00	1.85	100.43	0.0	78.0	0.0	0.0
9	S9	S10	86.50	200	0.200	250	0.35	2.00	1.75	1.88	112.88	0.0	86.5	0.0	0.0
10	S10	S13	35.00	200	0.200	250	0.14	1.75	1.89	1.82	44.48	0.0	35.0	0.0	0.0
11	S11	S12	87.50	200	0.200	250	0.35	1.00	1.35	1.18	77.44	87.5	0.0	0.0	0.0
12	S12	S13	86.00	200	0.200	250	0.34	1.35	1.09	1.22	78.54	86.0	0.0	0.0	0.0
13	S13	S15	94.00	250	0.250	300	0.31	1.89	2.80	2.34	161.59	0.0	94.0	0.0	0.0
14	S14	S15	29.00	200	0.200	250	0.12	1.00	1.12	1.06	23.63	29.0	0.0	0.0	0.0
15	S15	S16	14.00	250	0.250	300	0.05	2.80	2.85	2.82	28.43	0.0	14.0	0.0	0.0
16	S16	STP	12.00	300	0.300	350	0.03	2.85	2.88	2.87	26.59	0.0	12.0	0.0	0.0
Total			833.0								946.0	452.0	381.0	0.0	0.0
Pipe in excavation depth															
			(0.0 - 1.5)	(1.5 - 3.0)	(3.0 - 4.5)	(4.5 - 6.0)									
200 mm Dia pipe			452.0	261.0	0.0	0.0									
250 mm Dia pipe			0.0	108.0	0.0	0.0									
300 mm Dia pipe			0.0	12.0	0.0	0.0									

Project :-PROPOSED AFFORDABLE GROUP HOUSING COLONY FOR AN AREA MEASURING.7.875 ACRE IN SECTOR-3 OF TEHSIL VILLAGE-FARRUKHNAGAR DISTRICT. GURUGRAM,HARYANA

DESIGN CALCULATION FOR STORM LINE																							
SL. NO	NAME OF THE LINE		AREA TO BE SERVED IN SQM.	AREA TO BE SERVED IN ACRES			DISCHARGE @ 1/4" RAIN FALL	FINAL DISCHARGE	SIZE OF PIPE DRAIN (IN MM)	VELOCITY	DISCHARGE CAPACITY	Check	LENGTH OF PIPE	SLOPE	FALL IN MET-ERS	FALL IN (MM)	GROUND LEVEL		INVERT LEVEL		DEPTH OF PIPE AT		AVERAGE DEPTH OF PIPE
	From	To	SELF	SELF	PREVIOUS	TOTAL	6.25MM/HR								As per pipe slope	As per pipe slope	U/End	L/End	U/End	L/End	U/End	L/End	
							(lnM3/sec)	(ln LPS)	(ln mm)	(ln m/sec)	(ln LPS)		(ln mtrs.)	(ln mtrs.)	(ln mtrs.)	(ln mm.)	(ln mm.)	(ln mm.)	(ln mm.)	(ln mm.)	(ln mm.)	(ln mm.)	(ln mm.)
1	ST1	ST3	2000	0.49	0.00	0.49	0.003471	3.5	400	0.78	98.21	OK	49.80	450	0.1107	110.67	700.00	700.00	-500	-611	1200.00	1310.67	1255.33
2	ST2	ST3	2600	0.64	0.00	0.64	0.004513	4.5	400	0.78	98.21	OK	83.20	450	0.1849	184.89	700.00	700.00	-500	-685	1200.00	1384.89	1292.44
3	ST3	RWH-1	100	0.02	1.14	1.16	0.008158	8.2	400	0.78	98.21	OK	7.00	450	0.0156	15.56	700.00	700.00	-685	-700	1384.89	1400.44	1392.67
4	RWH-1	ST4	0	0.00	1.16	1.16	0.008158	8.2	400	0.78	98.21	OK	6.60	450	0.0147	14.67	700.00	700.00	-700	-715	1400.44	1415.11	1407.78
5	ST4	ST6	1500	0.37	1.16	1.53	0.010762	10.8	400	0.78	98.21	OK	30.00	450	0.0667	66.67	700.00	700.00	-715	-782	1415.11	1481.78	1448.44
6	ST5	ST6	3800	0.94	0.00	0.94	0.006596	6.6	400	0.78	98.21	OK	127.00	450	0.2822	282.22	700.00	700.00	-500	-782	1200.00	1482.22	1341.11
7	ST6	RWH-2	100	0.02	2.47	2.50	0.017531	17.5	400	0.78	98.21	OK	8.50	450	0.0189	18.89	700.00	700.00	-782	-801	1482.22	1501.11	1491.67
8	RWH2	ST7	0	0.00	2.50	2.50	0.017531	17.5	400	0.78	98.21	OK	8.00	450	0.0178	17.78	700.00	700.00	-801	-819	1501.11	1518.89	1510.00
9	ST-7	ST10	1500	0.37	2.50	2.87	0.020135	20.1	400	0.78	98.21	OK	19.80	450	0.0440	44.00	700.00	700.00	-819	-863	1518.89	1562.89	1540.89
10	ST8	ST9	2000	0.49	0.00	0.49	0.003471	3.5	400	0.78	98.21	OK	73.00	450	0.1622	162.22	700.00	700.00	-500	-662	1200.00	1362.22	1281.11
11	ST9	RWH-3	100	0.02	0.49	0.52	0.003645	3.6	400	0.78	98.21	OK	5.20	450	0.0116	11.56	700.00	700.00	-662	-674	1362.22	1373.78	1368.00
12	RWH-3	ST10	0	0.00	0.52	0.52	0.003645	3.6	400	0.78	98.21	OK	15.20	450	0.0338	33.78	700.00	700.00	-674	-708	1373.78	1407.56	1390.67
13	ST10	RWH-4	100	0.02	3.39	3.41	0.023953	24.0	400	0.78	98.21	OK	8.50	450	0.0189	18.89	700.00	700.00	-863	-882	1562.89	1581.78	1572.33
14	RWH-4	ST11	0	0.00	3.41	3.41	0.023953	24.0	400	0.78	98.21	OK	9.00	450	0.0200	20.00	700.00	100.00	-882	-902	1581.78	1601.78	1591.78
15	ST11	ST-17	1500	0.37	3.41	3.78	0.026557	26.6	400	0.78	98.21	OK	46.20	450	0.1027	102.67	100.00	100.00	-902	-1004	1001.78	1104.44	1053.11
16	ST12	ST13	3500	0.86	0.00	0.86	0.006075	6.1	400	0.78	98.21	OK	47.00	450	0.1044	104.44	700.00	700.00	-500	-604	1200.00	1304.44	1252.22
17	ST13	RWH-5	100	0.02	0.86	0.89	0.006249	6.2	400	0.78	98.21	OK	10.50	450	0.0233	23.33	700.00	700.00	-604	-628	1304.44	1327.78	1316.11
18	RWH-5	ST-14	0	0.00	0.89	0.89	0.006249	6.2	400	0.78	98.21	OK	10.00	450	0.0222	22.22	700.00	700.00	-628	-650	1327.78	1350.00	1338.89
19	ST14	ST15	3300	0.82	0.89	1.71	0.011977	12.0	400	0.78	98.21	OK	47.50	450	0.1056	105.56	700.00	700.00	-650	-756	1350.00	1455.56	1402.78
20	ST15	RWH-6	100	0.02	1.71	1.73	0.012150	12.2	400	0.78	98.21	OK	7.00	450	0.0156	15.56	700.00	100.00	-756	-771	1455.56	1471.11	1463.33
21	RWH-6	ST16	0	0.00	1.73	1.73	0.012150	12.2	400	0.78	98.21	OK	5.00	450	0.0111	11.11	100.00	100.00	-771	-782	1471.11	1482.22	1476.67
22	ST16	ST17	1300	0.32	1.73	2.05	0.014407	14.4	400	0.78	98.21	OK	18.10	450	0.0402	40.22	100.00	100.00	-782	-822	1482.22	1522.44	1492.33
23	ST17	ST22	650	0.16	5.83	5.99	0.042092	42.1	400	0.78	98.21	OK	43.50	450	0.0967	96.67	100.00	100.00	-1004	-1101	1104.44	1201.11	1152.78
24	ST18	ST19	1500	0.37	0.00	0.37	0.002604	2.6	400	0.78	98.21	OK	74.60	450	0.1658	165.78	700.00	700.00	-500	-666	1200.00	1365.78	1282.89
25	ST19	RWH-7	100	0.02	0.37	0.40	0.002777	2.8	400	0.78	98.21	OK	5.50	450	0.0122	12.22	700.00	700.00	-666	-678	1365.78	1378.00	1371.89
26	RWH-7	ST20	0	0.00	0.40	0.40	0.002777	2.8	400	0.78	98.21	OK	6.00	450	0.0133	13.33	700.00	100.00	-678	-691	1378.00	1391.33	1384.67
27	ST20	ST21	2900	0.72	0.40	1.11	0.007811	7.8	400	0.78	98.21	OK	89.20	450	0.1982	198.22	100.00	100.00	-691	-890	791.33	989.56	890.44
28	ST21	ST22	3000	0.74	1.11	1.85	0.013018	13.0	400	0.78	98.21	OK	98.00	450	0.2178	217.78	100.00	100.00	-890	-1107	989.56	1207.33	1098.44
29	ST22	RWH-8	100	0.02	7.85	7.87	0.055284	55.3	400	0.78	98.21	OK	3.00	450	0.0067	6.67	100.00	100.00	-1107	-1114	1207.33	1214.00	1210.67
30	RWH-8	Out-Fall	0.0	0.0	7.87	7.87	0.055284	55.3	500	0.78	154.21	OK	13.00	600	0.0217	21.67	100.00	100.00	-1114	-1136	1214.00	1235.67	1224.83

Project :-PROPOSED AFFORDABLE GROUP HOUSING COLONY FOR AN AREA MEASURING 7.875 ACRE IN SECTOR-3 OF TEHSIL VILLAGE- FARRUKHNAGAR DISTRICT. GURUGRAM,HARYANA														
TITLE - STORM QUANTITY SHEET														
S.No.	Line No.		Length	Dia of Pipe		Slope	Depth			Excavation Depth	EXCAVATION			
	From	To		(mtr.)	(mm)		(mtr.)	Start (mtr.)	End (mtr.)		Avg. (mtr.)	0.0 - 1.5 (mtr.)	1.5 - 3.0 (mtr.)	3.0 - 4.5 (mtr.)
	START													
1	ST1	ST3	49.80	400	0.400	450	1.20	1.31	1.26	61.96	49.8	0.0	0.0	0.0
2	ST2	ST3	83.20	400	0.400	450	1.20	1.38	1.29	105.99	83.2	0.0	0.0	0.0
3	ST3	RWH-1	7.00	400	0.400	450	1.38	1.40	1.39	9.48	7.0	0.0	0.0	0.0
4	RWH-1	ST4	6.60	400	0.400	450	1.40	1.42	1.41	9.02	6.6	0.0	0.0	0.0
5	ST4	ST6	30.00	400	0.400	450	1.42	1.48	1.45	41.96	30.0	0.0	0.0	0.0
6	ST5	ST6	127.00	400	0.400	450	1.20	1.48	1.34	166.74	127.0	0.0	0.0	0.0
7	ST6	RWH-2	8.50	400	0.400	450	1.48	1.50	1.49	12.18	8.5	0.0	0.0	0.0
8	RWH2	ST7	8.00	400	0.400	450	1.50	1.52	1.51	11.58	0.0	8.0	0.0	0.0
9	ST-7	ST10	19.80	400	0.400	450	1.52	1.56	1.54	29.16	0.0	19.8	0.0	0.0
10	ST8	ST9	73.00	400	0.400	450	1.20	1.36	1.28	92.34	73.0	0.0	0.0	0.0
11	ST9	RWH-3	5.20	400	0.400	450	1.36	1.37	1.37	6.94	5.2	0.0	0.0	0.0
12	RWH-3	ST10	15.20	400	0.400	450	1.37	1.41	1.39	20.56	15.2	0.0	0.0	0.0
13	ST10	RWH-4	8.50	400	0.400	450	1.56	1.58	1.57	12.73	0.0	8.5	0.0	0.0
14	RWH-4	ST11	9.00	400	0.400	450	1.58	1.00	1.29	11.46	9.0	0.0	0.0	0.0
15	ST11	ST-17	46.20	400	0.400	450	1.00	1.10	1.05	50.01	46.2	0.0	0.0	0.0
16	ST12	ST13	47.00	400	0.400	450	1.20	1.30	1.25	58.36	47.0	0.0	0.0	0.0
17	ST13	RWH-5	10.50	400	0.400	450	1.30	1.33	1.32	13.58	10.5	0.0	0.0	0.0
18	RWH-5	ST-14	10.00	400	0.400	450	1.33	1.35	1.34	13.11	10.0	0.0	0.0	0.0
19	ST14	ST15	47.50	400	0.400	450	1.35	1.46	1.40	64.71	47.5	0.0	0.0	0.0
20	ST15	RWH-6	7.00	400	0.400	450	1.46	0.87	1.16	8.19	7.0	0.0	0.0	0.0
21	RWH-6	ST16	5.00	400	0.400	450	0.87	0.88	0.88	4.71	5.0	0.0	0.0	0.0
22	ST16	ST17	18.10	400	0.400	450	0.88	0.92	0.90	17.41	18.1	0.0	0.0	0.0
23	ST17	ST22	43.50	400	0.400	450	1.10	1.20	1.15	50.56	43.5	0.0	0.0	0.0
24	ST18	ST19	74.60	400	0.400	450	1.20	1.37	1.28	94.47	74.6	0.0	0.0	0.0
25	ST19	RWH-7	5.50	400	0.400	450	1.37	1.38	1.37	7.36	5.5	0.0	0.0	0.0
26	RWH-7	ST20	6.00	400	0.400	450	1.38	0.79	1.08	6.65	6.0	0.0	0.0	0.0
27	ST20	ST21	89.20	400	0.400	450	0.79	0.99	0.89	84.95	89.2	0.0	0.0	0.0
28	ST21	ST22	98.00	400	0.400	450	0.99	1.21	1.10	109.64	98.0	0.0	0.0	0.0
29	ST22	RWH-8	3.00	400	0.400	450	1.21	1.21	1.21	3.63	3.0	0.0	0.0	0.0
30	RWH-8	Out-Fall	13.00	500	0.500	600	1.21	1.24	1.22	17.84	13.0	0.0	0.0	0.0
Total			975.0							1198.0	939.0	37.0	0.0	0.0
Pipe in excavation depth														
Dia pipe			(0.0 - 1.5)	(1.5 - 3.0)	(3.0 - 4.5)	(4.5 - 6.0)								
400 mm Dia pipe			926.0	37.0	0.0	0.0								
500 mm Dia pioe			13.0	0.0	0.0	0.0								

Project :-PROPOSED AFFORDABLE GROUP HOUSING COLONY FOR AN AREA MEASURING.7.875 ACRE IN SECTOR-3 OF TEHSIL VILLAGE-FARRUKHNAGAR DISTRICT. GURUGRAM,HARYANA

HYDRAULIC STATEMENT OF DOMESTIC WATER SUPPLY

S. NO.	Reference line		Number of Units				Popul. (Total No of Persons)	Total Requirement	Total Water Requirement	DIA.	Velocity	Length of Line	(S) Slope of pipe	Head Loss for line Length	Fitting Loss @ 10% of pipe length	Total Head Loss	CUMMULATIVE HEAD LOSS	Ground Level	Air Release Valve
	FROM	TO	SELF	PREVIOUS	TOTAL			(In LPD)	(In LPM)	(In MM)	m/sec	(In Mtr)	(In m/m)	(In Mtr)	(In Mtr)	(In Mtr)		(In Mtr)	Nos.
				Plots		Others													
1	D1	D2	112	0	112		560	63000	175	150	1.5	25.50	0.026	0.67	0.067	0.73	0.734	700.00	1
2	D2	D3	112	112	224		1120	126000	350	150	1.5	25.60	0.026	0.67	0.067	0.74	1.470	700.00	0
3	D3	D4	112	224	336		1680	189000	525	150	1.5	191.30	0.026	5.00	0.500	5.50	6.975	700.00	0
4	D4	D14	116	336	452		2260	254250	706	150	1.5	68.50	0.026	1.79	0.179	1.97	8.946	700.00	0
5	D5	D6	0	0	0	COMMERCIAL	0	8683	24	40	1.5	63.70	0.122	7.79	0.779	8.57	8.568	100.00	1
6	D6	D7	0	0	0		0	0	0	150	1.5	19.20	0.026	0.50	0.050	0.55	9.120	700.00	0
7	D7	D8	0	0	0	AANGANWADI / COMMUNITY HALL (.0964 A)	0	844	2	150	1.5	4.00	0.026	0.10	0.010	0.12	9.235	700.00	0
8	D8	D9	112	0	112		560	63000	175	150	1.5	25.00	0.026	0.65	0.065	0.72	9.95	700.00	0
9	D9	D10	112	112	224		1120	126000	350	150	1.5	25.80	0.026	0.67	0.067	0.74	10.70	700.00	0
10	D10	D11	112	224	336		1680	189000	525	150	1.5	25.50	0.026	0.67	0.067	0.73	11.43	700.00	0
11	D11	D12	112	336	448		2240	252000	700	150	1.5	25.80	0.026	0.67	0.067	0.74	12.17	700.00	0
12	D12	D13	112	448	560		2800	315000	875	150	1.5	25.80	0.026	0.67	0.067	0.74	12.92	700.00	0
13	D13	D14	112	560	672		3360	378000	1050	150	1.5	49.00	0.026	1.28	0.128	1.41	14.33	100.00	0
14	D14	UGT		1124	1124		5620	632250	1756	150	1.5	60.00	0.026	1.57	0.157	1.73	16.05	100.00	0

BRANCH CONNECTION 25 MM = 10.0
 BRANCH CONNECTION 65 MM = 100.0
 LENGTH OF 40MM DIA ON MAIN = 64.00
 LENGTH OF 150MM DIA = 571.00

TOTAL LENGTH OF LOOP = 745.00
 HEIGHT OF BUILDING FROM FFL = 44.95 MTR
 PRESSURE REQUIRED AT TERRACE TO FILL TANK = 15.00 MTR
 MAXIMUM HEAD LOSS IN THE LOOP = 16.05 MTR
 LOSS IN PLATROOM = 5.00 MTR
 HEAD REQUIRED AT PUMP FOR FILLING OHT = 81.00
 Adding Safety Factor 10% = 89.10
say = 90 MTR

MUNICIPAL CONNECTION PIPE 100MM DIA = 100 MTR
 BORE-WELL PIPE 100MM DIA = 175 MTR

Project :-PROPOSED AFFORDABLE GROUP HOUSING COLONY FOR AN AREA MEASURING.7.875 ACRE IN SECTOR-3 OF TEHSIL VILLAGE-FARRUKHNAGAR DISTRICT. GURUGRAM,HARYANA

HYDRAULIC STATEMENT OF FLUSHING WATER SUPPLY

S. NO	Reference line		Number Of Plot				TOTAL POPULATION	Total Water Requirement.	Total Water Requirement	DIA	Velocity	Length of Line	(S) Slope of pipe	Head Loss for line Length	Fitting Loss @ 10% of pipe length	Total Head Loss	cumulative head loss	Air Release Valve
	From	To	Self	Previous	Total	Others	(In Nos)	(In LPD)	(In LPM)	(In MM)	m/sec	(In Mtr)	(In m/m)	(In Mtr)	(In Mtr)	(In Mtr)		
1	F1	F2	112	0	112		560	33600	93	100	1.5	25.40	0.042	1.07	0.11	1.173	1.173	1
2	F2	F3	112	112	224		4032	241920	672	100	1.5	25.40	0.042	1.07	0.11	1.173	2.346	0
3	F3	F4	112	224	336		1680	100800	280	100	1.5	180.60	0.042	7.58	0.76	8.340	10.686	0
4	F4	F14	116	336	452		2260	135600	377	100	1.5	68.60	0.042	2.88	0.29	3.168	13.854	0
5	F5	F6	0	0	0	COMMERCIAL	0	16126	45	25	1.5	67.00	0.212	14.18	1.42	15.594	15.594	1
6	F6	F7	0	0	0		0	0	0	100	1.5	19.40	0.042	0.81	0.08	0.896	16.489	0
7	F7	F8	0	0	0	AANGANWADI /	0	1567	4	100	1.5	4.30	0.042	0.18	0.02	0.199	16.688	0
8	F8	F9	112	0	112		560	33600	93	100	1.5	25.40	0.042	1.07	0.11	1.173	17.861	0
9	F9	F10	112	112	224		1120	67200	187	100	1.5	25.70	0.042	1.08	0.11	1.187	19.048	0
10	F10	F11	112	224	336		1680	100800	280	100	1.5	26.00	0.042	1.09	0.11	1.201	20.249	0
11	F11	F12	112	336	448		2240	134400	373	100	1.5	25.40	0.042	1.07	0.11	1.173	21.422	0
12	F12	F13	112	448	560		2800	168000	467	100	1.5	25.70	0.042	1.08	0.11	1.187	22.609	0
13	F13	F14	112	560	672		3360	201600	560	100	1.5	61.20	0.042	2.57	0.26	2.826	25.435	0
14	F14	STP	0	1124	1124		5620	337200	937	100	1.5	8.00	0.042	0.34	0.03	0.369	25.804	0

BRANCH LINE		
LENGTH OF 40MM DIA PIPE	=	100.0
LENGTH OF 25MM DIA PIPE	=	67.0
LENGTH OF 100MM DIA	=	522.00
TOTAL LENGTH OF LOOP	=	689.00
HEIGHT OF BUILDING	=	44.95 MTR
PRESSURE	=	15.00 MTR
MAXIMUM HEAD LOSS	=	25.80 MTR
LOSS IN PLATROOM	=	5.00 MTR
HEAD REQUIRED AT	=	90.75
Adding Safety Factor		99.83
say	=	100 MTR

**Project :-PROPOSED AFFORDABLE GROUP HOUSING COLONY FOR AN AREA MEASURING.7.875 ACRE IN
SECTOR-3 OF TEHSIL VILLAGE-FARRUKHNAGAR DISTRICT.**

MATERIAL STATEMENT FOR GARDEN HYDRANT

S. No.	Reference Line	Pipe Length (m)	Length of line In mtr. (uPVC)				
			25 MM OD	32 MM OD	40 MM OD	63 MM OD	110 MM OD
		Total					
1	GH1-GH2	25.20	25.2				
2	GH2-GH3	25.00		25.0			
3	GH3-GH4	25.10			25.1		
4	GH4-1	23.80				23.8	
5	GH5-GH6	25.00	25.0				
6	GH6-GH7	31.70		31.7			
7	GH7-GH8	33.60			33.6		
8	GH8-1	9.30				9.3	
9	1-2	21.30					21.3
10	GH9-2	19.70	19.7				
11	2-3	27.00					27.0
12	GH10-3	6.30	6.3				
13	3-4	20.20					20.2
14	GH11-4	14.00	14.0				
15	4-STP	10.00					10.0
	TOTAL	317.20	90.20	56.70	58.70	33.10	78.50
	GH	11					

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DISTRICT.**

MATERIAL STATEMENT OF EXTERNAL FIRE HYDRANT

S. No.	Reference Line		Length of line In mtr. (M.S PIPE)	
	FROM	TO	80mm	150mm
1	EFH-1	Fire Ring Main	2	
2	EFH-2	Fire Ring Main	2	
3	EFH-3	Fire Ring Main	2	
4	EFH-4	Fire Ring Main	2	
5	EFH-5	Fire Ring Main	2	
6	EFH-6	Fire Ring Main	2	
7	EFH-7	Fire Ring Main	7	
8	EFH-8	Fire Ring Main	7	
9	EFH-9	Fire Ring Main	2	
10	EFH-10	Fire Ring Main	2	
11	EFH-11	Fire Ring Main	2	
12	EFH-12	Fire Ring Main	2	
13	EFH-13	Fire Ring Main	2	
14	EFH-14	Fire Ring Main	2	
15	EFH-15	Fire Ring Main	2	
16	EFH-16	Fire Ring Main	2	
17	EFH-17	Fire Ring Main	2	
18	EFH-18	Fire Ring Main	2	
19	EFH-19	Fire Ring Main	2	
20	Fire Ring Main			1110
		TOTAL	48.0	1110.0
		EFH	19	Nos.

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Area statement for METTALIC ROAD									
S.no.	Road No.	Type	Number	Dimension			Calculation	Result	UNIT
				Length	Height	Breadth			
1	1	Rectangle	1	38.540		6.000	Length X breadth	231.240	SQ.MT
2	2	Rectangle	1	90.085		6.000	Length X breadth	540.510	SQ.MT
3	3	Rectangle	1	83.645		6.000	Length X breadth	501.870	SQ.MT
4	4	Rectangle	1	29.665		6.000	Length X breadth	177.990	SQ.MT
5	5	Rectangle	1	58.800		6.000	Length X breadth	352.800	SQ.MT
6	6	Rectangle	1	29.645		6.000	Length X breadth	177.870	SQ.MT
7	7	Rectangle	1	101.945		6.000	Length X breadth	611.670	SQ.MT
8	8	Rectangle	1	50.030		6.000	Length X breadth	300.180	SQ.MT
9	9	Rectangle	1	109.695		6.000	Length X breadth	658.170	SQ.MT
10	10	Rectangle	1	158.350		6.000	Length X breadth	950.100	SQ.MT
11	11	Rectangle	1	158.520		6.000	Length X breadth	951.120	SQ.MT
12	12	Rectangle	1	117.100		6.000	Length X breadth	702.600	SQ.MT
				1026.02			Total Addition =	6156.120	SQ.MT
ADD 10 % FOR CURVED ROAD								615.612	SQ.MT
Total Mettalic Road Area (A1)=								6771.732	SQ.MT