7.30625 ACRES AFFORDABLE RESIDENTIAL PLOTTED COLONY IN MUBARIKPUR SECTOR – 1, FARUKHNAGAR
DESIGN CALCULATION

• Total Plots	= 137 Nos.
• Total Populations @ 13.5 person/plot	= 1850 Persons
Water Requirement 1850 x 155.25LPD	=287212.5 LPD
• Commercial Area 0.29Acres Commercial @ 32000 LPD/Acre	= 9280 LPD
• Community Facility Area .732 Acres @ 25000 LPD/Acre	= 18300 LPD
• Milk and Veg Booth LS 5000 LPD	=5000 LPD
• (.611 acre)@25 kl /acre Per Day for Horticultural	=15275 LPD
• Daily water requirement @ 5000 Liters / Acres For sweeping of roads for .90 Acres	=4500 LPD
Total	= 339567.5 LPD
	340 KLD

Fire Demand

• Populations	= 1850 persons
Fire Fighting $100\sqrt{P}$ = $100\sqrt{1.85} \times 1/3 = 45.33$ KL	= 45.33 KLD
Say	= 50 KLD
Garden Irrigation Requirement (Say)	= 15 KLD
For sweeping of roads Requirement(Say)	= 5.0 KLD
Total Water Requirement for UGT (Excluding Fire Demand)	
Hence Domestic Water Requirement(67%)	= (340-15-5)*0.67= 214.40 KLD
Say	= 215 KLD
Hence Flushing Water Requirement (33%)	= (340-15-5)*0.33 = 105.60KLD
Say	= 110 KLD

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Domestic Storage Requirement a) Daily demand Domestic use
Including institutional demand = 215 KL

Capacity of underground tank
Taking storage (25 + 33 = 58%) Say 60% of daily demand
= 215 x 0.60=129 KL
Say = 130 KL Proposed Tank Capacity – 65 KL x 2 Nos.
Flushing Storage Requirement Capacity of underground
Tank Storage = (25 + 33 = 58%)
Say 60% of daily demand
= (110+15+5) x 0.60 = 78.0 KL Say = 80 KL

Fire Fighting $100\sqrt{P}$
= $100\sqrt{1.85}$ x 1/3 = 45.33 KL
Say = 50 KL

It is proposed to construct an UGT i.e.130 KLD in two compartment for domestic use and 80 KL for Non potable water in two compartments in STP and one no.50 KL for Firefighting purposes.

Total Capacity of UGT = 130+80 + 50= 260 KL

SAY **= 260 KL**

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7.30625 ACRES AFFORDABLE RESIDENTIAL PLOTTED COLONY IN MUBARIKPUR SECTOR – 1, FARUKHNAGAR
DESIGN CALCULATION

Sr. No.	Description
1.	**BOREWELLS/ TUBEWELL**

Assuming working hours of tube well = 12

Assuming discharge/hour of each tube well = 25,000 lit/hour

Total Domestic Water demand = 245 KL

No. of tube wells required for water supply = $\frac{245}{25 \times 12}$ = .82

Add 10% stand by = .082

Total no of tube wells required = .902 nos.

= 1 nos.

So it is proposed to provide 1 Nos of tube wells at present. Moreover the requirement of flushing water supply is to met from treated water from S.T.P. and ultimately water is to be supplied by HSVP

2. PUMPING MACHINARY FOR BOREWELL

Gross working load = 45.00 m

Average fall in is S.L. = 3.00 m

Depression head = 9.00 m

Friction Loss = 3.00m

Total = 60.00 m

B.H.P. = $\frac{25000 \times 60}{60 \times 60 \times 75 \times 0.6}$ With 60% efficiency

= 9.25 H.P.

Say = 10.0 H.P / Borewell

= 10 x1= 10 HP Total.

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3.	**RISING MAIN FROM BOREWELL TO UGT** Rising main network for 1 no. borewells is having dia 100,150 & 200 mm. Provision for same has been considered in estimate. Material statement is also attached.
4.	**Boosting Machinery (Drinking water)** Daily requirement for domestic use (Drinking) = 215 KLD Assuming 6 hours running 1 pump (with one stand by) discharge/hour. = 215/6 =35.83 cum/hour = 597.22 ltr/m Say = 600 ltr/m (1W + 1SB) Head of Pump i) Suction Lift 4m ii) Friction Loss in main & specials 3.0m iii) Elevation Head -15m iv) Clear & Residual Head 29m 36M Say 40m B.H.P. of Motor = 600 x 40 / 60x75x0.6 = 8.80 Say 10.0 H.P. = 10.0 HP (1W +1 SB)
5.	**BOOSTING MACHINERY(Flushing water supply)** Daily requirement for domestic use (flushing) = 110 KL Add for horticulture and roads = 20 KL TOTAL = 130 KL Assuming 6 hours running 1 pumps (with one stand by) Discharge/hour = = 21.60 KL/hour Discharge/minute say = 361.10 liter/m = 365 liter/m

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HEAD OF PUMP

i)	Suction lift	= 6 M	
ii)	Friction Loss in main & specials	= 2 M	
iii)	Clear & Residual head	= 27 M	
TOTAL		= 35M	
SAY		= 40 M	
B.H.P. of Motor		= 365 x 40 / 60x75x0.6	=5.40
		say	**= 7.50 HP**

6. **GENSET FOR BOOSTING STATION**

Pumping sets 1 Nos. 12.5 H.P. (Domestic)		= 10.0 H.P.
Pumping sets 1 Nos. 7.5 H.P. (Flushing)		= 7.5 H.P.
Lightening etc		= 5 H.P.
Tube well		= 10. H.P
		= 32.5 H.P.

Capacity of gen set required

32.5x 0.746 x 1.50		= 36.4KVA
Add 10 % extra		= 3.64
		= 40.04
	Say	= 40KVA

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7.	**PUMP ROOM** It is proposed to construct combined pump room for housing the panel of machinery of boosting station and bore wells.
8.	**STAFF QUARTER** Construction of staff quarter for operation of Boosting station including public health services.
9.	**SEWAGE TREATMENT PLANT** STP required Capacity @ 80 % of total demand excluding the horticultural and for sweeping of road = (340-15-5)=320x 0.8 = 256.0 KL **Add 5% marginal Factor** = 12.80 KLD = 268.80KLD SAY = 270 KLD **PROPOSED STP CAPACITY = 270 KLD**

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7.30625 ACRES AFFORDABLE RESIDENTIAL PLOTTED COLONY IN MUBARIKPUR SECTOR – 1, FARUKHNAGAR

FINAL ABSTRACT OF COST

		Amount (Rs. In Lacs)	
Sub Work No. I	Water Supply	Rs.	155.00
Sub Work No. II	Sewerage	Rs.	97.10
Sub Work No. III	Storm Water Drainage	Rs.	77.30
Sub Work No. IV	Road and Footpath	Rs.	136.50
Sub Work No. V	Street Lighting	Rs.	28.00
Sub Work No. VI	Horticulture Work	Rs.	4.30
Sub Work No. VII	Maintenance Charges for 10 years i/c resurfacing of roads after 1st 5 years and 2nd 5 years	Rs.	171.50
	Total	**Rs.**	**669.70**

Cost Per Acres (Net planned area of 7.30625 Acre) = Rs. 669.70/ 7.30625 = 91.66 Lack per Acre

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FINAL ABSTRACT OF COST (WATER SUPPLY)

	Amount (Rs in Lacs)
Sub Head No. 1 Head Works	77.70
Sub Head No. 2 Pumping Machinery	33.70
Sub Head No. 3 Distribution System(Drinking)	24.70
Sub Head No. 4 Distribution System(Flushing)	18.90
Total	**155.00**

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7.30625 ACRES AFFORDABLE RESIDENTIAL PLOTTED COLONY IN MUBARIKPUR SECTOR – 1, FARUKHNAGAR

Sub Work-I
Sub Head No. 1

		Water Supply Head Works Amount (Rs.) (in Lacs)
1	Boring and installing 510 i/d tube wells with reserve/ direct rotary rig complete with pipe strainer to a depth of about 150m complete. 1 Nos. @ 15.00 Lacs each	15.00
2	Constructing pump chambers as per standard design of PWD PH/HSVP of size 4.90x4.25 m 1 Nos. @ 4.00 Lacs each	4.00
3	Construction of boundary wall around the Tube well site Water Works 1 No. @ Rs 3.00 lac Tube wells 1 Nos. @ Rs 1.50	3.00 1.50
4	Provision of footpath hedges and lawns at tube well 1 Nos.	1.00
5	Construction of boosting chambers of suitable size along with underground tank of capacity 260KL pumping machinery and generating set etc. complete in all respects. Details of boosting station i) Construction of boosting chamber ii) U.G. tank 260KL capacity RS 4500/KL 5500x260	5.00 14.30
6	Provision for staff quarters for Maintenance i) 1 No 350 sft (L.S.)	6.0
7	Prov. for carriage of material (L.S.)	1.00
		50.80
	P.E. & contingency charges @ 3%	1.52
		52.12
	Department escalation unforeseen and administrator charges @ 49%	25.54
	Total	**77.66**
	Say	**77.70**

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Sub Work I **Water Supply**

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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 25.00KL water per hour against a total head of 60 M complete with motor and other accessories (10 B.H.P.)	
	1 Nos. @ Rs 2.00 lac each	2.0
2	Provision for diesel engine genset stand by arrangement for tube wells (L.S.)	2.0
3	Provision for cheap pressure type chlorination plant complete	
	1 Nos. @ Rs 1,00,000/-	1.0
4	Provision for making foundations and erection of pumping machinery (L.S.)	2.0
5	Provision for pipes, valves, and specials inside the pump chamber	2.0
6	Provision for electric services connection including electric transformer and fittings for tubewells chambers complete including transformers L.S.	2.5
7	Providing and installing centrifugal boosting pumping sets, capable of delivering water at 40 M head complete in all respects domestic and Flushing. 1 Sets @ Rs 2.25 lac each ,Domestic 600 LPM @ 40M Head(1W+1SB) -10.0H.P. & Flushing- 365 LPM@ 40M Head(1W+1SB) 7.5 H.P. Total 2sets-	4.5
8	Providing Gen set for Boosting Pumps for drinking water supply 40 KVA for flushing L.S.	5.0
9	Provision for carriage for materials and other unforeseen items L.S.	1
	Total	**20.0**
	P.E. & contingency charges @ 3%	.60
		22.60
	Department escalation unforeseen and administrator charges @ 49%	10.09
	Total	**32.69**
	say	**33.70**

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Sub Work I

Water Supply

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Sub Head No. 3

			Distribution System(Drinking) Amount (Rs.) (in Lacs)
1	Providing, laying, jointing and testing C.I/D.I.-K7/ HDPE Pipes including cost of excavation complete as per specifications. 100 mm dia i/d 643 mtrs @ Rs.1460 /mtr		9.39
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		.72
3	Providing and fixing air valves and scour valves or scour taps including cost of brick masonry chamber 4Nos. @ Rs. 15,000/- each		0.6
4	Providing and fixing fire hydrants complete with masonry chambers 4 Nos. @ Rs. 15,000/- each		0.60
5	Providing and fixing indicator plates for sluice valve, air valve etc. 14Nos. @ Rs. 2000/- each		0.28
6	Provision for rising main D.N. 100mm from main HSVP water line to U.G.S.T. 157 mtrs @ Rs1460/- mtr(D.I.-K7 /HDPE)		2.29
7	Provision for D.N. 100mm D.I. k-7/HDPE rising main from tube well to U.G.S.T. 100 mm dia 15 mtrs @ Rs. 1460/- mtr .		0.22
8	Providing for carriage of material	L.S.	2.00
			16.10
	Add P.E. & Contingency charges @ 3%		.48
			16.58
	Department escalation unforeseen and administrator charges @ 49%		8.12
		Total	**24.70**
		Say:	**24.70**

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Sub Work I

Sub Head No. 4

		Water Supply Distribution System(Flushing) Amount (Rs.) (in Lacs)
1	Providing, laying, jointing and testing C.I/D.I.-K7/HDPE Pipes including cost of excavation complete as per specifications. 100 mm dia i/d 649 mtrs @ Rs 1460 /mtr	9.48
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	.72
3	Providing and fixing air valves and scour valves or scour taps including cost of brick masonry chamber 4Nos. @ Rs. 10,000/- each	0.4
4	Providing and fixing 25mm and irrigation hydrants 7 Nos. @ Rs. 5000/- each	0.35
5	Providing and fixing indicator plates for sluice valve, air valve etc. 17Nos. @ Rs. 2000/- each	0.34
6	Provision for carriage of material and other unforeseen items	1.00
		12.29
	Add P.E. & Contingency charges @ 3%	0.37
		12.66
	Department escalation unforeseen and administrator charges @ 49%	6.20
	Total	**18.86**
	Say:	**18.90**

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7.30625 ACRES AFFORDABLE RESIDENTIAL PLOTTED COLONY IN MUBARIKPUR SECTOR – 1, FARUKHNAGAR

SUB WORK II

		SEWERAGE SCHEME Amount (Rs.) (in Lacs)
1	Providing, lowering, cutting, salt glazed stoneware/PVC/DWC 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 3M – 651 M @ Rs. 1700- per M	11.07
2	Provision for providing oblique junctions (L.S.)	2.00
3	Provision for providing and fixing vent shafts at suitable places as per PH requirement (L.S.)	1.00
4	Provision of Electro Mechanical Cost of STP (270 KLD) @ Rs. 16000/- KLD	43.20
5	Provision of temporary timbering etc.	1.00
6	Provision for cutting of roads and carriage of materials etc. and other unforeseen charges (L.S.)	3.00
7	Provision for connection with HSVP main (L.S.)	2.00
	Total	**63.27**
	P.E. & Contingency charges @ 3%	1.90
		65.17
	Department escalation unforeseen and administrator charges @ 49%	31.93
	Total	**97.10**
	Say:	**97.10**

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7.30625 ACRES AFFORDABLE RESIDENTIAL PLOTTED COLONY IN MUBARIKPUR SECTOR – 1, FARUKHNAGAR

SUB WORK III

		STORM WATER DRAINAGE Amount (Rs.) (in Lacs)
1	Providing, laying RCC /DWC/PVC pipes drain class NP – 2/ DWC/ PVC with cement joint, manholes, excavation etc. complete in all respect 400 mm i/d Av. Depth up to 2.0 m – 635 M @ Rs. 2500/- per M	15.88
2	Provision for road gullies with 250 mm dia pipe connection L.S.	2.50
3	Provision for Construction of R.W.H of selected place as applicable.(LS)	15.00
4	Provision for temporary disposal arrangement till HSVP services are provide L.S.	3.00
5	Provision for lighting, watching and temporary diversion of traffic L.S.	5.00
6	Provision for cutting of roads and carriage of materials etc. and other unforeseen items L.S.	5.00
7	Provision for connection with HSVP on master line L.S.	2.00
8	Provision for timbering and shoring. L.S.	2.00
	Total	50.38
	P.E. & contingency charges @ 3%	1.51
	Total	**51.89**
	Department escalation unforeseen and administrator charges @ 49%	25.42
	Total	**77.31**
	say	**77.30**

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7.30625 ACRES AFFORDABLE RESIDENTIAL PLOTTED COLONY IN MUBARIKPUR SECTOR – 1, FARUKHNAGAR

SUB WORK – IV

Road Work

Item No.	Description of Item	Unit	Qty.	Rate (Rs)	Amount (Rs in lacs)
1	**Earth Works**				
1.1	Provision for leveling + earth filling as per site condition approximate	Acre	7.30625	1,75,000	12.79
2	Providing and laying ii) Providing and laying **Bituminous road** (200mm GSB, 250mm WMM, 50mm DBM, 40mm BC)	Sqm	3586	1500	53.79
3	**Miscellaneous Items**				
3.1	Construction of cement concrete Kerb and Channels as per specifications	Meter	1242	600	7.45
3.2	Construction of footpaths as per specification on 9 m wide road (L.S).				1.00
3.3	Providing and fixing guide maps at selected locations (L.S.)				2.00
3.4	Provision for plot indicators (L.S.)				1.00
3.5	Provision for demarcating burgies (L.S.)				1.00
3.6	Provision for traffic arrangement				2.00
3.7	Provision for carriage of material (L.S.)				2.00
3.8	Construction of pavement in shopping area 0.290 acres 50% of that= 587 SQM.	sqm	587	1000	5.87
		Total			**88.90**
	Add 3% contingency & P.E. charges				2.67
	Total				**91.57**
	Department escalation unforeseen and administrator charges @ 49%				44.87
	Total				**136.44**
	Say				**136.50**

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7.30625 ACRES AFFORDABLE RESIDENTIAL PLOTTED COLONY IN MUBARIKPUR SECTOR – 1, FARUKHNAGAR

SUB WORK – V **Street Lighting**

	Amount (Rs. in lacs)
Providing street lighting on internal Roads as per standard specification in 7.30625 acre area @ Rs. 2,50,000/ - per acre 7.30625 x 2,50,000/-	= 18.27
Add 3% contingencies & P.E. charges	= .55
	= 18.82
Add Department escalation unforeseen and administrator charges @ 49%	= 9.22
Total	**= 28.04**
Say	**= 28.00**

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7.30625 ACRES AFFORDABLE RESIDENTIAL PLOTTED COLONY IN MUBARIKPUR SECTOR – 1, FARUKHNAGAR

SUB WORK – VI

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 HSVP Norms) Area .611 Acres @ Rs. 1,50,000/- per acre	.92
2	**Planting of trees with tree guards on Roads at 40' intervals**	
	Total length of roads= 621 mtr	
	No. of trees @ 12 m c/c = 621x 2 / 12 = 103.5 Nos.	
	Say = 104 Nos.	
	Cost of the tree	
	Excavation Rs. 60/-	
	Manure Rs. 90/-	
	Tree plants Rs. 150/-	
	Tree guards Rs. 1500/-	
	Total = 1800x 104	1.87
	Total	**2.79**
	Add 3 % contingencies and P.E charges	0.084
		2.88
	Add 49% departmental charges, price escalation , unforeseen and Adm charges	1.41
	Total	**4.29**
	Say	**4.30**

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7.30625 ACRES AFFORDABLE RESIDENTIAL PLOTTED COLONY IN MUBARIKPUR SECTOR – 1, FARUKHNAGAR

SUB WORK – 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 HSVP Norma after completion and resurfacing of roads after 10 years.	
7.30625acres@ Rs. 8.00 lacs per acre	= 58.45
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	= 23.67
3586 sqm @ Rs 660/- Per Sqm	
3. Resurfacing of road after 10 years of maintenance by providing 25 mm thick premix carpet with seal coat with mechanical paver	
3586sqm @ Rs 825/- Per Sqm	= 29.58
Total	**= 111.70**
Add 3% PE and contingency charges	= 3.35
	= 115.05
Add 49% Departmental charges, price escalation unforeseen and administrator charges.	= 56.37
Total	**= 171.42**
Say	= 171.50

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DESIGN CHART FOR DOMESTIC WATER SUPPLY SYSTEM

Sl. No	Node		No of Plot served	Population @ 13.5 persons/plot	Total Water Requirement @155.25 LPD/person	OTHER BUILDINGS					Self Domestic Water Requirement in Litre @ 67 %rd of total demand	Branch Discharge	Total Discharge	PUMP WORKING 6 HOURS IN LPH	SELF WATER REQ IN LPM	LENGTH OF PIPE	10 % of fittings	Total Equv. Length	HEAD LOSS MTR/ MTR	TOTAL HEAD LOSS IN MTRS	Commulative head loss	Velocity in M/Sec	SIZE OF RISER PIPE IN MM Dia
	FROM	TO				Area in Acre	Type of building	Basis of Water Requirement LPD	Total water requirement for other buildings (LPD)	Total Water requirement	LPD	LPD	LPD			Mtr							
1	W1	W3	22	297	46109	0.732	Community	Community-25000 L/Acre	18300	64409	43154	0	43154	7192	120	83	8	91	0.0016	0.143	0.143	0.25	100
2	W2	W3	2	27	4192					4192	2808	0	2808	468	8	16	2	18	0.0000	0.000	0.000	0.02	100
3	W3	W5	7	94.5	14671					14671	9830	45963	55792	9299	155	50	5	55	0.0025	0.139	0.282	0.33	100
4	W4	W5	38	513	79643					79643	53361	0	53361	8893	148	152	15	167	0.0023	0.389	0.389	0.31	100
5	W5	W7	6	81	12575					12575	8425	109153	117579	19596	327	44	4	48	0.0100	0.486	0.875	0.69	100
6	W6	W7	40	540	83835					83835	56169	0	56169	9362	156	152	15	167	0.0026	0.427	0.427	0.33	100
7	W7	W8	4	54	8384					8384	5617	173748	179365	29894	498	24	2	26	0.0219	0.579	1.454	1.06	100
8	W8	W9	18	243	37720	0.06	commercial	Commercial-32000 L/Acre	9280	47006	31494	0	31494	5249	87	72	7	79	0.0009	0.089	0.089	0.19	100
9	W9	PUMP ROOM	0	0	0					0	0	210859	210859	35143	586	50	5	55	0.0296	1.629	3.082	1.24	100
																				SAY	3M		

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DESIGN CHART FOR FLUSHING WATER SUPPLY SYSTEM

DESIGN CHART FOR FLUSHING WATER SUPPLY SYSTEM

SL NO	NODE		No of Plot served	Population @ 13.5 persons/plot	Total Water Requirement @155.25 LPD/person	OTHER BUILDINGS					Self Domestic Water Requirement in Litre @ 33% of total demand for plot	Branch Discharge	Total Discharge	PUMP WORKING 6 HOURS IN LPH	SELF WATER REQ IN LPM	LENGTH OF PIPE	10 % of fittings	Total Equv. Length	HEAD LOSS MTR/ MTR	TOTAL HEAD LOSS IN MTRS	Commulative head loss	VELOCITY IN M/SEC	SIZE OF RISER PIPE IN MM Dia
	FROM	TO				Area in Acre	TYPE OF BUILDING	Basis of Water Requirement LPD	Total water requirement for other buildings (LPD)	Total Water Requireent (LPD)	LPD	LPD	LPD			Mtr							
1	F1	F3	22	297	46109	0.732	Community	Community-25000 L/Acre	18300	64409	21255	0	21255	3543	59	75	7.5	82.5	0.0004	0.03	0.03	0.13	100
2	F2	F3	3	40.5	6288					6288	2075	0	2075	346	6	17	1.7	18.7	0.0000	0.00	0.00	0.01	100
3	F3	F5	7	94.5	14671					14671	4841	23330	28171	4695	78	50	5	55	0.0007	0.04	0.07	0.17	100
4	F4	F5	38	513	79643					79643	26282	0	26282	4380	73	145	14.5	159.5	0.0006	0.10	0.10	0.15	100
5	F5	F7	5	67.5	10479					10479	3458	54454	57912	9652	161	44	4.4	48.4	0.0027	0.13	0.23	0.34	100
6	F6	F7	40	540	83835					83835	27666	0	27666	4611	77	145	14.5	159.5	0.0007	0.11	0.11	0.16	100
7	F7	F9	5	67.5	10479					10479	3458	85577	89036	14839	247	35	3.5	38.5	0.0060	0.23	0.46	0.52	100
8	F8	F9	17	229.5	35630	0.29	commercial	Commercial-32000 L/Acre	9280	44910	14820	0	14820	2470	41	60	6	66	0.0002	0.01	0.01	0.09	100
9	F9	STP	0	0	0					0	0	103856	103856	17309	288	78	7.8	85.8	0.0060	0.68	1.15	0.61	100
																				Say	2m		

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MATERIAL STATEMENT FOR DOMESTIC WATER SUPPLY

SL NO	NODE		SIZE OF RISER PIPE IN MM Dia	LENGTH OF PIPE IN mtr.
	FROM	TO		100 MM DIA
1	W1	W3	100	83
2	W2	W3	100	16
3	W3	W5	100	50
4	W4	W5	100	152
5	W5	W7	100	44
6	W6	W7	100	152
7	W7	W9	100	24
8	W8	W9	100	72
9	W9	PUMP ROOM	100	50
			Total	**643**

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MATERIAL STATEMENT FOR FLUSHING WATER SUPPLY

SL NO	NODE		SIZE OF RISER PIPE IN MM Dia	LENGTH OF PIPE IN mtr.
	FROM	TO		
1	F1	F3	100	75
2	F2	F3	100	17
3	F3	F5	100	50
4	F4	F5	100	145
5	F5	F7	100	44
6	F6	F7	100	145
7	F7	F9	100	35
8	F8	F9	100	60
9	F9	STP	100	78
			TOTAL	649

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SEWER DESIGN

Sl	LINE		No of Plot served	Population @ 13.5 persons /plot	Water Requirement @155.25 LPD/ person	Area in Acre	TYPE OF BUILDING	Basis of Water Requirement LPD	Total water requirement for other buildings (LPD)	Total Water Req.	Av. Sewer load 80% of Water Requirement	Peak Load @ 3.0 X Av. Load	Subsoil Infiltration @25% of Av Load	Self Discharge	Branch Discharge	Total Discharge	Total Discharge	Length of line	Dia of Pipe	Slope 1 IN	Fall in Line	Velocity	Capacity of Pipe	CHECK FOR CARRYING CAPACITY	STARTING (G.L)	STARTING (I.L)	END (G.L)	END(I.L)	START ING MANHOLE DEPTH	END MANHOLE DEPTH
NO.	FROM	TO																												
										LPD	LPD	LPD	LPD	LPD	LPD	LPD	LPS	Mtr	MM		Mtr	m/sec	lps		Mtr.	Mtr.	Mtr.	Mtr.	Mtr.	Mtr.
1	S1	S3	22	297	46109	0.732	Community	25000 Lts /Acre	18300	64409	51527	154582	12882	167464	0	167464	1.94	75	200	225	0.33	0.82	12.93	OK	0.00	-1.20	0.00	-1.53	1.20	1.53
2	S2	S3	3	41	6288					6288	5030	15090.3	1258	16348	0	16348	0.19	17	200	225	0.08	0.82	12.93	OK	0.00	-1.20	0.00	-1.28	1.20	1.28
3	S3	S5	7	95	14671					14671	11737	35210.7	2934	38145	183812	221957	2.57	50	200	225	0.22	0.82	12.93	OK	0.00	-1.53	0.00	-1.76	1.53	1.76
4	S4	S5	38	513	79643					79643	63715	191144	15929	207072	0	207072	2.40	145	200	225	0.64	0.82	12.93	OK	0.00	-1.20	0.00	-1.84	1.20	1.84
5	S5	S7	5	68	10479					10479	8384	25150.5	2096	27246	429029	456276	5.28	44	200	225	0.20	0.82	12.93	OK	0.00	-1.84	0.00	-2.04	1.84	2.04
6	S6	S7	40	540	83835					83835	67068	201204	16767	217971	0	217971	2.52	145	200	225	0.64	0.82	12.93	OK	0.00	-1.20	0.00	-1.84	1.20	1.84
7	S7	S8	5	68	10479					10479	8384	25150.5	2096	27246	674247	701493	8.12	35	200	225	0.16	0.82	12.93	OK	0.00	-2.04	0.00	-2.20	2.04	2.20
8	S8	S9	17	230	35630	0.290	commercial	32000 Lts /Acre	9280	44910	35928	107784	8982	116766	0	116766	1.35	60	200	225	0.27	0.82	12.93	OK	0.00	-1.20	0.00	-1.47	1.20	1.47
9	S9	STP	0	0	0					0	0	0	0	0	818259	818259	9.47	80	200	225	0.36	0.82	12.93	OK	0.00	-2.20	0.00	-2.55	2.20	2.55

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MATERIAL STATEMENT (SEWER)

SI	LINE		Length of line	Dia of Pipe	DIA
NO.	FROM	TO			200
			Mtr	MM	
1	S1	S3	75	200	75
2	S2	S3	17	200	17
3	S3	S5	50	200	50
4	S4	S5	145	200	145
5	S5	S7	44	200	44
6	S6	S7	145	200	145
7	S7	S9	35	200	35
8	S8	S9	60	200	60
9	S9	STP	53	200	80
		Total	624		651

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DESIGN STATEMENT - STROM WATER DRAINAGE

SL	SW LINE		AREA SERVED			RUNOFF ASSUMING	DIA OF	GRADIANT.	VELOCITY	DESIGN	CHECK FOR CARRYING CAPACITY	LENGTH	FALL IN						
NO.	MARKED AS		self(sqm)	BRANCH(sqm)	TOTAL(Sqm)	RF @ (6.25 MM/HR)	PIPE	1/	m/sec	DISCHARGE.		OF LINE	METER	Starting and end(GL)	Starting(IL)	End GL	End(IL)	Starting manhole depth	End manhole depth
	FROM	TO				IN LPS.	IN MM			IN LPS		Mtr		Mtr.	Mtr.		Mtr.	Mtr.	Mtr.
1	D1	D3	6342.00	0.00	6342.00	11.01	400.00	560.00	0.61	68.67	OK	82.00	0.15	0.00	-1.20	0.00	-1.35	1.20	1.35
2	D2	D3	506.00	0.00	506.00	0.88	400.00	560.00	0.61	68.67	OK	17.00	0.03	0.00	-1.20	0.00	-1.23	1.20	1.23
3	D3	D5	1330.00	6848.00	8178.00	14.20	400.00	560.00	0.61	68.67	OK	49.00	0.09	0.00	-1.35	0.00	-1.43	1.35	1.43
4	D4	D5	5890.00	0.00	5890.00	10.23	400.00	560.00	0.61	68.67	OK	152.00	0.27	0.00	-1.20	0.00	-1.47	1.20	1.47
5	D5	D7	1170.00	14068.00	15238.00	26.45	400.00	560.00	0.61	68.67	OK	44.00	0.08	0.00	-1.47	0.00	-1.55	1.47	1.55
6	D6	D7	6680.00	0.00	6680.00	11.60	400.00	560.00	0.61	68.67	OK	152.00	0.27	0.00	-1.20	0.00	-1.47	1.20	1.47
7	D7	OUT FALL	7715.00	21918.00	29633.00	51.45	400.00	560.00	0.61	68.67	OK	139.00	0.25	0.00	-1.55	0.00	-1.80	1.55	1.80

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MATERIAL STATEMENT (STROM WATER)

SL	SW LINE		DIA OF	LENGTH	DIA
NO.	MARKED AS		PIPE	OF LINE	400
	FROM	TO	IN MM		
1	D1	D3	400.00	82.00	82.00
2	D2	D3	400.00	17.00	17.00
3	D3	D5	400.00	49.00	49.00
4	D4	D5	400.00	152.00	152.00
5	D5	D7	400.00	44.00	44.00
6	D6	D7	400.00	152.00	152.00
7	D7	OUT FALL	400.00	139.00	139.00
			Total	**635.00**	**635.00**

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MATERIAL STATEMENT OF ROAD			
S.NO	ROAD	WIDE	LENGTH
		METER	9 METER
1	R1	9	75
2	R2	9	144
3	R3	9	110
4	R4	9	292
		Total	621
		METALLED WIDTH	5.5
		AREA in SQM.	3415.5
		Add 5 % CURVE	170.775
		TOTAL AREA	3586
		TOTAL LENGTH(9m)	621
		KERB LENGTH(9m)	1242
		TOTAL ROAD(9m)AREA IN SQM.	3586

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Pump.

	AFFORDABLE PLOTTED COLONY- DDJAY -7.30625 Acre	Fire Hydrant			
S.No.	Description	Unit	QTY	Rate (Rs.)	Amount (Rs.)
	Sub work no -1				
1	Providing, Laying, Jointing and testing G.I. pipes lines including cost of excavation etc. Complete in all respect.				
a)	80 mm dia pipe.	M	20	1,000.00	20,000.00
2	Providing and fixing external fire hydrant etc.				
		Each	4	10,000.00	40,000.00
	Total Abstract of cost				
	SAY IN LAKH				60,000.00
	Add 3% contingencies & PH charges				0.60
	Total				0.03
	Add 49% Departmental charges, price escalation, unforeseen				0.62
	Total				0.49
					0.92

For Architech Land Holdings Pvt. Ltd.

Harsh..

Authorised Signatory