

**INTERNAL DEVELOPMENT WORKS**

**DESIGN AND COST ESTIMATES**

**FOR**

**PLOTTED COMMERCIAL COLONY  
MEASURING 17.80625, 6.40625 ACRES  
LICENSED LAND UNDER LICENSE NO. 14  
OF 2021 IN VILLAGE BAJGHERA, SECTOR-  
114, GURUGRAM.**

**OWNER**

**M/S BAILIWICK BUILDERS PVT. LTD. AND  
OTHERS IN COLLABORATION WITH M/S  
EMMAR INDIA LIMITED (FORMERLY  
KNOW AS EMAAR MGF LAND LTD).**



**Estimate for Providing Internal Development Works of Proposed Expansion of Plotted Commercial Colony Measuring 17.80625 including the previously approved 6.40625 Acres Licensed Land under license no. 14 of 2021 in Village Bajghera, Sector - 114, Gurugram.**

**Report**

This Internal Development Design Report and Cost Estimate is Highlighting the details adopted for the expansion of already developed plotted commercial colony of 6.40625 acres licenced under licence no.14 of 2021 to 17.80625 acres in Village Bajghera, Sector - 114, Gurugram. by M/S BAILIWICK BUILDERS PVT. LTD. AND OTHERS IN COLLABORATION WITH EMMAR INDIA LIMITED (FORMERLY KNOWN AS EMAAR MGF LAND LTD).

**WATER SUPPLY**

Underground water storage tank is already constructed at site with adequate capacity considering the present expansion. As the only water source in this area is supply through the HSVP distribution system, piping to connect the water tank from the HSVP Supply distribution system is already laid. Domestic Water supply to the proposed expansion will be made through the already laid distribution system, which has been designed and laid considering the proposed expansion. Higher capacity pumps shall be installed. The water supply system has been designed as per the Hazen William formula. Flushing and Irrigation water supply to the Proposed Expansion shall be supplied from the treated water tanks of respective sewage treatment plant. As elaborated below in sewerage scheme, sewerage system of part of the proposed expansion is connected to the sewage treatment plant of previous development. Therefore, Flushing and irrigation water demand of this part of new development shall be fed from the previous development. Sizing of the piping has already considered to cater to proposed expansion.

**DESIGN**

The scheme has been designed for population as given in attached water demand calculation.

**SEWERAGE SCHEME**

Sewer line from part of the proposed expansion shall be connecting to the already developed sewage treatment plant and balance area of the proposed expansion shall be treated in a new sewage treatment plant. This arrangement is made to minimise the depth of sewer line. Surplus sewage / treated effluent from both plant shall be disposing to HSVP sewer line on Sector Road. 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 & flushing water supply shall find its way into the proposed sewer. Sewer lines shall be laid to a gradient maintaining minimum 2.46 ft./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/ PVC -U pipe sewer line, construction of required number of manholes etc., has been made in the estimate. Diameter and Depth of Sewer lines of the already developed part is made considering the proposed expansion of the commercial colony.

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**

Storm Water from the proposed expansion shall be connected to the already developed commercial colony. While designing and laying of the already laid development, discharge and levels of this proposed expansion is considered. Adequate number of rain water harvesting systems are incorporated in the proposed expansion. Excess storm water from the system shall be disposed off to HSVP drain through the storm water lines laid at the previous development. The intensity of rain fall has been taken as 1/4" 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./HSVP

**ROADS**

Estimate of Road work is prepared as per revised specifications adopted by HUDA

**STREET LIGHTING**

Provision for streets lights 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. 8,41,19,908.11**  
**Including** 3% Contigencies and 49% Departmental Charges

Area of commercial development as per License **11.4 Acre**

**Net Cost Per Acre Rs. 73,78,939.31**

**For: M/S BAILIWICK BUILDERS PVT. LTD. AND OTHERS IN COLLABORATION WITH M/S EMMAR INDIA LIMITED (FORMERLY KNOW AS EMAAR MGF LAND LTD).**

**Authorized Signatory**



Estimate for Providing Internal Development Works of Proposed Expansion of Plotted Commercial Colony Measuring 17.80625 including the previously approved 6.40625 Acres Licensed Land under license no. 14 of 2021 in Village Bajghera, Sector - 114, Gurugram.													
DAILY WATER DEMAND & PUMPING SYSTEM													
Sl. No.	Description	Multi-dwelling unit or Area in Sqm.	Population /Unit or per Sqm.	Total Population	Water Demand in LPCD	Total Water Demand in LPD	Domestic Water Demand in LPCD	Total Domestic Water Demand in	Flushing Water Demand in LPCD	Total Flushing Water Demand in	Sewage Flow		
											80% of Domestic in LPD	100% of Flushing in LPD	Total Flow in LPD
A	<b>PHASE-I (Approved)</b>												
1	Ground Floor	9054	3	3018									
1.1	First Floor	6353.00	6	1059									
	Total			4077									
2	Permanent Population @ 10 %			408	45	18345.75	25	10192.08	20.00	8153.67	8153.67	8153.67	16307.33
3	Flooring Population @ 90 %			3669	15	55037.25	5	18345.75	10.00	36691.50	14676.60	36691.50	51368.10
4	Second to Fourth Floor	21795.00	10	2180	45	98077.50	25	54487.50	20.00	43590.00	43590.00	43590.00	87180.00
5	Visitors @ 10 % of Office Staff			218	15	3269.25	5	1089.75	10.00	2179.50	871.80	2179.50	3051.30
6	Maintanance Staff			10	45	450.00	25	250.00	20.00	200.00	200.00	200.00	400.00
7	Water Body Makeup ( LS)					10000.00				10000.00			0.00
8	Horticulture . Assunmed area 15 % of the Plot @ 5 LPD/ sqm	LS				25000				25000			0
9	Filter Back Wash					7000		7000		0			7000
	<b>Total</b>			<b>6256</b>		<b>217180</b>		<b>91365</b>		<b>125815</b>			<b>165307</b>
B	Sewerage of this part of proposed expansion is connected to previous development. Therefore, Flushing and irrigation water demand of this part of the propsed development shall be from the STP of previous development												
1	Ground Floor	3395.87	3	1132									
1.1	First Floor	2391.31	6	399									
	Total			1531									
2	Permanent Population @ 10 %			153	45	6887.29	25	3826.27	20.00	3061.02	3061.02	3061.02	6122.03
3	Flooring Population @ 90 %			1377	15	20661.86	5	6887.29	10.00	13774.58	5509.83	13774.58	19284.41
4	Second to Fourth Floor	8252.39	10	825	45	37135.76	25	20630.98	20.00	16504.78	16504.78	16504.78	33009.56
5	Visitors @ 10 % of Office Staff			83	15	1237.86	5	412.62	10.00	825.24	330.10	825.24	1155.33
	<b>Total</b>			<b>2356</b>		<b>65923</b>		<b>31757</b>		<b>34166</b>			<b>59571</b>
C	<b>Balance part of Proposed Expansion</b>												
1	Ground Floor	12747.19	3	4249									
1.1	First Floor	9055.73	6	1509									



	Total			5758									
2	Permanent Population @ 10 %			576	45	25912.58	25	14395.88	20.00	11516.70	11516.70	11516.70	23033.41
3	Floaring Population @ 90 %			5183	15	77737.75	5	25912.58	10.00	51825.17	20730.07	51825.17	72555.23
4	Second to Fourth Floor	30806.29	10	3081	45	138628.31	25	77015.73	20.00	61612.58	61612.58	61612.58	123225.16
5	Visitors @ 10 % of Office Staff			308	15	4620.94	5	1540.31	10.00	3080.63	1232.25	3080.63	4312.88
6	Maintanance Staff			10	45	450.00	25	250.00	20.00	200.00	200.00	200.00	400.00
7	Horticulture . Assunmed	LS				10000				10000			0
	Total			8839		257350		119115		138235			223527
	Grand Total			17451		540452		242237		298215			448405
	Total Domestic Water Demand of the Overall Development					242237			246	KLD			
	Domestic Water Demand of Proposed Expansion					150872	LPD		151	KLD			
	Total Flushing Water Demand of Overall Development					253215			253	KLD			
	Flushing Water Feeding from STP of Previous Development ( including part of Proposed Development}					116220			116	KLD			
	Flushing water feeding from the STP of Proposed development to the remaining areas					128235	LPD		128	KLD			
	Irrigation Water Demand of Proposed Expansion- LS					10000	LPD		10	KLD			
	Sewage Generated from the development which is connected to 2nd STP					223527	LPD		224	KLD			
	Proposed Capacity of 2nd STP .								260	KLD			
	Proposed Capacity of 1st STP .					224878	LPD		225	KLD			
	Approved STP 1st Capacity								170	KLD (Approved in Phase - I)			
	Expansion of 1st STP								55	KLD (Expansion in Phase - I)			
	Over all Underground Fire Water Tank Cap. Provided							140KL					
	Fire demand = (100 * (P in thousand )^(1/2)) = (100 x ( 17.451)^1/2)=417.74 KL only for Undrground static Reservior)						SAY	415 KL					
	1/3 Requirement= 415/3                      138						138.00	KL					
1	Water Transfer Pumpset (Domestic) for Over allDevelopment												
	a)	Pump Capacity											
	i	Overall Domestic Demand (i)							246		KLD		
	ii	Pumping Hours/ Day							6		Hrs		
		Quantity of Pumps							3		2 W + 1 s		
	iii	Capacity of Each Pump Considering 2 +1							21		KLH		
	iv	Pumps Proposed- 30 KLH @ 2 +1											
	b)	Domestic Water Pump Head											
	i	Suction lift- ( Positive Suction)							0		Mtr		
	ii	Elevation Difference from Pump Room to GL							10		Mtr		
	iii	Residual Head required at farthest ferrule							17		Mtr		
	iv	Friction Head Loss							15		Mtr		
	v	Total pump head required							42		Mtr		
	Proposed Pump head						Say	45		Mtr			



	c)	Pump HP						
	i	HP of each pump (Lpm*head (m)/75*60*.65(effi)				7.69		HP
		SAY				8.00		HP Each
2.1	Flushing water Transfer Pump of Previous development Which is feeding part of proposed development							
	a	Flushing and irrigation demand				126.00		KLD
	b	Pumping Hours/ Day				6.00		Hours
	c	Quantity of Pumps				3.00		2 W + 1 S
	d	Capacity of Pump Considering 2 + 1				10.50		KLH
	e	Capacity of Each Pump Provided- 24 KLH @ 2 + 1						
2.1.1	Head of Flushing Water Pump							
	a	Suction lift- ( Positive Suction)				0		Mtr
	b	Elevation difference from pump room to GL				10		Mtr
	c	Residual Head required at farthest ferrule				17		Mtr
	d	Friction Head Loss				15		Mtr
	e	Total pump head required				42		Mtr
	f	Proposed Pump head		Say		45		Mtr
2.1.2	Pump HP							
	i	Power Required each pump (Lpm*head (m)/75*60*.65(effi)				6.15		HP
				Say		7.0		HP
2.2	Flushing / Irr. Water Transfer Pumpset exclusively for proposed development excluding the part feeding from previous development.							
2.2.1	a	Total Flu. / Irr. Demand				138		KLD
	b	Pumping Hours/ Day				6		Hrs
	c	Capacity of Pump considering 2 + 1				11.52		KLH
	d	Quantity				2		1 W + 1 S
		Proposed capacity- 19 KLH @ 2+1						
2.2.2	Head Of Flushing Water Pump							
	a	Suction lift- Positive Suction				0		Mtr
	b	Elevation difference from pump room to GL				10		Mtr
	c	Residual Head required at farthest ferrule				17		Mtr
	d	Friction Head Loss				15		Mtr
	e	Total pump head required				42		Mtr
				Say		45		Mtr
	d)	Pump HP						
	i	Power Required each pump (Lpm*head (m)/75*60*.65(effi)				4.87		HP
				Say		5.0		HP
6	CAPACITY OF DG SET							
			No of Pump					
		Equipment Description	Working	Standby	Each power cons (HP)	Total Power Consumption	Unit	



	i	Domestic Water Transfer Pumps of Overall Development	2	1	8.0	16.0	HP
	ii	Flu. / Irr. Water Transfer Pumps Previous Development and Part of New Development	2	1	7.0	14.0	HP
		Flu. / Irr. Water Transfer Pumps Previous Development and Part of New Development	2	1	5.0	10.0	HP
		Total HP Required				30.0	HP
		DG KVA Required (HP*.746)				22	KW
		Provision for Emergency Lighting				20	KW
		<b>DG Capacity- Say</b>				<b>45</b>	<b>KVA</b>
		<b>Capacity of DG Set Considered for Previous Development</b>				<b>30</b>	<b>KVA</b>
		<b>Balance to be required</b>				<b>15</b>	<b>KVA</b>
		SAY				<b>15</b>	<b>KVA</b>
<b>6</b>		<b>HUDA Water Supply Line</b>					
		<b>Already take care of Phase 1 Approval</b>					



**Estimate for Providing Internal Development Works of Proposed Expansion of Plotted Commercial Colony Measuring 17.80625 including the previously approved 6.40625 Acres Licensed Land under license no. 14 of 2021 in Village Bajghera, Sector - 114, Gurugram.**

FINAL ABSTRACT OF COST					
Description	Total of sub work	3% Contingencies	TOTAL	49% departmental	Grand Total
<b>Sub Work-1</b>					
<b>Water Supply</b>	76,76,600	2,30,298	79,06,898	38,74,380	1,17,81,278
<b>Sub Work-2</b>					
<b>Sewerage</b>	80,47,056	2,41,412	82,88,467	40,61,349	1,23,49,816
<b>Sub Work-3</b>					
<b>Drainage</b>	71,91,400	2,15,742	74,07,142	36,29,500	1,10,36,642
<b>Sub Work-4</b>					
<b>Road Works</b>	78,66,000	2,35,980	81,01,980	39,69,970	1,20,71,950
<b>Sub Work-5</b>					
<b>Street Lighting</b>	28,50,000	85,500	29,35,500	14,38,395	43,73,895
<b>Sub Work-6</b>					
<b>Plantation &amp; Road side Trees/Horticulture</b>	18,30,900	54,927	18,85,827	9,24,055	28,09,882
<b>Sub Work-7</b>					
<b>MTC Charge and Resurfacing of Road</b>	1,93,50,000	5,80,500	1,99,30,500	97,65,945	2,96,96,445
<b>TOTALS</b>	<b>Rs. 5,48,11,955.50</b>	<b>Rs. 16,44,358.67</b>	<b>Rs. 5,64,56,314.17</b>	<b>Rs. 2,76,63,593.94</b>	<b>Rs. 8,41,19,908.11</b>
<b>Amount</b>	<b>Rs. 8,41,19,908.11</b>				

Area of commercial development as per License **11.4 Acre**

**Net Cost Per Acre** **Rs. 73,78,939.31**

**For: M/S BAILIWICK BUILDERS PVT. LTD. AND OTHERS IN COLLABORATION WITH M/S EMMAR INDIA LIMITED (FORMERLY KNOW AS EMAAR MGF LAND LTD).**

**Authorized Signatory**



**SUB WORK No. 1****WATER SUPPLY**

**Estimate for Providing Internal Development Works of Proposed Expansion of Plotted Commercial Colony Measuring 17.80625 including the previously approved 6.40625 Acres Licensed Land under license no. 14 of 2021 in Village Bajghera, Sector - 114, Gurugram.**

<b>S No.</b>	<b>Heads</b>	<b>Description</b>	<b>Amount</b>
<b>1</b>	Sub Head 1	HSVP Water Supply Distribution System	Rs. 0.00
<b>2</b>	Sub Head 2	Pumping and machinery	Rs. 23,89,000.00
<b>3</b>	Sub Head 3	Domestic Water supply	Rs. 40,14,000.00
<b>4</b>	Sub Head 4	Flushing/Irrigation System	Rs. 12,73,600.00
<b>TOTAL</b>			<b>Rs. 76,76,600.00</b>



## SUB WORK No. 1

## WATER SUPPLY

## Sub Head 1

## HSVP Water Supply Distribution System

**Measuring 17.80625 including the previously approved 6.40625 Acres Licensed Land under license no. 14 of 2021 in Village Bajghera, Sector - 114, Gurugram.**

S No.	Description	Amount
A	HUDA Rising Main	
	Cost of Laying Rising Main from HSVP Distribution System is already taken in the Service Scheme and Estimate of 6.40625 Acre Development	
Total of Sub Head 1	Carried over to summary of Sub work - 1	Rs. 0.00

**SUB WORK No. 1****WATER SUPPLY  
Pumping and machinery**

**Estimate for Providing Internal Development Works of Proposed Expansion of Plotted Commercial Colony Measuring 17.80625 including the previously approved 6.40625 Acres Licensed Land under license no. 14 of 2021 in Village Bajghera, Sector - 114, Gurugram.**

S No.	Description	Amount
1	Providing & installing VFD based pumping set of following capacity for Domestic Supply	
a)	Capacity 30 KLH each pumps @ 45 mtr. 3 Nos. @ Rs. 1,60,000.00 each.	Rs. 4,80,000.00
2	Providing & installing VFD pumping set of following capacity for Flushing/Irrigation Pumps of previous development and part of new development	
a)	mtr. 3 Nos. @ Rs. 1,50,000.00 each.	Rs. 4,50,000.00
b	Set 2- Capacity 19 KLH @45 M Head 3 Nos @ Rs. 1,10,000.00 each.	Rs. 3,30,000.00
3	Provisions for chlorination plant complete 1 Nos @ Rs. 50,000.0 each	Rs. 50,000.00
4	Provision for making foundations and erection of pumping machinery 1 Set @ RS 90000	Rs. 90,000.00
5	Provision for pipes, valves and specials inside the boosting chamber 1 Set @ Rs. 90,000.00	Rs. 90,000.00
6	Provision for Gen Set. 45 KVA @ Rs. 10,000.00	Rs. 4,50,000.00
7	Provision for electric service connection including electrical fittings for booster pumps etc. 3 Set @ Rs. 1,00,000.00	Rs. 3,00,000.00
8	Additional Capacity of underground water Tanks complete in all respect Total Underground Water Tank Cap. 382 KL and already approved 160 KL Capacity in phase - I 222 KL. @ Rs. 4,500.00 per KL	Rs. 9,99,000.00
9	Provision for carriage of material and other unforeseen items etc. L/S	Rs. 50,000.00
10	<b>Total</b>	<b>Rs. 32,89,000.00</b>
11	<b>Less Deduction for consideration as per previous approved scheme</b>	
a	<b>Domestic Pumps</b>	<b>Rs. 3,00,000.00</b>
b	<b>Flushing Water pumps</b>	<b>Rs. 3,00,000.00</b>
c	<b>DG Sets</b>	<b>Rs. 3,00,000.00</b>
	<b>Total Deduction</b>	<b>Rs. 9,00,000.00</b>
	<b>NET TOTAL COST TO SUB WORK - 1</b>	<b>Rs. 23,89,000.00</b>



**SUB WORK No. 1****WATER SUPPLY****Sub Head 3****Domestic Water supply**

**Estimate for Providing Internal Development Works of Proposed Expansion of Plotted Commercial Colony Measuring 17.80625 including the previously approved 6.40625 Acres Licensed Land under license no. 14 of**

<b>S No.</b>	<b>Description</b>	<b>Amount</b>
<b>1</b>	Providing, laying, jointing and testing DI pipe lines including fittings, valves, cost of excavation etc. complete in all respects.	
<b>a)</b>	100 mm Pipe <b>1152</b> Mtr @ Rs. 1,250 per Mtr	Rs. 14,40,000
<b>2</b>	Providing and fixing sluice valve including cost of surface boxes and masonry chambers etc. complete in all respects.	
<b>a)</b>	100 mm <b>2</b> Each @ Rs. 12,000	Rs. 24,000
<b>3</b>	Providing and fixing External Fire Hydrants including chamber <b>4</b> Nos @ Rs. 15,000	Rs. 60,000
<b>4</b>	Providing and fixing air release valve and scour valve <b>4</b> Nos @ Rs. 10,000	Rs. 40,000
<b>5</b>	Indication plate for valves, hydrant AV etc.	Rs. 1,00,000
<b>6</b>	Provision for carriage of materials and other unforeseen items	Rs. 1,00,000
<b>7</b>	Providing all material, tools & plants to lay pipe with trenchless method for following diameter, including horizontal trenching pulling of HDPE pipe butt welded at a depth of 1500-2500mm depth from grade level complete in all respect.	
	30 Mtr. @ Rs. 75,000 each	Rs. 22,50,000.00
<b>TOTAL CO to SUB WORK - 1</b>		<b>Rs. 40,14,000.00</b>



Estimate for Providing Internal Development Works of Proposed Expansion of Plotted Commercial Colony Measuring 17.80625 including the previously approved 6.40625 Acres Licensed Land under license no. 14 of 2021 in Village Bajghera, Sector - 114, Gurugram.																									
Domestic Water supply hydraulic calculation																									
S No.	Line No	Total			Fixed Population			Floating Population			Domestic Water Demand @ 25 lpcd for Fixed Population and 5 lpcd for Floating Population	Total water demand ltr /day	Total water demand ltr /day (considering 6Hr pumping)	Length of Pipe	Proposed line dia.	Velocity in m/sec	head losse	self head losses	Total Head Loss	Ground Level at Starting	Ground Level at Ending	HL at Start	HL at End	Residual Head	Remarks
					Self	Branch	Total	Self	Branch	Total															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
		NOS	NOS	NOS	NOS			NOS			LPD	LPD	LPM	Mtr	MM	Mtr/sec	Mtr/Mtr	Mtr	Mtr	Mtr	Mtr	Mtr	Mtr	Mtr	
		PHASE - 2																							
1	C1 - C2	21	92	113	692	3030	3722	1035	4536	5571	120910.0	120910.0	335.9	132.5	100	0.855	0.01057	1.4008	2.8522	0.00	0.00	44.29	42.89	40.037	
2	C1 - C3	4	88	92	132	2899	3030	197	4338	4536	98440.0	98440.0	273.4	76.5	100	0.696	0.00722	0.5527	1.4513	0.00	0.00	42.889	42.34	40.885	
3	C3 - C4	11	21	32	362	692	1054	542	1035	1578	34240.0	34240.0	95.1	82	100	0.242	0.00102	0.0838	0.1257	0.00	0.00	42.889	42.81	42.805	
4	C4 - C5	21	0	21	692	0	692	1035	0	1035	22470.0	22470.0	62.4	89.5	100	0.159	0.00047	0.0419	0.0419	0.00	0.00	42.805	42.76	42.763	
5	C3 - C5	7	49	56	231	1614	1845	345	2416	2761	59920.0	59920.0	166.4	55	100	0.424	0.00288	0.1585	0.8987	0.00	0.00	42.805	42.65	42.647	
6	C5 - C6	49	0	49	1614	0	1614	2416	0	2416	52430.0	52430.0	145.6	329	100	0.371	0.00225	0.7402	0.7402	0.00	0.00	42.647	41.91	41.906	
7	C7 - C9	5	23	28	165	758	922	247	1134	1380	29960.0	29960.0	83.2	73	100	0.212	0.00080	0.0583	0.0876	0.00	0.00	44.88	44.82	44.822	
8	C8 - C9	12	0	12	395	0	395	592	0	592	12840.0	12840.0	35.7	176.5	100	0.091	0.00017	0.0293	0.0293	0.00	0.00	44.822	44.79	44.793	
9	C9 - C10	11	0	11	362	0	362	542	0	542	11770.0	11770.0	32.7	138.5	100	0.083	0.00014	0.0196	0.0196	0.00	0.00	44.793	44.77	44.773	

**SUB WORK No. 1****WATER SUPPLY****Sub Head 4****Flushing/Irrigation System**

**Measuring 17.80625 including the previously approved 6.40625 Acres Licensed Land under license no. 14 of 2021 in Village Bajghera, Sector - 114, Gurugram.**

<b>S No.</b>	<b>Description</b>	<b>Amount</b>
<b>1</b>	Providing, laying, jointing and testing pipes lines conforming uPVC pipe 10 Kg/Sq.cm Class-IV (IS: 4985) including cost of excavation etc. complete in all respects.	
<b>1.1</b>	50 mm od Pipe 282 Mtr @ Rs. 400	Rs. 1,12,800.00
	63 mm od Pipe 387 Mtr @ Rs. 500	Rs. 1,93,500.00
	75 mm od Pipe 300 Mtr @ Rs. 625	Rs. 1,87,500.00
	90 mm od Pipe 552 Mtr @ Rs. 900	Rs. 4,96,800.00
<b>2</b>	Providing and fixing sluice valve including cost of surface boxes and masonry chambers etc. complete in all respects.	
<b>2.1</b>	80 mm 4 Each @ Rs. 10,000	Rs. 40,000.00
<b>3</b>	Providing and fixing Garden Hydrant 28 Nos. @ Rs. 3,500 each	Rs. 98,000.00
<b>4</b>	Providing and fixing air release valve and scour valve 3 Nos. @ Rs. 5,000 each	Rs. 15,000.00
<b>5</b>	Indication plate for valves, hydrant AV etc.	Rs. 50,000.00
<b>6</b>	Provision for carriage of materials and other unforeseen items	Rs. 80,000.00
<b>TOTAL CO to SUB WORK - 1</b>		<b>Rs. 12,73,600.00</b>



Estimate for Providing Internal Development Works of Proposed Expansion of Plotted Commercial Colony Measuring 17.80625 including the previously approved 6.40625 Acres Licensed Land under license no. 14 of 2021 in Village Bajghera, Sector - 114, Gurugram.																									
Flushing Water supply hydraulic calculation																									
S No.	Line No	Total			Fixed Population			Floating Population			Flushing Water Demand @ 20 lpcd for Fixed Population and 10 lpcd for Floating Population	Total water demand ltr /day	Total water demand ltr /day (considering 6Hr pumping)	Length of Pipe	Proposed line dia.	Velocity in m/sec	head losse	self head losses	Total Head Loss	Ground Level at Starting	Ground Level at Ending	HL at Start	HL at End	Residual Head	Remarks
					Self	Branch	Total	Self	Branch	Total															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
		NOS	NOS	NOS	NOS			NOS			LPD	LPD	LPM	Mtr	MM	Mtr/sec	Mtr/Mtr	Mtr	Mtr	Mtr	Mtr	Mtr	Mtr	Mtr	
	PH.1 - F1	0	28	28	0	922	922.32	0	1380	1380.4	32250.4	32250.4	89.6	213	90	0.281	0.00153	0.3255	0.3255	0.00	0.00	44.779	44.45	44.454	
	F1 - F2	11	17	28	362	559.98	922.32	542	838.1	1380.4	32250.4	32250.4	89.6	134	90	0.281	0.00153	0.2048	0.2048	0.00	0.00	44.454	44.25	44.249	
	F2 - F3	5	12	17	165	395.28	559.98	247	591.6	838.1	19580.6	19580.6	54.4	79	75	0.246	0.00147	0.1165	0.3212	0.00	0.00	44.249	44.13	44.132	
	F3 - F4	8	4	12	264	131.76	395.28	394	197.2	591.6	13821.6	13821.6	38.4	89	63	0.246	0.00181	0.1609	0.3657	0.00	0.00	44.132	43.97	43.972	
	F4 - F5	4	0	4	132	0	131.76	197	0	197.2	4607.2	4607.2	12.8	121	50	0.130	0.00073	0.0882	0.4094	0.00	0.00	43.972	43.88	43.883	
	PH2-F6	0	113	113	0	3722.22	3722.22	0	5570.9	5570.9	130153.4	130153.4	361.5	5	90	1.136	0.02024	0.1012	2.3568	0.00	0.00	45.00	44.90	44.899	
	F6-F7	8	37	45	264	1218.78	1482.3	394	1824.1	2218.5	51831.0	51831.0	144.0	69.5	90	0.452	0.00368	0.2557	0.8445	0.00	0.00	44.899	44.64	44.643	
	F7-F8	19	18	37	626	592.92	1218.78	937	887.4	1824.1	42616.6	42616.6	118.4	55.5	75	0.536	0.00622	0.3454	0.5888	0.00	0.00	44.643	44.30	44.298	
	F8-F9	11	7	18	362	230.58	592.92	542	345.1	887.4	20732.4	20732.4	57.6	40.5	63	0.369	0.00383	0.1551	0.2435	0.00	0.00	44.298	44.14	44.143	
	F9-F10	7	0	7	231	0	230.58	345	0	345.1	8062.6	8062.6	22.4	43	50	0.228	0.00205	0.0883	0.0883	0.00	0.00	44.143	44.05	44.054	
	F6-F11	0	68	68	0	2239.92	2239.92	0	3352.4	3352.4	78322.4	78322.4	217.6	43	90	0.684	0.00790	0.3398	1.4110	0.00	0.00	44.054	43.71	43.714	
	F12-F11	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	77.5	50	0.000	0.00000	0.0000	0.0000	0.00	0.00	43.714	43.71	43.714	
	F11-F13	6	62	68	198	2042.28	2239.92	296	3056.6	3352.4	78322.4	78322.4	217.6	87.5	90	0.684	0.00790	0.6915	0.6915	0.00	0.00	43.714	43.02	43.023	
	F13-F14	20	11	31	659	362.34	1021.14	986	542.3	1528.3	35705.8	35705.8	99.2	90	63	0.636	0.01048	0.9435	1.0712	0.00	0.00	43.023	42.08	42.079	
	F13-F15	8	23	31	264	757.62	1021.14	394	1133.9	1528.3	35705.8	35705.8	99.2	56.5	63	0.636	0.01048	0.5923	1.1147	0.00	0.00	42.079	41.49	41.487	
	F14-F15	11	0	11	362	0	362.34	542	0	542.3	12669.8	12669.8	35.2	83	63	0.226	0.00154	0.1277	0.1277	0.00	0.00	41.487	41.36	41.359	
	F15-F16	13	10	23	428	329.4	757.62	641	493	1133.9	26491.4	26491.4	73.6	164.5	75	0.333	0.00258	0.4244	0.5224	0.00	0.00	41.359	40.93	40.935	
	F16-F17	4	6	10	132	197.64	329.4	197	295.8	493	11518.0	11518.0	32.0	27.5	63	0.205	0.00129	0.0355	0.0980	0.00	0.00	40.935	40.90	40.900	
	F17-F18	6	0	6	198	0	197.64	296	0	295.8	6910.8	6910.8	19.2	40.5	50	0.195	0.00154	0.0625	0.0625	0.00	0.00	40.900	40.84	40.837	



**Estimate for Providing Internal Development Works of Proposed Expansion of Plotted Commercial Colony Measuring 17.80625 including the previously approved 6.40625 Acres Licensed Land under license no. 14 of 2021 in Village**

S No.	Description	Amount ( RS)
1	Providing, laying, jointing and testing Sewer pipe lines (stoneware pipes class SP-1) including fittings, valves, Manholes & cost of excavation and connect to STP along with bypass to HSVP sewer line etc. complete in all respects.	
a)	200 mm dia Average Depth upto 2 Mtr. 815 Mtr. @ Rs. 1,300	Rs. 10,59,500.00
b)	200 mm dia Average Depth 2 to 4 Mtr. 309 Mtr. @ Rs. 1,800	Rs. 5,56,200.00
2	Providing, laying, jointing and testing Sewer by-pass pipe lines 160 od uPVC pipe 10kg/sqcm including fittings, Manholes & cost of excavation etc. complete in all respects.	
	160 mm OD Average Depth upto 1.5 Mtr. 291 Mtr. @ Rs. 1,311	Rs. 3,81,355.50
3	Sewage Treatment Plant of 260 KL ( Phase 2 part) and 55KL Expansion of (Phase 1 STP) Total Cap. 315 KL@ Rs. 17600/ KL	Rs. 55,44,000.00
4	Provision for providing oblique junctions (L.S)	Rs. 96,000.00
5	Provision for temporary timbering etc. (L.S)	Rs. 80,000.00
6	Provision for carriage of material (L.S)	Rs. 80,000.00
7	Provision for providing and fixing vent shaft at suitable places as per PH requirements. (L.S)	Rs. 1,00,000.00
8	Provision for making connection with HUDA sewer	Rs. 1,50,000.00
<b>TOTAL CO to FINAL ABSTRACT OF QUANTITY</b>		<b>Rs. 80,47,055.50</b>



Estimate for Providing Internal Development Works of Proposed Expansion of Plotted Commercial Colony Measuring 17.80625 including the previously																
DESIGN STATEMENT OF SEWERAGE LINE																
S No	Line No		Plot		Total water consumption	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 carryin g capacity	Length	Fall in Pipe Line (m)	REMARKS
	From	To	Main Plots	Plots	LPD	LPD	LPD	LPS	mm	1/	m/Sec	LPS		Mtr	Mtr.	
Phase 2																
1	S1	S2	10	10	22501.6	18001.28	54003.84	0.63	200	200	0.74	11.59	OK	64.5	0.32	
2	S3	S2	10	10	22501.6	18001.28	54003.84	0.63	200	200	0.74	11.59	OK	60.5	0.30	
3	S2	S4	0	20	45003.2	36002.56	108007.68	1.25	200	200	0.74	11.59	OK	38	0.19	
4	S4	S6	7	27	60754.32	48603.456	145810.37	1.69	200	200	0.74	11.59	OK	36	0.18	
5	S5	S6	8	8	18001.28	14401.024	43203.072	0.50	200	200	0.74	11.59	OK	49.5	0.25	
6	S6	S8	15	50	112508	90006.4	270019.2	3.13	200	200	0.74	11.59	OK	90	0.45	
7	S7	S8	14	14	31502.24	25201.792	75605.376	0.88	200	200	0.74	11.59	OK	93	0.47	
8	S8	S9	5	69	155261	124208.83	372626.5	4.31	200	200	0.74	11.59	OK	104	0.52	
9	S10	S9	44	44	99007.04	79205.632	237616.9	2.75	200	200	0.74	11.59	OK	200	1.00	
10	S9	STP	0	113	254268.1	203414.46	610243.39	7.06	200	200	0.74	11.59	OK	5	0.03	
11	S11	S12	16	16	36002.56	28802.048	86406.144	1.00	200	200	0.74	11.59	OK	179.5	0.90	
12	S13	S12	12	28	63004.48	50403.584	151210.75	1.75	200	200	0.74	11.59	OK	202.5	1.01	
13	S12	PH1	0	28	63004.48	50403.584	151210.75	1.75	200	200	0.74	11.59	OK	1	0.01	
BY Pass connection							50403.584	151210.75	1.75	160				291		



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

Estimate for Providing Internal Development Works of Proposed Expansion of Plotted Commercial Colony Measuring 17.80625 including the previously approved 6.40625 Acres Licensed Land under license no. 14 of 2021 in Village Bajghera, Sector - 114, Gurugram.

S No.	Description	Amount
1	Providing, laying, RCC pipe class NP-2 excavation, manholes etc. complete in all respects	
a)	250 mm dia Average Depth upto 2 Mtr. 123 Mtr. @ Rs. 1,800	Rs. 2,21,400.00
b)	300 mm dia Average Depth upto 2 Mtr. 1200 Mtr. @ Rs. 2,000	Rs. 24,00,000.00
c)	400 mm dia Average Depth upto 2 Mtr. 208 Mtr. @ Rs. 2,500	Rs. 5,20,000.00
2	Provision for lighting and watching and temporary diversion of traffic	Rs. 2,00,000.00
3	Provision for road gullies & connecting pipe L.S.	Rs. 2,50,000.00
4	Provision for rainwater harvesting arrangements	
	Rs. 2,50,000.00 per acre - 11.4 Acre	Rs. 28,50,000.00
5	Provision for timbering & shoring (L.S.)	Rs. 1,50,000.00
6	Provision for road cutting and making (L/S)	Rs. 2,50,000.00
7	Provision for making connection with HUDA Mains.	Rs. 3,50,000.00
<b>TOTAL CO to FINAL ABSTRACT OF QUANTITY</b>		<b>Rs. 71,91,400.00</b>



Estimate for Providing Internal Development Works of Proposed Expansion of Plotted Commercial Colony Measuring 17.80625 including the previously approved 6.40625 Acres Licensed Land under license no. 14 of 2021 in Village Bajghera, Sector - 114, Gurugram.

DESIGN OF STORM WATER DRAINAGE SYSTEM																			
SL NO	LINE NO.	LENGTH	SELF AREA TO BE DRAINED IN	AREA IN HACTARES			DISCHARGE IN CUM/SEC RAIN INTENSITY =6.25mm	DISCHARGE	Pipe Dia	SLOPE	VELOCITY	DISCHARGE CAPACITY	Check	GROUND LEVEL AT START	GROUND LEVEL AT END	FALL	INVERT LEVEL AT START	INVERT LEVEL AT END	REMARKS
	FROM	MTR	SQM	SELF	BRANCH	TOTAL	M3/HR	IN M3/SEC	in mm	1 IN	M/SEC	IN M3/SEC		MTR	MTR	MTR	MTR.	MTR	
1	D1-D2	121.00	2429	0.24		0.24	9.109	0.0025	300	400	0.684	0.05	OK	213.100	213.100	0.303	211.900	211.598	
2	D2-PH1	15.00	1432	0.14	0.24	0.39	14.479	0.0040	300	400	0.684	0.05	OK	213.100	213.100	0.038	211.598	211.560	
3	D3 - D4	44.50	547	0.05	0.00	0.05	2.051	0.0006	250	300	0.699	0.03	OK	213.100	213.100	0.148	211.900	211.752	
4	D4-D5 PH1	48.00	1177	0.12	0.05	0.17	6.465	0.0018	300	400	0.684	0.05	OK	213.100	213.100	0.120	211.752	211.632	
5	D7 - D6	78.50	1412	0.14	0.00	0.14	5.295	0.0015	250	300	0.699	0.03	OK	213.100	213.100	0.262	211.900	211.638	
6	D6-D5 PH1	7.50	184	0.02	0.14	0.16	5.985	0.0017	300	400	0.684	0.05	OK	213.100	213.100	0.019	211.638	211.620	
7	D8 - D9	162.00	2796	0.28	0.00	0.28	10.485	0.0029	300	400	0.684	0.05	OK	213.100	213.100	0.405	211.900	211.495	
8	D10 - D11	276.50	8173	0.82	0.00	0.82	30.649	0.0085	300	400	0.684	0.05	OK	213.100	213.100	0.691	211.900	211.209	
9	D12 - D11	108.00	2875	0.29	0.00	0.29	10.781	0.0030	300	400	0.684	0.05	OK	213.100	213.100	0.270	211.900	211.630	
10	D11 - D9	33.00	2436	0.24	1.10	1.35	50.565	0.0140	400	600	0.677	0.08	OK	213.100	213.100	0.055	211.209	211.154	
11	D9 - D14	31.00	3367	0.34	1.63	1.96	73.676	0.0205	400	600	0.677	0.08	OK	213.100	213.100	0.052	211.154	211.102	
12	D13 - D14	125.50	3661	0.37	0.00	0.37	13.729	0.0038	300	400	0.684	0.05	OK	213.100	213.100	0.314	211.900	211.586	
13	D14-D15 PH1	78.00	3885	0.39	2.33	2.72	101.974	0.0283	400	600	0.677	0.08	OK	213.100	213.100	0.130	211.102	210.972	
14	D16 -D17 PH1	60.00	2479	0.25	0.00	0.25	9.296	0.0026	300	400	0.684	0.05	OK	213.100	213.100	0.150	211.900	211.750	
15	D18 - D19	95.00	446	0.04	0.00	0.04	1.673	0.0005	300	400	0.684	0.05	OK	213.100	213.100	0.238	211.900	211.663	
16	D20 - D19	75.00	3049	0.30	0.00	0.30	11.434	0.0032	300	400	0.684	0.05	OK	213.100	213.100	0.188	211.900	211.713	
17	D19 - D22	23.00	2862	0.29	0.35	0.64	23.839	0.0066	400	600	0.677	0.08	OK	213.100	213.100	0.038	211.663	211.624	
18	D21 - D22	106.50	557	0.06	0.00	0.06	2.089	0.0006	300	400	0.684	0.05	OK	213.100	213.100	0.266	211.900	211.634	
19	D22 - D23 PH1	42.50	2883	0.29	0.06	0.34	12.900	0.0036	400	600	0.677	0.08	OK	213.100	213.100	0.071	211.624	211.553	



**SUB WORK No. 4****ROAD WORK**

Estimate for Providing Internal Development Works of Proposed Expansion of Plotted Commercial Colony Measuring 17.80625 including the previously approved 6.40625 Acres Licensed Land under license no. 14 of 2021 in Village

Width in meter	length in meter	Metalled Portion	Area in Sqm.
6	201.5	5	1007.5
9	102.5	6	615
10	60	7	420
12	21.5	7	150.5
24	363	14	5082
<b>Total</b>	<b>547</b>		<b>7275</b>
Add 5% for curves			<b>363.75</b>
Total Area			<b>7638.75</b>
SAY			<b>8000</b>

S No.	Description	Amount
<b>1</b>	Provision for leveling & earth filling as per site condition	
	Approx <b>11.4 Acre</b> @ Rs. 80,000 per acre	Rs. 9,12,000.00
<b>2a</b>	P/L 100mm thick (compacted) WBM with earth as per most Specification using 63-40mm size stone aggregate. The rate is Inclusive of all labour, material & equipment etc.	
	8000 Sqm @ Rs. 250 per sqm	Rs. 20,00,000.00
<b>2b</b>	Provision for making connection with HSVP (L/S)	
	8000 Sqm @ Rs. 250 per sqm	Rs. 20,00,000.00
<b>2c</b>	25mm thick premix carpet with seal coat	
	8000 Sqm @ Rs. 300 per sqm	Rs. 24,00,000.00
<b>3</b>	Provision for guide map and other unforeseen item L.S	Rs. 80,000.00
<b>4</b>	Provision for plot indicators L.S	Rs. 80,000.00
<b>5</b>	Provision for demarcating burgies L.S	Rs. 80,000.00
<b>6</b>	Provision for traffic arrangement L.S	Rs. 1,20,000.00
<b>7</b>	Provision for making approach to each plot.	
	Approx <b>11.4 Acre</b> @ Rs. 10,000 per acre	Rs. 1,14,000.00
<b>8</b>	Provision for carriage of material & unforeseen items L.S	Rs. 80,000.00
	<b>TOTAL CO to FINAL ABSTRACT OF QUANTITY</b>	<b>Rs. 78,66,000.00</b>



## SUB WORK No. 4 ROAD WORK

## SUB WORK No. 4 ROAD WORK

SUB WORK No. 4		ROAD WORK
Estimate for Providing Internal Development Works of Proposed Expansion of Plotted Commercial Colony Measuring 17.80625 including the previously approved 6.40625 Acres Licensed Land under license no. 14 of		

Sl. No.	Node	Road Width in Mtr.				
		6 Mtr. Wide	9 Mtr. Wide	10 Mtr. Wide	12 Mtr. Wide	24 Mtr. Wide
1	A	133	--	--	--	--
2	B	--	--	--	21.5	--
3	C	--	--	--	--	218.5
4	D	--	102.5	--	--	--
5	E	--	--	60	--	--
6	F	68.5	--	--	--	--
7	G	--	--	--	--	144.5
		-----,--	-----,--	-----,--	-----,--	-----,--
	<b>Total</b>	<b>201.5</b>	<b>102.5</b>	<b>60</b>	<b>21.5</b>	<b>363</b>



**SUB WORK No. 5** **Street Lighting**

Measuring 17.80625 including the previously approved 6.40625 Acres Licensed Land under license no. 14 of 2021 in Village Bajghera, Sector - 114, Gurugram.

S No.	Description	Amount
1	Providing street lightning on roads as per standard specifications of HVPN.	
	Approx <b>11.40000</b> Acre @ Rs. 2,50,000 per acre	Rs. 28,50,000.00
	<b>TOTAL CO to FINAL ABSTRACT OF QUANTITY</b>	<b>Rs. 28,50,000.00</b>



**SUB WORK No. 6****Plantation & Road side Trees/Horticulture**

17.80625 including the previously approved 6.40625 Acres Licensed Land under license no. 14 of 2021 in Village Bajghera, Sector - 114, Gurugram.

S No.	Description	Amount
<b>1</b>	<b>Development of Green areas</b>	
<b>a</b>	Trenching the ordinary soil up to dept of 60 cm including removal and stacking of serviceable material and disposing of by spreading and leveling within a lead to 50m and making up the trenches area of proper leads by filling with earth mixed with manure before and after flooding trench with water including cost of imported earth and manure	
<b>b</b>	Rough dressing of roof area	
	Grassing with "Doob Grass" including watering and maintenance of lawns for 30 days till the grass a thick lawn, free weeds and fit for moving in rows 7.5m apart in either direction including provision for hedges and barbed wire fencing around park.	
	Approx. 11.40 Acres @ Rs. 1,50,000 per Acres	Rs. 17,10,000.00
<b>2</b>	<b>Planting Tree</b>	
<b>a</b>	Provision of trees, along 6M, 9 M, 10 M & 12.0 M wide(One Side) and 24 M wide (Both Side) roads at 12 Mtr intervals.	
	$(386/12) + ((363) \times 2/12) = 93$ @ Rs. 1,300 per tree	Rs. 1,20,900.00
	<b>TOTAL CO to FINAL ABSTRACT OF QUANTITY</b>	<b>Rs. 18,30,900.00</b>



**SUB WORK No. 7** **MTC Charge and Resurfacing of Road**

**Estimate for Providing Internal Development Works of Proposed Expansion of Plotted Commercial Colony Measuring 17.80625 including the previously approved 6.40625 Acres Licensed Land under license no. 14 of 2021**

S No.	Description	Amount
1	Provision for maintenance charge for Water supply, sewerage, storm water, Drainage, roads, street light, Hort. Etc. Complete including operation & Establishment charges as per HSVP Norms after completion.	
	Area 11.4 Acre @ Rs. 7,50,000 per acre	Rs. 85,50,000.00
2	Provision for resurfacing of roads after First five year of maintenance.	
	Total Road area 8000.00 Sqmt @ Rs. 600 per Sqmt	Rs. 48,00,000.00
3	Provision for resurfacing of roads after 10 Years of MTC.	
	Total Road area 8000.00 Sqmt @ Rs. 750 per Sqmt	Rs. 60,00,000.00
	<b>TOTAL CO to FINAL ABSTRACT OF QUANTITY</b>	<b>Rs. 1,93,50,000.00</b>

