PROJECT:- LAYOUT PLAN OF AFFORDABLE RESIDENTIAL PLOTTED COLONY (DDJAY-2016), OVER AN AREA OF 14.99375 ACRES(12.85625 ACRES AFTER MIGRATION FROM PART OF LICENSE NO. 24 OF 2012 DATED 27.03.2012 GRANTED FOR AN AREA MEASURING 17.9875 ACRE FOR SETTING UP OF GROUP HOUSING COLONY ALONG WITH 2.1375 ACRE FRESH AREA) IN THE REVENUE ESTATE OF VILLAGE KHERKI MAJRA, SECTOR 102A, GURUGRAM BEING DEVELOPED BY RADHEY BUILD HOME PVT. LTD. AND M2K PROJECTS LLP IN COLLABORATION WITH ADANI M2K PROJECTS LLP.

SERVICE PLAN ESTIMATE

ADANI M2K PROJECTS LLP

WRITER SIGNATURE

ANOJ TEVATIA
B. Arch. (Hons.)
CA/95/18739

ARCHITECT SIGNATURE

PROJECT:- LAYOUT PLAN OF AFFORDABLE RESIDENTIAL PLOTTED COLONY (DDJAY-2016), OVER AN AREA OF 14.99375 ACRES(12.85625 ACRES AFTER MIGRATION FROM PART OF LICENSE NO. 24 OF 2012 DATED 27.03.2012 GRANTED FOR AN AREA MEASURING 17.9875 ACRE FOR SETTING UP OF GROUP HOUSING COLONY ALONG WITH 2.1375 ACRE FRESH AREA) IN THE REVENUE ESTATE OF VILLAGE KHERKI MAJRA, SECTOR 102A, GURUGRAM
BEING DEVELOPED BY RADHEY BUILD HOME PVT. LTD. AND M2K PROJECTS LLP IN COLLABORATION WITH ADANI M2K PROJECTS LLP.

ESTIMATE FOR PROVIDING WATER SUPPLY.SEWERAGE. STORM WATER DRAINAGE, ROADS,STREET LIGHTING AND HORTICULTURE IN RESPECT OF PROPOSED AFFORDABLE RESIDENTIAL PLOTTED COLONY (DDJAY) AT SEC 102A -GURGAON, HARAYANA.

The district of Gurugram is bounded by 28.4750°north latitude and 76.2840° east longitude. Gurgaon, officially Gurugram, is a city located in the northern Indian state of Haryana. It is situated near the Delhi-Haryana border, about 30 kilometres (19 mi) southwest of the national capital New Delhi and 268 km (167 mi) south of Chandigarh, the state capital.[5] It is one of the major satellite cities of Delhi and is part of the National Capital Region of India.

PROJECT REPORT/ESTIMATE FOR PROVIDING WATER SUPPLY, SEWERAGE, STROM WATER DRAINAGE, ROADS, STREET LIGHTING AND HORTICULURE IN RESPECT OF DDJAY RESIDENTAIL PLOTTED COLONY IN SECTOR-102A, GURGAON, HARYANA

The Haryana Government has prepared a master plan for development of Residential/Industrial/ Commercial urban estate GURGAON. DEVELOPED BY RADHEY BUILD HOME PVT. LTD. AND M2K PROJECTS LLP IN COLLABORATION WITH ADANI M2K PROJECTS LLP has decided to develop a part of the area in this master plan and has named this part as DDJAY Residential plotted colony. This scheme is located in SECTOR-102A, GURGAON, HARYANA.

Water Supply

The source of water supply shall be HSVP 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 from the riser and then pumped to the overhead water tanks of each plot.

1 **Source**

The source of water supply in this area is from Municipal water. Tubewells is the secondary source of water if got permission from Central Ground water Authority. The average yield of tubewell with 60-80 ft strainers will be about 26,000 litre per hour. The recharging of underground water table in this belt is stated to be good. However still we shall resort to rain water harvesting system to keep up the recharging system. The number of tubewells required for the above area has been worked out and the tubewells will be bored in tune with growth of demand to avoid absolence of the tubewells. The ultimate requirement of tubewells includes provisions of 10% stand by. Ultimately, water shall be supplied to the Project by **HARYANA SHAHARI VIKAS PRADHIKARAN, GURGAON.**

2 **Design**

The scheme has been designed for approved population of **3888 persons in 15 acres**. The rate of water supply per head per day has been taken as 155.25 litres (135+15%)as per NBC 2016 / HSVP norms. in addition to above necessary provision of water for community area, commercial area, parks etc. have been taken into account for calculating the maximum quantity of water requirement.

3 **Pumping Equipments**

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.

4 **Under Ground Storage**

Underground storage tank provision has been made for ~~420~~ 220 **KL** capacity. in 2 compartments, which caters for the domestic and ~~280~~ 100 KL fire as a separate tank to full fill fighting requirement. The water for domestic water compartment shall overflow the fire compartment so that the water in the fire compartment also remains fresh.

5 **Boosting Station**

The boosting is being planned near UGSR catering to the above requirement.

6 **Distribution System**

The distribution system for this development has been designed to supply @ 155.25 litre per head her day @ 3 times the average rate of flow on 'Hazen william' formula with C-140. Necessary provision for laying D.I. pipes conforming to relevant IS standards along with valves and specials has been made in the project. The minimum terminal head at any point will be more than 27.00 meters so that it can serve the stilt and four floors stories construction envisaged in the plan. Minimum pipe dia for distribution is kept as 100 mm dia.

7 **Rising Mains**

Rising mains from HSVP water main or sector road to water works have also been designed and provision for D.I. pipe line (dia as/ design) has been made in this estimate.

8 **Sewerage**

This scheme is designed for sewer connecting to the proposed sewage treatment plant. The sewage system has been marked on the respective The sewer lines have been designed for 3 times average DWF in relation to the water supply demand assuming that 80% of the domestic water supply shall find its way into the proposed sewer. DWC pipe sewers have been proposed and designed to run half full. The sewers have been designed on 0.75 M per second minimum velocity i.e. self cleansing velocity Necessary provision for laying DWC pipes manholes etc. has been made in this estimate.

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9 Storm Water Drainage

suitable provisions are contemplated in our scheme to ensure better recharging of underground water table in the area R.C.C. Hume pipes drain with minimum 400mm dia is proposed in this area.

Necessary design statement for entire storm drainage system has been prepared and attached with estiamte.

10 Roads

Cost of road has taken in the estimate.

11 Street Lighting

The provision for street lighting with in the site area has been made.

12 Horticulture

The usual provision of road side plantation of tree guards has been made for all roads.The parks shall be developed by providing lawns etc.

13 Specifications :

The work will be carried out in accordance with the standard specification of P.H. Department as laid down by HSVP & Haryana Government.

14 Rates

Estimate for providing services in this pocket has been prepared on the recent HSVP rates.

15 Cost

1106.18 ~~1019.74~~

The total cost of development in this project including various P.H. and B & R services works out to **Rs. ~~98~~.71** Lacs which includes 3% contingency and PE charges and 49% departmental charges also.

~~56.65~~ 73.78

The cost per gross acre for this phase works out to **Rs. ~~50~~ 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.

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DESIGN CALCULATION

Daily water requirement

			15 Acres	Unit	
	Total No. of Plots (General)		288	Nos	
	Total No. of Plots (EWS)		0	Nos	
	Population per plot (General)		13.5	Person/Plot	
	Population per plot (EWS)		9	Person/Plot	
1	Therefore population (General)		3888	Persons	
	Therefore population(EWS)		0	Persons	
	Total Population		3888	Persons	
		SAY	3888	Persons	
	Total daily Water requirement for plots (135 Lpcd + 15%)	@	155.25	LPCD	
			Domestic @ 65%	Flushing @ 35%	
			392347.80 ✓	211264.2 ✓	LPD
		Or Say	**392.40**	**211.30**	**KLD (1)**
2	**Non Residential building water requirement**				
a	Area of commercial 2426.30 sqm		1	Nos	
	Daily water requirement	@	32000	Ltrs/Acre	
	Area of commercial		0.59953	Acre	
	Daily water requirement	@	20800	11200	Ltrs/Acre
	Therefore daily water requirement		12470.23	6714.74	lit/day
		Or Say	**12.47** ✓	**6.71** ✓	KLD
b	Area of community center 6067.77 sqm (1.50 Acre)		1	Nos	Nos
	Daily water requirement	@	25000	lit/day	
	Daily water requirement	@	16250	8750	lit/day
	Therefore daily water requirement		24375 ~~16250~~	13125 ~~8750~~	lit/day
		Or Say	~~16.25~~ 24.38	~~8.75~~ 13.13	KLD
c	No. of milk and vegetable booth		1		
	Daily water requirement	@	1000	Ltrs	
	Daily water requirement	@	650	350	Ltrs
	Therefore daily water requirement		0	0	lit/day
		Or Say	0.65	0.35	KLD
	Total 2 (a+b+c)		37.50 ~~28.73~~	20.19 ~~15.16~~	**KLD (2)**
3	Area under Parks 4592.43 sqm		1.14 ~~1.00~~	Acre	Acre
	Daily water requirement	@	25000	lit/acre/day	
	Therefore daily water requirement			~~25000~~ 28500	lit/day
				~~25.00~~ 28.50	KLD
4	Area under Roads		2.77	Acre	
	Daily water requirement	@	5000	lit/acre/day	
	Therefore daily water requirement			13834	lit/day
				13.83	KLD
		Total		~~38.83~~ 42.33	**KLD**
I	**Total daily requirement**				
a)	For (1+2)		429.90 ~~421.12~~	~~226.76~~ 231.49	KLD
b)	Under Road+ Parks (3+4)		0.00	~~38.83~~ 42.33	KLD
	Total Daily Requirement		429.90 ~~421.12~~	~~266.60~~ 273.82	KLD
		Or Say	~~422.00~~ 430	~~266.00~~ 274	**KLD**
II	**Tubewell**				
	Assuming working hours of tubewells		8	hours	
	Assuming discharge/hour of each tubewell		26	KL/hours	
	Total domestic water requirement		~~422~~ 430	KLD	
	No. of tubewells required		~~2.03~~ 2.07		
	Add 10% standby		~~0.20~~ 0.21		
		Total	~~2.23~~ 2.28		
		Proposed	**2.00**		

So It is proposed 2 nos of tubewell. The provision of 2 no of tubewell has been made in the estimate because the water demand for horticulture and the road washing purpose is to be met from re circulated after treatment at STP and ultimate water supply is to be provided by [illegible]

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III Pumping machinery for tubewell

a)	Gross working foad	=	45.00	m
b)	Average Fall in S.L	=	3.05	m
c)	Depression head	=	6.10	m
d)	Friction loss	=	2.50	m
		=	56.65	m
	Say	=	60.00	m
	BHP = (26000x60x1)/(60x60x75x0.6)	=	9.63	HP
	With 60% efficiency **Proposed**		**10.00**	HP

It is proposed to install **2 no. Submersible pumping set** with a discharge of **26000 ltr./hour (435 lpm) driven with 10 HP** electric motor each

IV Underground Tank

Daily requirement for domestic use and other except fire fighting	=	**430.00**	KLD
Capacity of under ground tank 12 hr storage except fire fighting	=	**215.00**	KLD
Say	=	**220.00**	KLD
Fire Tank Capacity as / NBC Code 100 sqrt(P)	=	86.41	KLD
$100\sqrt{6720/1000} = 259.20$ Say	=	**100.00**	KLD
Total		**100**	**KLD**

It is proposed to provide 1 no. under ground tank of capacity **110 KL** as a Raw water tank & 1 no. under ground tank of capacity **110 KL** as a Domestic water tank and **100 KL** capacity for **fire fighting**.

Tank will have 3 compartments, one for fire, one for raw and one for domestic use. The water first enters the fire compartment, then over flows to the raw water use compartment so that the water in the fire compartment shall remain fresh.

It is proposed to provide under ground tank of following capacity

a)	Capacity of Fire tank	**100.00**	KLD
b)	Capacity of Raw tank-01	**110.00**	KLD
c)	Capacity of Domestic tank-01	**110.00**	KLD

V STP Treated water Tank

Daily requirement for flushing, gardening, road washing use		=	274.00 ~~220.22~~	KLD
Capacity of STP treated water tank 12 hr storage	274/2	=	137.00 ~~135.16~~	KLD
	Say	=	~~135.00~~ 140.00	KLD

It is proposed to provide 1 no. STP treated water tank of capacity **135 KL**

VI BOOSTING MACHINERY (Drinking water)

UG. Tank

	Daily requirement for domestic use	=	430.00	KLD
	Assuming 6 hours running 2 pumps (with one standby) Discharge/hour	=	35.83	KL/HR
		=	597.22	LPM
		Or Say	600	LPM
	Head of pump			
i)	Suction lifts	=	4.0	m
ii)	Friction loss in M<main & specials	=	5.0	m
iii)	Clear head	=	27.0	m
		=	36.0	m
	Say	=	40.0	m
	BHP of motor (600*40*1)/(60*75*0.6)	=	8.89	HP
		Or Say	10.0	HP

VII BOOSTING MACHINERY (Flushingwater) + Hoss.

STP

	Daily requirement for flushing use	=	274 ~~231.49~~	KLD
	Assuming 6 hours running 2 pumps (with one standby) Discharge/hour	=	22.83 ~~19.29~~	KL/HR
		=	~~321.51~~ 380.55	LPM
		Or Say	~~330~~ 400	LPM
	Head of pump			
i)	Suction lifts	=	4.0	m
ii)	Friction loss in M<main & specials	=	5.0	m
iii)	Clear head	=	27.0	m
		=	36.0	m
	Say	=	40.0	m

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		4W			5.93		
	BHP of motor (~~336*40*1~~)/(60*75*0.6)			=	~~4.89~~	HP	
				Or Say	~~9.0~~ 7.50	HP	
VIII	**Gen Set**	Nos.	HP				
	Pumps for UG. Tank	2	10.0	=		20	HP
	Flushing Pump	2	~~5.0~~ 7.50	=		~~10~~ 15	HP
	Tubewell	2	10.0	=		20	HP
	Lighting			=		20	HP
						~~70~~ 75	HP
		75					
		or ~~70~~ x 0.746 x 1.50				~~78.5~~ 83.92	KVA
		Say				~~80~~ 85	KVA
5	**Sewage Treatment Plant capacity**						
	Gross domestic + Flushing water requirement/day				661.39	KLD	
	Sewage flow will be 80% of total load				529.11	KLD	
	STP Capacity (Or Say)				**530.00**	**KLD**	

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FINAL ABSTRACT OF COST

	Amount (Lacs.) For 17.9875 Ac.
Sub Work 1- Water Supply	~~130.00~~ ~~+32.50~~ ~~113.34~~ 166.66
Sub Work 2- Sewerage	168.91
Sub Work 3- S.W. Drainage	~~50.98~~ ~~29865~~ ~~234.89~~ 105.71
Sub Work 4- Roads	260.48
Sub Work 5- Street Lighting	~~27.61~~ ~~7.56~~ ~~0.00~~ 57.52
Sub Work 6- Horticulture	7.12
Sub Work 7- Maintenance of services for 10 years including resurfacing of roads after 1st 5 years & II. Phase i.e. 10 years maintenance (as per HSVP norms)	~~37285~~ ~~346.86~~ 339.78
TOTAL	~~1019.14~~ ~~902.71~~ 1106.18
COST / ACRE = ~~1019.14/14.99875 = 56.65~~ Lacs Per acre.	

~~1019.14/14.99875 = 67.97~~

~~68.00 / Acre~~

Cost / Acre = 1106.18 / 14.99375 = 73.78 Lakh / Acre

Executive Engineer
HSVP Division No.V,
Gurugram

Superintending Engineer,
HSVP Circle, Gurugram

Checked subject to comments in forwarding letter No. .....
Dt. 13.10.2021 ...and notes attached with the estimate

Additional Chief Engineer (HQ)
for Chief Engineer-I, HSVP
Panchkula
13.10.2021

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WATER SUPPLY HEAD		Amount (Lacs.)
		~~For 17.9875 Ac~~
Sub Head 1- Head Works		~~43.70~~ 43.90
Sub Head 2- Pumping Machinery		~~42.15~~ 29.00
Sub Head 3- Distribution System (Dom w/s)		~~24.00~~ 21.22
Sub Head 4- Irrigation scheme & Flushing w/s.		~~7.00~~ 14.47
Total		~~84.59~~ 108.59
Add 3% Contingencies & PE Charge		~~2.54~~ 3.26
		~~87.12~~ 111.85
Add 49% Departmental Charges		~~42.69~~ 54.81
	TOTAL	~~129.81~~ 166.66
~~(CC to final abstract of cost)~~	~~SAY~~	~~130.00~~

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Sub Head I

Water Supply Head Works
Rs.(lakhs)

S. No.	Description	Unit	Qty	Rate	Amount
1	Boring and installing 510 mm i/d tubewells with reverse/direct rotary rig complete with pipe strainer to a depth of about 80m. complete.	Nos.	2	1000000.00	20.00
2	Constructing pump chambers as per standard design of PWD PH/HSVP of size 1.50x1.50 m.	Nos.	2	100000.00	2.00
3	Construction of boosting chambers of suitable size along with under ground tank pumping machinery and generating set etc. complete in all respects.				
	Details of boosting station				S.W
i)	construction of boosting chamber	LS			~~3.00~~
ii)	construction of UG Tank	KL.	320	4500.00	14.40
~~iii)~~	~~construction of STP treated water Tank~~	~~KL.~~	~~135~~	~~4500.00~~	~~6.08~~
4	Provision for carriage of material and other unforeseen items	LS		50000.00	0.50
5	Provision for facilities staff for Maintenance.	LS		200000.00	2.00
	(C.O. to abstract of cost of Sub-work No.I)			**TOTAL**	~~47.58~~ 43.90
				~~SAY~~	~~47.08~~

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Sub Work I
Sub Head No. II

S. No.	Description	Unit	Qty	Rate	Water Supply Pumping Machinery Amount (Rs.) (in Lakhs)
1	Providing and installing electricity driven electro or submersible pumping set capable of delivering about 26 KL water per hour against a total head of 60 M complete with motor and other accessories.	Nos.	2	200000.00	4.00
~~2~~	~~Provision for diesel engine genset stand bye arrangements for Tubewells.~~	~~Nos.~~	~~1~~	~~150000.00~~	~~1.50~~
3	Provision for cheap pressure type chlorination plant complete.	Nos.	1	~~50000.00~~ L.S	1.00 ~~0.50~~
4	Provision for making foundations & erection of pumping machinery.	LS		50000.00	0.50
5	Provision for pipes, valves & specials inside the pump chamber.	LS		~~50000.00~~ L.S	2.00 ~~0.50~~
6	Provision for electric services connection including electric fittings for tubewells chambers complete. Including cost of transformer.	LS		~~100000.00~~ L.S	2.00 ~~1.00~~
7	Providing and installing electricity driven pumping set, capable of delivering 600 LPM of water at 40M head for domestic water supply complete in all respects. (10HP) (2 working + 1 standby)	Nos.	3	2,00,000/- ~~150000.00~~	6.00 ~~4.50~~
8	Providing and installing electricity driven pumping set, capable of delivering ~~250~~ 400 LPM of water at 40M head for flushing water supply complete in all respects. ~~(5HP)~~ 7.5 HP (2 working + 1 standby)	Nos.	3	150000/- ~~110000.00~~	4.50 ~~3.30~~
9	Provision of diesel generator set of each for standby arrangements for booster pump complete with gear head arrangements of following capacities ~~80 KVA.~~ 85 KVA @ Rs 10,000/- per KVA	Nos.	1	L.S. ~~200000.00~~	8.50 ~~2.00~~
10	Provision for carriage of materials and other unforeseen items.	LS		50000.00	0.50
	(C.O. to abstract of cost of Sub-work No.I)			**TOTAL** ~~JAY~~	~~19.30~~ 29.00 ~~18.30~~

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Sub Work I — **Water Supply**

Sub Head No. III — **Distribution System/Rising Main**

S. No.	Description	Unit	Qty.	Rate	IN LACS
1	Providing, laying, jointing & testing D.I. K-7 pipes including cost of excavation complete as per ISI marked. (For Domestic, Flushing & Tubewell water supply line)				
i)	100 mm dia	M	1256	1250.00	15.70
2	Providing, fixing and testing butterfly valves including cost of valve chambers complete in all respects.				
i)	100 mm i/d	Nos.	6	12000.00	0.72
3	Providing and fixing 100 mm dia NRV including cost of valve chambers complete in all respects.				
	100 mmm dia	Nos.	2	14000.00	0.28
4	Providing and fixing air valves and scour valves including cost of valve chambers complete in all respects.	Nos.	6	10000.00	0.60
5	Providing and fixing indicating plates for sluice valve, air valve etc.	Nos.	8	1000.00	0.08
8	Provision for carriage of material	LS		50000.00	0.50
9	Provision for cutting the roads and making to its original condition including Making water supply	LS		100000.00	1.00
10	Provision for rising main from HSVP water supply line to UG Tank				
i)	100 mm	M	187	1250.00	2.34
	(C.O. to abstract of cost of Sub-work No.I)			**TOTAL**	**21.22**
				SAY	**21.22**

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Sub Work I
Sub Head No. IV

Water Supply
Irrigation/flushing

S. No.	Description	Unit	Qty	Rate	IN LACS
1	Providing, laying, jointing & testing ~~HDPE~~ HD PE pipe line confirming to IS 4984 including cost of excavation complete in all respect.				
i)	80 mm dia	M	1414	~~500.00~~ 800/-	~~7.070~~ 11.31
ii)	32 mm dia	M	~~2~~ 4	350.00	~~0.007~~ 1.40
iii)	25 mm dia	M	~~7~~ 3	~~250.00~~ 300/-	~~0.018~~ 0.90
2	Providing, fixing and testing butterfly valves including cost of valve chambers complete in all respects.				
i)	50 mm i/d	Nos.	1	~~8500.00~~ 5000/-	~~0.07~~ 0.05
3	Providing & fixing 20 mm PVC RQRC hydrant valve with PVC lid complete in all respect.	Nos.	+ 8	~~1200.00~~ 3500/-	~~0.01~~ 0.28
4	Providing & fixing 20 mm PVC keys for hydrant valve complete in all respect.	Nos.	+ 8	400.00	~~0.00~~ 0.03
5	Provision for carriage of material	LS		50000.00	0.50
	(C.O. to abstract of cost of Sub-work No.I)			**TOTAL**	~~7.68~~ 14,47
				~~SAY~~	~~7.68~~

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Sub Work II

Sewerage Scheme

S. No.	Description	Unit	Qty	Rate	in Lacs
1	Providing, lowering, jointing, cutting DWC pipes and specials into trenches including cost of excavation, bed concrete lot of manholes complete.				
i)	200 mm i/d DWC				
a)	Average depth upto 1.5 m	M	706	1400.00	9.88
b)	Average depth 1.5 m to 4.5 m	M	246	1600.00	3.94
ii)	250 mm i/d DWC				
a)	Average depth 1.5 m to 4.5 m	M	255	2000.00	5.10
iii)	300 mm i/d DWC				
a)	Average depth 1.5 m to 4.5 m	M	126	2200.00	2.77
iv)	400 mm i/d DWC				
a)	Average depth 1.5 m to 4.5 m	M	50	2500.00	1.25
2	Provision for cutting of roads and carriage of materials etc. and other unforeseen charges	LS		100000	1.00
3	Provision for connection with HSVP	LS		100000	1.00
4	Cost of 530 KLD Sewage Treatment Plant including cost of flush tank of 140 KL	KL	530	16000	84.80
5	Provision for HDPE pipe from S.T.P. to HSVP main line				
i)	150 mm dia pipe	M	20	1575.00	0.32
					110.06
	Add 3% contingencies & PE charges				3.30
					113.36
	Add 49% Deptt. Charges				55.55
				TOTAL	168.91
	(C.O. TO FINAL ABSTRACT OF COST SUB WORK - II)			**SAY**	168.91

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Sub Work III — **Storm water drainage**

S. No.	Description	Unit	Qty	Rate	In Lacs
1	Providing, lowering, jointing, cutting RCC NP^3 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	1504	2500.00	37.60
2	Provision for road gully and drain.	LS		250000	2.50
3	Provision for lighting, watching and temporary diversion of traffic.	LS		100000	1.00
4	Provision for cutting of roads and carriage of materials etc. and other unforseen items.	LS		50000	1.50 ~~0.50~~
5	Provision for connection with HSVP.				
	400 mm i/d (Average depth 1.5 m to 4.5 m)	M	30	2600.00	0.78
6	Provision for Storm water over flow connection to HSVP drainage line	Each	~~2~~	~~50000.0~~ 1.5	1.00
7	Provision for Rain Water Harvesting for storm water complete	Each	~~6~~ 10	250000	25.00 ~~15.00~~
					~~50.38~~ 68.88
	Add 3% contingencies				~~1.75~~ 2.07
					~~60.13~~ 70.95
	Add 49% Deptt. Charges				~~29.46~~ 34.76
				TOTAL	~~89.60~~
	(C.O. TO FINAL ABSTRACT OF COST SUB WORK - III)			**SAY**	~~89.00~~ 105.71

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Sub Work IV

S. No.	Description	Unit	Qty	Rate	Road Work In Lacs
1	Provision for levelling and earth filling as per site conditions.	Acre	~~17.0875~~ 14.99375	~~100000.00~~ 150,000/-	~~17.99~~ 22.49
2	Construction of road by- GSB = 200 WMM 250 mm thick wmm layer ~~Pavers Road M-40 Grade 60mm Thick~~ 50 WMM DBM & 25 MM BC Total	Sq. M	8070 ~~6945~~ ~~4760~~	1200/- ~~1325.00~~	96.84 ~~92.82~~ ~~63.07~~
3	Miscellaneous items				
(a)	Providing for Kerbs & Channels ~~for 17.9875 ACRES~~ 1345 X 2 = 2690 MTR 9M wide road ~~952 x 2 = 1904 RM~~	RMT	2690 ~~1904~~	~~2100.00~~ 600/-	~~39.98~~ 16.14
(b)	Provision of foot path of precast conc.60mm thk. Pavers block over 75mm thick cement concrete ~~for 17.9875 acres (9m)~~ 9 wide road ~~952 x 1.2x 2 = 2284.8 SQM~~ (1345 X 1.5) X 2 = 4035 SQM	Sq. M	4035 ~~2284.8~~	750/- ~~1300.00~~	30.26 ~~29.70~~
4	Provision for traffic lighting and guide map /	LS		~~200000.00~~ L.S	~~2.00~~ 1.00
5	Provision for carriage of material LS			~~50000.00~~ L.S	0.50 ~~2.00~~ 1.00
6	Provision for plot indicators	LS		~~50000.00~~ L.S	~~0.50~~ ~~2.00~~ 1.00
7	Provision for demarcation	LS		~~30000.00~~ L.S	~~0.30~~ ~~5.00~~ 1.00
	Add 3% contingencies			~~150.67~~ ~~5.72~~	~~153.04~~ ~~4.59~~ 169,73 5.09
	Add 49% Deptt. Charges			~~156.39~~	~~157.64~~ ~~77.241~~ 174.82
				TOTAL ~~96.24~~	~~234.88~~ 85.66
	(C.O. TO FINAL ABSTRACT OF COST SUB WORK - IV)			SAY ~~292.65~~	~~234.88~~ 260.48

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Sub Work V

Street Lighting

S. No.	Description	Unit	Qty	Rate	In Lacs
1	Providing street lighting on internal roads as per standard specification of HVPNL and CFL complete in all respect Provision made on L.S. cost @ Rs.~~1,00,000.00~~ 2,50,000/- per acre	L.S.	14,99375 ~~17.9875~~	2,50,000/- ~~100000.00~~	37.48 ~~17.99~~
	Add 3% contingencies				1.12 ~~17.99~~ ~~0.54~~ 38.60
	Add 49% Deptt. Charges				~~18.53~~ 18.92 ~~9.08~~
				TOTAL	57.52 ~~27.61~~
	(C.O. TO FINAL ABSTRACT OF COST SUB WORK - V)			~~SAY~~	~~27.61~~

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Sub Work VI — Horticulture

S. No.	Description	Unit	Qty	Rate	Amount In Lacs
1	Development of lawn area				
a)	Trenching the ordinary soil upto depth of 60 cm. including removal and stacking of serviceable material and disposing at the lead of 50m and making upto the tranched area to proper level by filling with earth mixed with manure before and after flooding trenches with water including cost of imported earth and manure.	cum	~~RO~~ 1.14 +.07	~~45.85~~ 1,50,000/- +00	171000/- +07
b)	Rough dressing of trenched area.	sqm	~~4348.556~~	~~0.00~~	~~3913.7004~~ 0.54
c)	Grassing with(doop grass) including watering and maintenance of lawns free from weds and fit for moving in rows 7.5 cm in either direction including for hedges and grill and barred wire fencing around park and green belt (as per HSVP Norms)	Per acre	~~1.07~~	~~50000.00~~	
2	Planting of trees with tree guards on roads at ~~20~~ 12 m intervals (1345÷12)X2 = 224.17				
	No of trees @ ~~6.5m c/c = 277 nos~~ say = 225 Nos		225	1300/-	292500/-
	~~say = 277 nos~~ 1300/-				
	Cost of the tree @ ~~1200/-~~ each	Nos.	~~277~~	~~1200.00~~	~~3.32~~
	TOTAL			~~4.93~~	~~3917.56~~ 463500/-
	Add 3% contingencies			~~0.14~~	~~117.53~~ 13905/-
				~~5.07~~	4035.09 477405/-
	Add 49% Deptt. Charges			~~2.48~~	1977.19 233928/-
				TOTAL ~~7.55~~ lacs	~~6012.28~~ 711333/-
	(C.O. TO FINAL ABSTRACT OF COST SUB WORK - VI)			SAY	~~0.06~~

Say Rs 7.12 Lakh,

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Sub Work VII — Maintenance

S. No.	Description	Unit	Qty	Rate	In Lacs
1	Provision for maintenance charges for water supply, sewerage, storm water drainage, roads, street light, horticulture etc. complete including operation and establishment charges as per HSVP norms after completion and resurfacing of roads after 10 years or 1st phase.	Acre	~~17.0875~~ 14.99375	~~500000.00~~ 750000/-	~~89.04~~ 112.45
~~2~~	~~Providing & laying 80mm. thick shot blasted plain cement concrete interlocking pavers of approved colour of M-30 (approved equivalent) , laying as per design / drawing, laid over 70mm thick sand including cutting edge pavers with cutter to required shape, size and pattern, grouting with neat cement slurry mixed with pigment to match the shade of pavers and all incidentals complete.~~	~~Sq. M~~	~~6945~~	~~1200.00~~	~~83.33~~
(2) 3.	Provision of resurfacing of roads after 5 yrs. of mtc. 50 mm BM & 25 mm P.C.		8070 ~~6945~~	600/- ~~650/-~~	48.42 ~~45.15~~
(3) ~~4~~	Provision for resurfacing and strengthening of road after 10 years of 2nd phase @ ~~800 /sqm~~ @ Rs.~~300/-~~ per sqm. 50 mm BM & 25 mm Premix carpet.	Sq. M	8070 ~~6945~~	~~400/-~~ 750/- ~~760.00~~	~~2778~~ 60.53 ~~52.08~~ ~~246.90~~ 221.40 ~~225.36~~
	Add 3% contingencies				~~6.76~~ ~~7.39~~ 6.64
					~~232.12~~ ~~253.51~~ 228.04
	Add 49% Deptt. Charges				~~113.74~~ ~~124.26~~ 111.74
				TOTAL	~~345.86~~ ~~377.85~~ 339.7
	(C.O. TO FINAL ABSTRACT OF COST SUB WORK - VII).			SAY	~~345.86~~ ~~377.85~~

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011-40503898

PROJECT :- PROPOSED AFFORDABLE RESIDENTIAL PLOTTED COLONY (DDJAY) AT SEC 102A -GURGAON, HARAYANA.

SUBJECT :-DOMESTIC WATER SUPPLY DESIGN

S.N0	Line No		PLOTS (GENERAL)			Water Requirement for Non Residential Plots.				Gross Water Requirement (Load on Line)	Average Demand	Peak Demand @ 2.5 Times	Flow Rate	Length of Pipe	Head Loss Mtr/ Mtr	Total Head Loss	Velocity	Dia of Pipe	Ground LVL at start	Hydraulic LVL at start	Head at start	Ground LVL at End	Hydraulic LVL at End	Head at End
	From	To	Nos.	Population @ 13.5 persons / Plot.	Water Requirement @ 155.25 Ltr/ head / day	Area in Acre	TYPE OF BUILDING	Basis of Water Requirement in LPD	Total Water Requirement in LPD	LPD	KLD	KLD	LPM	MTR.	MTR.	MTR.	M/SEC	MM	MTR.	MTR.	MTR.	MTR.	MTR.	MTR.
				13.5	100.91																			
1	UGT	1	288	3888	392348	2.049	COMMERCIAL	42619	42619	434967	435	1087	755	20	0.0254	0.50	1.373	100	213.81	258.81	45.00	213.81	258.31	44.50
2	1	2	30	405	40870	0.000	PLOTS	0	0	40870	41	102	71	33	0.0003	0.01	0.129	100	213.81	258.31	44.50	213.81	258.30	44.49
3	2	3	31	419	42232	0.000	PLOTS	0	0	42232	42	106	73	48	0.0003	0.02	0.133	100	213.81	258.30	44.49	213.81	258.29	44.48
4	1	5	262	3537	356928	2.049	PLOTS	42619	42619	399547	400	999	694	34	0.0217	0.73	1.261	100	213.81	258.31	44.50	213.81	257.58	43.77
5	5	5A	10	135	13623	0.000	PLOTS	0	0	13623	14	34	24	33	0.0000	0.00	0.043	100	213.81	257.58	43.77	213.81	257.58	43.77
6	5	6	252	3402	343304	2.049	PLOTS	42619	42619	385924	386	965	670	64.8	0.0204	1.32	1.218	100	213.81	257.58	43.77	213.81	256.26	42.45
7	6	7	27	365	36783	0.600	COMMERCIAL	12470	12470	49253	49	123	86	39.6	0.0005	0.02	0.155	100	213.81	256.26	42.45	213.81	256.25	42.44
8	7	8	8	108	10899	0.600	COMMERCIAL	12480	12480	23379	23	58	41	32.7	0.0001	0.00	0.074	100	213.81	256.25	42.44	213.81	256.24	42.43
9	7	9	19	257	25884	0.000	PLOTS	0	0	25884	26	65	45	71	0.0001	0.01	0.082	100	213.81	256.25	42.44	213.81	256.24	42.43
10	6	10	225	3038	306522	1.449	PLOTS	30139	30139	336661	337	842	584	120	0.0158	1.90	1.063	100	213.81	256.26	42.45	213.81	254.37	40.56
11	10	11	18	243	24522	1.499	COMMUNITY LAND	31186	31186	55708	56	139	97	93.9	0.0006	0.05	0.176	100	213.81	254.37	40.56	213.81	254.31	40.50
12	10	12	207	2795	282000	0.000	PLOTS	0	0	282000	282	705	490	132.2	0.0114	1.51	0.890	100	213.81	254.37	40.56	213.81	252.86	39.05
13	12	13	121	1634	164841	0.000	PLOTS	0	0	164841	165	412	286	26.2	0.0042	0.11	0.520	100	213.81	252.86	39.05	213.81	252.75	38.94
14	13	14	107	1445	145768	0.000	PLOTS	0	0	145768	146	364	253	116	0.0034	0.39	0.460	100	213.81	252.75	38.94	213.81	252.36	38.55
15	14	14A	20	270	27246	0.000	PLOTS	0	0	27246	27	68	47	77.6	0.0002	0.01	0.086	100	213.81	252.36	38.55	213.81	252.35	38.54
16	14	15	68	918	92638	0.000	PLOTS	0	0	92638	93	232	161	67.4	0.0014	0.10	0.292	100	213.81	252.36	38.55	213.81	252.26	38.45
17	15	16	26	351	35420	0.000	PLOTS	0	0	35420	35	89	61	100	0.0002	0.02	0.112	100	213.81	252.26	38.45	213.81	252.24	38.43
18	15	17	35	473	47681	0.000	PLOTS	0	0	47681	48	119	83	49	0.0004	0.02	0.150	100	213.81	252.26	38.45	213.81	252.24	38.43
19	17	18	29	392	39507	0.000	PLOTS	0	0	39507	40	99	69	98.7	0.0003	0.03	0.125	100	213.81	252.24	38.43	213.81	252.21	38.40

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ADANI M2K PROJECTS LLP

PROJECT :- PROPOSED AFFORDABLE RESIDENTIAL PLOTTED COLONY (DDJAY) AT SEC 102A -GURGAON, HARAYANA.				
SUBJECT :-DOMESTIC WATER SUPPLY MATERIAL STATEMENT (DI PIPE)				
S.N0	Node No		Length of Pipe	Dia of Pipe
	From	To	MTR.	MM
				DI PIPE
1	UGT	1	20	100
2	1	2	33	100
3	2	3	48	100
4	1	5	34	100
5	5	5A	33	100
6	5	6	64.8	100
7	6	7	39.6	100
8	7	8	32.7	100
9	7	9	71	100
10	6	10	120	100
11	10	11	93.9	100
12	10	12	132.2	100
13	12	13	26.2	100
14	13	14	116	100
15	14	14A	77.6	100
16	14	15	67.4	100
17	15	16	100	100
18	15	17	49	100
19	17	18	98.7	100
Total Length of pipe 100 mm dia			1256	

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011-40583898

PROJECT :- PROPOSED AFFORDABLE RESIDENTIAL PLOTTED COLONY (DDJAY) AT SEC 102A -GURGAON, HARAYANA.

SUBJECT :-FLUSHING WATER SUPPLY DESIGN

S.NO	Line No		PLOTS (GENERAL)			Water Requirement for Non Residential Plots.				Gross Water Requirement (Load on Line)	Average Demand	Peak Demand @ 2.5 Times	Flow Rate	Length of Pipe	Head Loss Mtr/ Mtr	Total Head Loss	Dia of Pipe	Ground LVL at start	Hydraulic LVL at start	Head at start	Ground LVL at End	Hydraulic LVL at End	Head at End
	From	To	Nos.	Population @ 13.5 persons / Plot.	Water Requirement @ 155.25 Ltr/ head / day	Area in Acre	TYPE OF BUILDING	Basis of Water Requirement in LPD	Total Water Requirement in LPD	LPD	KLD	KLD	LPM	MTR.	MTR.	MTR.	MM	MTR.	MTR.	MTR.	MTR.	MTR.	MTR.
				13.5	54.34																		
1	STP	1	288	3888	211264	2.049	COMMERCIAL COMMUNITY LAND	22949	22949	234213	234	586	407	40	0.0239	0.95	80	213.81	258.81	45.00	213.81	257.86	44.05
2	1	2	111	1498.5	81425	0.000	PLOTS	0	0	81425	81	204	141	28	0.0034	0.09	80	213.81	257.86	44.05	213.81	257.77	43.96
3	2	3	103	1391	75556	0.000	PLOTS	0	0	75556	76	189	131	117	0.0029	0.34	80	213.81	257.77	43.96	213.81	257.42	43.61
4	3	4	13	176	9536	0.000	PLOTS	0	0	9536	10	24	17	78	0.0001	0.00	80	213.81	257.42	43.61	213.81	257.42	43.61
5	3	5	69	932	50615	0.000	PLOTS	0	0	50615	51	127	88	66	0.0014	0.09	80	213.81	257.86	44.05	213.81	257.77	43.96
6	5	6	26	351	19072	0.000	PLOTS	0	0	19072	19	48	33	99	0.0002	0.02	80	213.81	257.77	43.96	213.81	257.74	43.93
7	5	7	36	486	26408	0.000	PLOTS	0	0	26408	26	66	46	49	0.0004	0.02	80	213.81	257.77	43.96	213.81	257.75	43.94
8	7	8	29	392	21273	0.000	PLOTS	0	0	21273	21	53	37	98.1	0.0003	0.03	80	213.81	257.75	43.94	213.81	257.72	43.91
9	1	9	177	2390	129839	2.049	PLOTS	22949	22949	152788	153	382	265	131.4	0.0109	1.43	80	213.81	257.72	43.91	213.81	256.29	42.48
10	9	10	26	351	19072	0.000	PLOTS	0	0	19072	19	48	33	94.7	0.0002	0.02	80	213.81	257.72	43.91	213.81	257.70	43.89
11	9	11	119	1607	87293	0.600	COMMERCIAL	6720	6720	94013	94	235	163	118.7	0.0044	0.52	80	213.81	257.75	43.94	213.81	257.22	43.41
12	11	12	27	365	19806	0.600	COMMERCIAL	6720	6720	26526	27	66	46	38.2	0.0004	0.02	80	213.81	257.22	43.41	213.81	257.21	43.40
13	12	13	20	270	14671	0.600	COMMERCIAL	6720	6720	21391	21	53	37	70.3	0.0003	0.02	80	213.81	257.22	43.41	213.81	257.20	43.39
14	12	14	6	81	4401	0.600	COMMERCIAL	6720	6720	11121	11	28	19	33.4	0.0001	0.00	80	213.81	257.20	43.39	213.81	257.20	43.39
15	11	15	62	837	45480	0.000	PLOTS	0	0	45480	45	114	79	64.7	0.0012	0.07	80	213.81	257.20	43.39	213.81	257.13	43.32
16	15	16	66	891	48415	0.000	PLOTS	0	0	48415	48	121	84	66.9	0.0013	0.09	80	213.81	257.13	43.32	213.81	257.04	43.23
17	16	17	23	311	16872	0.000	PLOTS	0	0	16872	17	42	29	48.3	0.0002	0.01	80	213.81	257.04	43.23	213.81	257.03	43.22

ADANI M2K PROJECTS

Dehora Associates Pvt. Ltd. MEP Consultants F623A, GROUND FLOOR, LADO SARAI, NEW DELHI 110030 011-40583699

PROJECT :- PROPOSED AFFORDABLE RESIDENTIAL PLOTTED COLONY (DDJAY) AT SEC 102A -GURGAON, HARAYANA.				
SUBJECT :-FLUSHING WATER SUPPLY MATERIAL STATEMENT (UPVC PIPE)				
S.N0	Node No		Length of Pipe	Dia of Pipe
	From	To	MTR.	MM
				UPVC PIPE
1	STP	1	40	80
2	1	2	28	80
3	2	3	117	80
4	3	4	78	80
5	3	5	66	80
6	5	6	99	80
7	5	7	49	80
8	7	8	98.1	80
9	1	9	131.4	80
10	9	10	94.7	80
11	9	11	118.7	80
12	11	12	38.2	80
13	12	13	70.3	80
14	12	14	33.4	80
15	11	15	64.7	80
16	15	16	66.9	80
17	16	17	48.3	80
Total Length of pipe 80 mm dia			~~1240~~ 1241.70	

Say = 1242 mtr

ADLAKHA M2K PROJECTS LLP GURGAON

Behera Associates Pvt Ltd
MEP Consultant
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PROJECT :- PROPOSED AFFORDABLE RESIDENTIAL PLOTTED COLONY (DDJAY) AT SEC 102A -GURGAON, HARAYANA.

SUBJECT :- SEWER DESIGN

Sl No	Node No		Length In M	DESCRIPTION	Total Population	Water Requirment In Lpd			Sewage flow = Water requirment x 80%	Infiltration Rate @ 10% as per CPHOO Manual	Total Flow	Peak Flow @ 3 times of av flow		Size of sewer in mm	Gradiant of pipe 1:	Fall in line.	Ground level		Invert Level		Depth		Av Depth	No of Manhole	910mm dia up to depth 1.67	1220mm dia up to depth 2.3m	1520mm dia up to depth 4.2
	From	To	IN M	NO OF PLOTS		SELF	BRANCH	TOTAL			LPD	MLD	LPS			In m	at Start	at End	at Start	at End	at Start	at End					
1	1	3	50.8	6	81	12575.25	0.00	12575.3	10060.20	1006.02	11066.22	0.0332	0.38	200	145	0.35	213.81	213.81	213.06	212.71	0.75	1.10	0.93	4	4	0	0
2	2	3	11.9	3	40.5	6287.63	0.00	6287.6	5030.10	503.01	5533.11	0.0166	0.19	200	145	0.08	213.81	213.81	213.06	212.98	0.75	0.83	0.79	1	0	0	0
3	3	5	43.2	5	67.5	10479.38	18862.88	29342.3	23473.80	2347.38	25821.18	0.0776	0.90	200	145	0.30	213.81	213.81	212.71	212.41	1.10	1.40	1.25	3	3	0	0
4	4	5	13.4	4	54	8383.50	0.00	8383.5	6706.80	670.68	7377.48	0.0221	0.26	200	145	0.09	213.81	213.81	213.06	212.97	0.75	0.84	0.80	1	0	0	0
5	5	7	68.3	8	108	16767.00	37725.75	54492.8	43594.20	4359.42	47953.62	0.1439	1.67	200	145	0.47	213.81	213.81	212.41	211.94	1.40	1.87	1.63	6	6	0	0
6	6	7	40.4	9	121.5	18862.88	0.00	18862.9	15090.30	1509.03	16599.33	0.0498	0.58	200	145	0.28	213.81	213.81	213.06	212.78	0.75	1.03	0.89	3	0	0	0
7	7	11	59.0	15	202.5	31438.13	73355.63	104793.8	83835.00	8383.50	92218.50	0.2767	3.20	200	145	0.41	213.81	213.81	211.94	211.53	1.87	2.28	2.07	5	0	5	0
8	8	10	75.6	20	270	61102.48	0.00	61102.5	48881.98	4888.20	53770.18	0.1613	1.87	200	145	0.52	213.81	213.81	213.06	212.64	0.75	1.27	1.01	6	6	0	0
9	9	10	18.9	7	94.5	14671.13	0.00	14671.1	11736.90	1173.69	12910.59	0.0387	0.45	200	145	0.13	213.81	213.81	212.91	212.78	0.90	1.03	0.97	2	2	0	0
10	10	11	41.1	0	0	0.00	75773.61	75773.6	60618.88	6061.89	66680.77	0.2000	2.32	200	145	0.28	213.81	213.81	212.64	212.26	1.27	1.65	1.41	3	3	0	0
11	11	13	121.2	32	432	67068.00	180567.36	247635.4	198108.28	19810.83	217919.11	0.6538	7.57	250	190	0.64	213.81	213.81	211.53	210.90	2.28	2.91	2.60	9	0	0	9
12	12	13	87.6	26	351	91980.89	0.00	91980.9	73584.71	7358.47	80943.18	0.2428	2.81	200	145	0.60	213.81	213.81	212.91	212.31	0.90	1.50	1.20	7	7	0	0
13	13	22	126.0	31	418.5	64972.13	339616.25	404588.4	323670.70	32367.07	356037.77	1.0681	12.36	300	250	0.60	213.81	213.81	210.90	210.39	2.91	3.42	3.17	11	0	0	11
14	14	16	90.0	26	351	54492.75	0.00	54492.8	43594.20	4359.42	47953.62	0.1439	1.67	200	145	0.62	213.81	213.81	213.06	212.44	0.75	1.37	1.06	6	6	0	0
15	15	16	23.4	6	81	12575.25	0.00	12575.3	10060.20	1006.02	11066.22	0.0332	0.38	200	145	0.16	213.81	213.81	213.06	212.90	0.75	0.91	0.83	2	0	0	0
16	16	18	50.5	7	94.5	14671.13	67068.00	81739.1	65391.30	6539.13	71930.43	0.2158	2.50	200	145	0.35	213.81	213.81	212.44	212.09	1.37	1.72	1.54	5	5	0	0
17	17	18	89.7	26	351	54492.75	0.00	54492.8	43594.20	4359.42	47953.62	0.1439	1.67	200	145	0.62	213.81	213.81	213.06	212.44	0.75	1.37	1.06	7	7	0	0
18	18	19	56.1	9	121.5	18862.88	136231.88	155094.8	124075.80	12407.58	136483.38	0.4095	4.74	200	145	0.39	213.81	213.81	212.09	211.70	1.72	2.11	1.91	5	0	5	0
19	19A	19	74.0	20	270	41917.50	0.00	41917.5	33534.00	3353.40	36887.40	0.1107	1.28	200	145	0.51	213.81	213.81	213.06	212.65	0.75	1.26	1.01	5	5	0	0
20	19	20	11.7	0	0	0.00	197012.25	197012.3	157609.80	15760.98	173370.78	0.5201	6.02	200	145	0.08	213.81	213.81	211.70	211.62	2.11	2.19	2.15	1	0	1	0
21	20	21	109.0	12	162	25150.50	197012.25	222162.8	177730.20	17773.02	195503.22	0.5865	6.79	250	190	0.57	213.81	213.81	211.62	211.05	2.19	2.76	2.47	11	0	0	11
22	21A	21	45.7	5	67.5	10479.38	0.00	10479.4	8383.50	838.35	9221.85	0.0277	0.32	200	145	0.32	213.81	213.81	213.06	212.74	0.75	1.07	0.91	3	3	0	0
23	21	22	25.0	0	0	0.00	232642.13	232642.1	186113.70	18611.37	204725.07	0.6142	7.11	250	190	0.13	213.81	213.81	211.05	210.92	2.76	2.89	2.83	2	0	0	2
24	22	STP	50.0	11	148.5	23054.63	537230.50	560285.1	528228.10	52822.81	581050.91	1.7432	20.18	400	350	0.14	213.81	213.81	210.39	210.25	3.42	3.56	3.49	5	0	0	5
				268.0000																							

PROJECT :- PROPOSED AFFORDABLE RESIDENTIAL PLOTTED COLONY (DDJAY) AT SEC 102A -GURGAON, HARAYANA.								
SUBJECT :- SEWER MATERIAL STATEMENT HDPE DWC PIPE								
Sl No	Node No		Length in M	Dia of Pipe in mm	Length of line in mtr			
	From	To	IN M		200 mm	250 mm	300 mm	400 mm
				HDPE DWC PIPE	HDPE DWC PIPE			
1	1	3	50.8	200	50.8			
2	2	3	11.9	200	11.9			
3	3	5	43.2	200	43.2			
4	4	5	13.4	200	13.4			
5	5	7	68.3	200	68.3			
6	6	7	40.4	200	40.4			
7	7	11	59.0	200	59.0			
8	8	10	75.5	200	75.5			
9	9	10	18.9	200	18.9			
10	10	11	41.1	200	41.1			
11	11	13	121.2	250		121.2		
12	12	13	87.6	200	87.6			
13	13	22	126.0	300			126.0	
14	14	16	90.0	200	90.0			
15	15	16	23.4	200	23.4			
16	16	18	50.5	200	50.5			
17	17	18	89.7	200	89.7			
18	18	19	56.1	200	56.1			
19	19A	19	74.0	200	74.0			
20	19	20	11.7	200	11.7			
21	20	21	109.0	250		109.0		
22	21A	21	45.7	200	45.7			
23	21	22	25.0	250		25.0		
24	22	STP	50.0	400				50.0
Total Length					951	255	126	50

ADANI M2K PROJECTS LLP
GURGAON

Kohora Associates Pvt Ltd
MEP
Consultant
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011-40583958

PROJECT :- PROPOSED AFFORDABLE RESIDENTIAL PLOTTED COLONY (DDJAY) AT SEC 102A -GURGAON, HARAYANA.

TITLE :- STORM WATER DRAINAGE - HYDRAULIC DESIGN CHART.

S.No	Line No.		Length in mtr.	self area in sqmtr.	Self Area (Hec)	previous area in hec.	Total Area (Hec)	Rain Fall mm/hr	Discharge @ 10CIA	Pipe dia (mm)	Slope (mm) 1 in	Velocity m/sec.	Cap of pipe in lps.	Fall in line mtr.	Ground level at Start	Invert Level at Start	Ground level at End	Invert Level at End	Manhole Depth in mtr Depth at Start	Depth at End	Average Depth	No of Manhole	910mm dia up to depth 1.67	1220mm dia up to depth 2.3m	1520mm dia up to depth 4.2
1	1	2	43.00	1022.69	0.102	0.000	0.102	6.25	1.24	400	450	0.781	85.11	0.10	213.810	213.060	213.810	212.964	0.75	0.85	0.80	3	0	0	0
2	2A	2	20.00	448.62	0.045	0.000	0.045	6.25	0.55	400	450	0.781	85.11	0.04	213.810	213.060	213.810	213.016	0.75	0.79	0.77	3	0	0	0
3	2	4	45.00	2042.00	0.204	0.147	0.351	6.25	4.27	400	450	0.781	85.11	0.10	213.810	212.964	213.810	212.864	0.85	0.95	0.90	3	0	0	0
4	3	4	22.00	731.46	0.073	0.000	0.073	6.25	0.89	400	450	0.781	85.11	0.05	213.810	213.060	213.810	213.011	0.75	0.80	0.77	2	0	0	0
5	4	6	42.40	1312.46	0.131	0.424	0.556	6.25	6.75	400	450	0.781	85.11	0.09	213.810	212.864	213.810	212.770	0.95	1.04	0.99	4	4	0	0
6	5	6	50.00	1269.00	0.127	0.000	0.127	6.25	1.54	400	450	0.781	85.11	0.11	213.810	213.060	213.810	212.949	0.75	0.86	0.81	4	0	0	0
7	6	8	26.00	350.00	0.035	0.683	0.718	6.25	8.72	400	450	0.781	85.11	0.06	213.810	212.770	213.810	212.712	1.04	1.10	1.07	2	2	0	0
8	7	8	35.00	1460.95	0.146	0.000	0.146	6.25	1.78	400	450	0.781	85.11	0.08	213.810	213.060	213.810	212.982	0.75	0.83	0.79	3	0	0	0
9	8	11	60.90	1907.15	0.191	0.864	1.054	6.25	12.81	400	450	0.781	85.11	0.14	213.810	212.712	213.810	212.577	1.10	1.23	1.17	5	5	0	0
10	9	10	94.00	9647.36	0.965	0.000	0.965	6.25	11.72	400	450	0.781	85.11	0.21	213.810	213.060	213.810	212.851	0.75	0.96	0.85	5	0	0	0
11	10	11	121.00	4675.19	0.468	0.965	1.432	6.25	17.41	400	450	0.781	85.11	0.27	213.810	212.851	213.810	212.582	0.96	1.23	1.09	2	2	0	0
12	11	13	38.00	330.00	0.033	2.487	2.520	6.25	30.62	400	450	0.781	85.11	0.08	213.810	212.577	213.810	212.493	1.23	1.32	1.28	3	3	0	0
13	12	13	68.70	2691.30	0.269	0.000	0.269	6.25	3.27	400	450	0.781	85.11	0.15	213.810	213.060	213.810	212.907	0.75	0.90	0.83	9	0	0	0
14	13	14	39.00	2668.00	0.267	2.789	3.056	6.25	37.13	400	450	0.781	85.11	0.09	213.810	212.493	213.810	212.406	1.32	1.40	1.36	7	7	0	0
15	14	OUT	24.00	909.00	0.091	3.056	3.147	6.25	38.24	400	450	0.781	85.11	0.05	213.810	212.406	213.810	212.353	1.40	1.46	1.43	10	10	0	0
16	15	17	116.40	4616.00	0.462	0.000	0.462	6.25	5.61	400	450	0.781	85.11	0.26	213.810	213.060	213.810	212.801	0.75	1.01	0.88	2	0	0	0
17	16	17	24.70	1885.00	0.189	0.000	0.189	6.25	2.29	400	450	0.781	85.11	0.05	213.810	213.060	213.810	213.005	0.75	0.80	0.78	3	0	0	0
18	17	18	35.00	1278.00	0.128	0.650	0.778	6.25	9.45	400	450	0.781	85.11	0.08	213.810	212.801	213.810	212.724	1.01	1.09	1.05	4	4	0	0
19	18A1	18	51.70	1767.00	0.177	0.000	0.177	6.25	2.15	400	450	0.781	85.11	0.11	213.810	213.060	213.810	212.945	0.75	0.86	0.81	9	0	0	0
20	18	19	112.00	2173.00	0.217	0.955	1.172	6.25	14.24	400	450	0.781	85.11	0.25	213.810	212.724	213.810	212.475	1.09	1.34	1.21	6	6	0	0
21	19A	19	86.34	4739.00	0.474	0.000	0.474	6.25	5.76	400	450	0.781	85.11	0.19	213.810	213.060	213.810	212.868	0.75	0.94	0.85	1	0	0	0
22	19	25.00	15.50	180.00	0.018	1.646	1.664	6.25	20.22	400	450	0.781	85.11	0.03	213.810	212.475	213.810	212.440	1.34	1.37	1.35	7	7	0	0
23	20	22	100.50	4919.00	0.492	0.000	0.492	6.25	5.98	400	450	0.781	85.11	0.22	213.810	213.060	213.810	212.837	0.75	0.97	0.86	1	0	0	0
24	21	22.00	14.70	485.00	0.049	0.000	0.049	6.25	0.59	400	450	0.781	85.11	0.03	213.810	213.060	213.810	213.027	0.75	0.78	0.77	4	0	0	0
25	22	24	50.40	1102.00	0.110	0.540	0.651	6.25	7.91	400	450	0.781	85.11	0.11	213.810	212.837	213.810	212.725	0.97	1.09	1.03	7	7	0	0
26	23	24	97.00	4944.00	0.494	0.000	0.494	6.25	6.01	400	450	0.781	85.11	0.22	213.810	213.060	213.810	212.844	0.75	0.97	0.86	5	0	0	0
27	24	25	70.00	1003.00	0.100	1.145	1.245	6.25	15.13	400	450	0.781	85.11	0.16	213.810	212.725	213.810	212.569	1.09	1.24	1.16	5	5	0	0
[illegible]	[illegible]	OUT	1.00	0.00	0.000	2.909	2.909	6.25	35.35	400	450	0.781	85.11	0.00	213.810	212.440	213.810	212.438	1.37	1.37	1.37	1	1	0	0

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PROJECT :- PROPOSED AFFORDABLE RESIDENTIAL PLOTTED COLONY (DDJAY) AT SEC 102A - GURGAON, HARAYANA.				
TITLE :- STORM WATER DRAINAGE - MATERIAL STATEMENT (RCC PIPE)				
S.No	Node No.		LengtH in mtr.	Pipe dia (mm)
				RCC PIPE
1	1	2	43.00	400
2	2A	2	20.00	400
3	2	4	45.00	400
4	3	4	22.00	400
5	4	6	42.40	400
6	5	6	50.00	400
7	6	8	26.00	400
8	7	8	35.00	400
9	8	11	60.90	400
10	9	10	94.00	400
11	10	11	121.00	400
12	11	13	38.00	400
13	12	13	68.70	400
14	13	14	39.00	400
15	14	OUT	24.00	400
16	15	17	116.40	400
17	16	17	24.70	400
18	17	18	35.00	400
19	18A1	18	51.70	400
20	18	19	112.00	400
21	19A	19	86.34	400
22	19	25.00	15.50	400
23	20	22	100.50	400
24	21	22.00	14.70	400
25	22	24	50.40	400
26	23	24	97.00	400
27	24	25	70.00	400
27	25	OUT	1.00	400
	Total Length of pipe 400 mm dia		1504	

NIM2K PROJECTS LLP GURGAON

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PROJECT :- PROPOSED AFFORDABLE RESIDENTIAL PLOTTED COLONY (DDJAY) AT SEC 102A -GURGAON, HARAYANA.				
ROAD LEGEND				
S. No.	NAME	NODE	LENGTH (M)	WIDTH (M)
1	ROAD R1	L1-L2	21.716	9
2	ROAD R2	L3-L4	23.824	9
3	ROAD R3	L5-L6	98.2	9
4	ROAD R4	L7-L8	120.7	9
5	ROAD R5	L9-L10	100.7	9
6	ROAD R6	L5-L11	100.7	9
7	ROAD R7	L12-L13	77.167	9
8	ROAD R8	L14-L15	345.874	9
9	ROAD R9	L16-L17	38.998	9
10	ROAD R10	L18-L19	102.448	9
11	ROAD R11	L20-L21	66.352	9
12	ROAD R12	L22-L23	80.413	9
13	ROAD R13	L24-L22	12.732	9
14	ROAD R14	L25-L26	90.351	9
			1280.175	

say 1281 mtr

Add 5% for curves = 64 mtr

1345 mtr

Proposed metalled width = 6 mtr.

→ Metalled Area = 1345×6 = 8070 sqm.

→ K & C = 1345 × 2 = 2690 mtr
(Kerb & Channel)

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→ Footpath = (1345 × 1.50) × 2 = 4035 sqm

Behera Associates Pvt Ltd
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