PROPOSED PLOTTED COMMERCIAL COLONY ON LAND MEASURING 3.8375 ACRES FALLING IN SITUATED IN THE REVENUE ESTATE OF VILLAGE DHORKA, SECTOR-95 DIST-GURUGRAM, HARYANA.

DEVELOPED BY M/S GLS INFRA PROJECTS PVT LTD.

ESTIMATE FOR PROVIDING WATER SUPPLY.SEWERAGE. STORM WATER DRAINAGE, ROADS,STREET LIGHTING AND HORTICULTURE IN SCO PLOTTING BY METL FOR COMMERCIAL SITE 3.8375 ACRE SITUATED IN THE REVENUE ESTATE OF VILLAGE DHORKA, SECTOR-95 DIST-GURUGRAM, HARYANA.

Gurugram is a town and municipal corporation in the Gurugram district of the state of Haryana, India. It is a part of the National Capital Region (NCR) of Delhi. Its proximity to the burgeoning city of Gurgaon has in recent years caused its character and demographics to change dramatically. It has many factories, offices, hotels, IT parks and educational institutes. There are several sightseeing spots around the area, some overlapping with Gurgaon. Sohna is 41 kilometres from Indira Gandhi International Airport and is located on National Highway 48, making it well connected with Delhi, Gurgaon, Rewari, Dharuhera, Jaipur, Ahmedabad and Mumbai.

PROJECT REPORT/ESTIMATE FOR PROVIDING WATER SUPPLY, SEWERAGE, STROM WATER DRAINAGE, ROADS, STREET LIGHTING AND HORTICULURE IN SCO PLOTTING BY METL FOR COMMERCIAL SITE 3.8375 ACRE SITUATED IN THE REVENUE ESTATE OF VILLAGE DHORKA, SECTOR-95 DIST-GURUGRAM, HARYANA.

The Haryana Government has prepared a master plan for development of Residential/Industrial/ Commercial urban estate Gurugram. Project is developed by GLS Infra Projcts Pvt Ltd. They have decided to develop the area in this master plan as a plotted commercial colony and has named this part as Proposed SCO Colony for an area measuring 3.8375 Acres in the Revenue Estate of Village Dhorka, Sector-95, Dist-Gurugram, Haryana.

Water Supply

1 **Source**

The source of water supply in this area is from **HSVP** how ever tubewells shall be proposed for Emergency if permission will get from CGWA. At present water supply is from HSVP municipal supply and tanker supply is sweet and fit for human consumption. However in borewell water is available at reasonable depth. The average yield of tubewell with 40-45 ft strainers will be about 15,000 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 after the permission from CGWA in tune with growth of demand. The ultimate requirement of tubewells includes provisions of 10% stand by. Ultimately, water shall be supplied to the Project by **HARYANA SHAHARI VIKAS PRADHIKARAN, GURUGRAM, HARYANA**.

2 **Design**

The scheme has been designed for approved population of **1977 persons in 3.8375 acres**. The rate of water supply per head per day has been taken as 45 litres as per NBC 2016 / HSVP norms. in addition to above necessary provision of water for community area, coomercial area, parks etc. have been taken into account for calculating the maximum quantity of water requirement.

3 **Storage & Pumping**

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.

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4 Under Ground Storage

Underground storage tank provision has been made for **200KL** capacity. in 4 compartments, which caters for the raw, domestic as well as for firefighting requirement. The water from fire compartment shall overflow to the raw water compartment so that the water in the fire compartment always remain fresh.

5 Boosting Station

A boosting station having monoblock centrifugal pump set is planned near under ground reservior to pump water from domestic/ treated under ground water tank to over head water tank provided at individual plot terrace.

6 Distribution System

The distribution system for this development has been designed to supply @ 45 litre per head her day @ 2.5 times the average rate of flow on 'Hazen william' formula with C-140. Necessary provision for laying D.I. pipe K-7 conforming to relevent IS standards along with valves and specials has been made in the project. The minimum terminal head at any point will be more than 30.00 meters so thet 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 for domestic water supply.

7 Rising Mains

Rising mains from HSVP water main or sector road to water works have also been designed and provision for 100 mm dia 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 respsctive plans.

The sewer lines have been designed for 3 times average DWF in relation to the water supply demand assuming that 80% of water supply shall find its way into the propoesd sewer. DWC HDPE SN8 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 HDPE SN8 pipes and manholes etc. has been made in this estimate.

Size/ Shape of Manholes

As per IS 4111:1986 "Circular type of manholes are much stronger than rectangular and arch type manholes thus these type of manholes are preferred over rectangular as well as arch type manholes. However both rectangular and circular type of manholes are propsed to be provided. The brick masonary rectangular manhole is proposed to be provided for depth upto 0.9m.

The brick masonry/ concrete circular manholes are proposed to be provided for all depth exceeding 0.9 m upwards. Circular manholes are strsaight down in lower portion and slanting on top portion so as to narrow down the top opening equal to internal dia of manhole cover.

Depending on the depth of manhole, brick circular manhole of dia 910, 1220, 1520, 1820 mm dia are proposed to be provided.

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9 Storm Water Drainage

The storm water is designed to carry 6.25 mm rainfall per hour or 0.123 cusecs per acre as discharge. Also suitable provisions are contemplated in our scheme to ensure better recarging of underground water table in the area. Underground R.C.C. pipe drain with minimum 400 mm dia are proposed to be provided in this area with circular manhole.

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

10 Rain Water Harvesting

The main emphasis on recharging the underground aquifers and safe disposal of storm water with flooding the site has been laid in designing/ planning of storm water drainage system. Conventional type rain water harvesting are proposed to be provided.

11 Roads

The roads are proposed to be provided in the plotted development in such a way that main 12 m wide & 24 m sector road is opening to the Plot. Detailed calculation of the various item of works have been made on the basis of the detail design of the roads as approved by Chief Engineer HSVP, Gurugram.

12 Street Lighting

Street lighting system has been designed to provide illumination of 15 to 20 lux on roads. Street lights are provided on 6 m high steel tubular poles are located. Luminaries with 65 watts LED lights are proposed to be provided for achieving the desired illumination.

13 Horticulture

Provision of road side plantation of trees with tree guards has been made for all roads.The parks shall be developed by providing lawns & ornamental trees with tree guards.

14 Specifications :

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

15 Rates

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

16 Cost

The total cost of development in this project including various P.H. and B & R services works out to **Rs. ~~604.80~~ 651.15 Lacs** which includes 3% contingency and PE charges and 49% departmental charges also.

The cost per gross acre for this phase works out to App. **Rs. ~~157.60~~ 169.68 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.

	DESIGN CALCULATION	**For 3.8375 Acres**	Unit
	Daily water requirement	Acres	
	Total No. of Commercial Plots	53	Nos
1	Ground Floor area in sqm	5435.403	sqm

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	Person per sqm		3	Sqm/Person	
	Total No. Person Ground Floor		1812	Persons	
	Permanent Population@10%		181	Persons	
	Floating Popultion @ 90%		1631	Persons	
	Total daily Water requirement for Permanent (45 LPCD)	@	45	LPCD	
			Domestic @25 LPCD	Flushing @ 20 LPCD	
			4525	3620	LPD
	Total daily Water requirement for Floating (15 LPCD)	@	15	LPCD	
			Domestic @5 LPCD	Flushing @ 10 LPCD	
			8155.00	16310.00	LPD
2	1st to 3rd Floor area in sqm		17859.182	sqm	
	Person per sqm		10	Sqm/Person	
	Total No. Person upper floor		1786	Persons	
	Visitors 10%		179	Persons	
	Maintenace Staff		10	Persons	
	Total daily Water requirement for Staff (45 LPCD)	@	45	LPCD	
			Domestic @25 LPCD	Flushing @ 20 LPCD	
			44650 ~~44900~~	35920	LPD
	Total daily Water requirement for Visitors (15 LPCD)	@	15	LPCD	
			Domestic @5 LPCD	Flushing @ 10 LPCD	
			895	1790	LPD
3	Filter Backwash		1500		LPD
4	Horticulture assume area 15% of the Plot @ 6 LPD/SQM			13977	LPD
5	For Road Wash (LS)			5000	LPD
I	Total daily requirement				
a)	For (1+2+3)		59725 ~~59975~~	57440 ~~57640~~	LPD
b)	Under Road+ Horticulture (4+5)		0	18977	LPD
	Total Daily Requirement		59725 ~~59975~~	76417 ~~76617~~	LPD

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		Or Say	60 KL	77 KL	KLD

II Tubewell

Assuming working hours of tubewells		**5**	hours
Assuming discharge/hour of each tubewell		**15**	KL/hours
Total domestic water requirment		**60**	**KLD**
No. of tubewells required		0.80	Nos.
Add 10% standby		0.08	
	Total	0.88	Nos.
	Proposed	**1.0**	Nos.

So It is proposed 1 nos of tubewell if permission will get from from CGWA. The provision of 1 no of tubewell has been made in the estimate because the water demand for flushing, 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 HSVP.

III Pumping machinery for tubewell

a)	Gross working load		=	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 = (15x1000x60)/(60x60x75x0.6)		=	5.56	HP
	With 60% efficiency	**Proposed**		**7.50**	HP

It is proposed to install **1 no. Submersible pumping set** with a discharge of **15000 ltr./hour (250 lpm) driven with 7.5 HP** electric motor.

IV Underground Tank

Daily requirement for domestic use and other except		=	~~59.98~~ 59.725	KLD
Capacity of under ground tank 24 hr storage except fire fighting @ 100% storage requirement		=	~~59.98~~ 59.725	KLD
	Say	=	**60.00**	KLD
Total Permanent Population in plots		=	**1977**	Person
Fire Tank Capacity as 100 x [sqrt(1977) /1000]		=	140.61	KLD
	Say	=	**140.00**	KLD
	Total		**200.00**	**KLD**

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It is proposed to provide 1 no. under ground tank of capacity **200 KL** which also includes **140 KL** capacity for **fire fighting**.
Tank will have four compartments, Two for fire, one for raw and one for domestic use. The water first enters the fire compartment, then over flows to the domestic

It is proposed to provide under ground tank of following capacity

a)	Capacity of Fire tank-1		**70.00**	KLD
b)	Capacity of Fire tank-2		**70.00**	KLD
c)	Capacity of Raw tank		**30.00**	KLD
d)	Capacity of Domestic tank		**30.00**	KLD

V BOOSTING MACHINERY (Drinking water)
UG. Tank

a) Filter Feed Pump

	Daily requirement for domestic use	=	59.98	KLD
	Assuming 8 hours running 1 pumps (with one standby)			
	Discharge/hour	=	7.50	KL/HR
			124.95	LPM
		Or Say	130.00	LPM
	Head of pump			
i)	Suction lifts	=	0.0	m
ii)	Friction loss in M<main & specials	=	0.0	m
iii)	Clear head	=	25.0	m
		=	25.0	m
	Say	=	25.0	m
	BHP of motor (130*25)/(60*75*0.6)	=	1.20	HP
		Or Say	2.5	HP

b) Domestic Water Transfer Pump

			59.725	
	Daily requirement for domestic use	=	~~59.98~~	KLD
	Assuming 6 hours running 1 pumps (with one standby)			
	Discharge/hour	=	10.00	KL/HR
			166.60	LPM
		Or Say	170.00	LPM
	Head of pump			
i)	Suction lifts	=	5.0	m
ii)	Friction loss in M<main & specials	=	5.0	m
iii)	Clear head	=	15.0	m
iv)	Residual head	=	15.0	m

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				=	40.0	m	
	Say			=	40.0	m	
	BHP of motor (170*40)/(60*75*0.6)			=	2.5	HP	
				Or Say	2.5	HP	
VI	**Gen Set**	Nos.	HP				
a)	Raw Water Transfer Pump	1	2.5	=		2.5	HP
b)	Domestic Water Transfer Pump	1	3.5	=		3.5	HP
c)	Flushing Water Transfer Pump	1	5.0	=		5	HP
d)	Tubewell	1	7.5	=		7.5	HP
e)	Lighting		3.0	=		3	HP
						20.5	HP
		or 20.5 x 0.746 x 1.50				22.9	KVA
		Say				~~30~~ 25	KVA
4	**Sewage Treatment Plant capacity**						
	Gross domestic + Flushing water requirement/day				117.6	KLD	
	Sewage flow will be 80% of Domestic & 100% of Flushing				105.6	KLD	
	STP Capacity required at 20% extra margin as per MOEF requirement				**126.74**	**KLD**	
	STP Capacity (Or Say)				**130.00**	**KLD**	
VII	**STP Treated Tank**						
	Daily requirement for flushing, horticulture, road			=	**76.62**	KLD	
	Capacity of under ground tank 14 hr storage @60% storage			=	**45.97**	KLD	
		Say		=	**45.00**	KLD	

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VIII	**BOOSTING MACHINERY (Flushing water)**			
	STP			
	Daily requirement for Flushing & Horticulture use	=	~~71.62~~ 76.42	KLD
	Assuming 6 hours running 1 pumps (with one standby)			
	Discharge/hour	=	~~11.94~~ 12.73	KL/HR
			~~198.94~~	LPM
		Or Say	~~200.00~~ 212.27 say 215 lpm	LPM
	Head of pump			
i)	Suction lifts	=	5.0	m
ii)	Friction loss in M<main & specials	=	5.0	m
iii)	Clear head	=	15.0	m
iv)	Residual head	=	15.0	m
		=	40.0	m
	Say	=	40.0	m
	BHP of motor (~~180~~ 215*45)/(60*75*0.6)	=	3.~~0~~8.	HP
		Or Say	5.0 ✓	HP

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WATER SUPPLY HEAD		Amount (Lacs.) For 3.8375 Ac	
Sub Head 1- Head Works		~~32.00~~	Rs 44.50
Sub Head 2- Pumping Machinery		~~18.20~~	Rs 16.45
Sub Head 3- Distribution System (Desm + flushing, Rising main)		~~16.57~~	Rs 19.76
Sub Head 4- Irrigation scheme		~~0.47~~	Rs 0.62
Total		~~67.24~~	Rs 81.33
Add 3% Contingencies & PE Charge		~~2.02~~	Rs 2.44
		~~69.26~~	83.77
Add 49% Departmental Charges		~~33.94~~	Rs 41.05
	TOTAL	~~103.19~~	124.82 lacs
(CO to final abstract of cost)	**SAY**	~~103.00~~	

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FINAL ABSTRACT OF COST

	Amount (Lacs.) For 3.8375 Ac
Sub Work 1- Water Supply	~~103.00~~ @ 124.82
Sub Work 2- Sewerage	~~72.91~~ @ 60.34
Sub Work 3- S.W. Drainage	~~45.67~~ @ 53.43
Sub Work 4- Roads	~~181.18~~ @ 192.70
Sub Work 5- Street Lighting	~~14.72~~ @ 14.72 lacs
Sub Work 6- Horticulture	~~2.32~~ @ 3.10 lacs
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)	~~184.99~~ @ 202.02
	@ 651.13 lacs
TOTAL	~~604.80~~
COST / ACRE	~~157.60~~ say @ 651.15 lacs

@ 651.15 lacs / 3.8375 Acre = @ 169.68 lacs

Checked subject to Comments
In forwarding letter No. 57095
Dt 05/08/2024 and notes
Attached with the estimate

Executive Engineer (M)
for Chief Engineer-I
HSVP Panchkula

Executive Engineer
HSVP Division No. V
Gurugram

Director
Town & Country Planning
Haryana, Chandigarh

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Superintending Engineer,
HSVP Circle, Gurugram

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.	1	1500000.00	15.00
2	Constructing pump chambers as per standard design of PWD PH/HSVP of size 1.50x1.50 m.	Nos.	1	100000.00	1.00
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				
i)	construction of boosting chamber			LS	5.00
ii)	construction of UG Tank 200KL cap. incl. 60KL cap. of fire fighting	KL.	200 KL	~~6000.00~~ 5500	~~12.00~~ 11.0
4	Provision for carriage of material and other unforeseen items	LS		LS (1.5)	1.00 1.0
5	Prov. of boundary wall around T.W.				
6	Provision for facilities staff for Maintenance.	LS		LS (1.5)	~~3.00~~ 7.50 3.0 1a
7	Prov. for footpath, Headges, lawn at T.W. water works 1 No. T.W. 1 No.				
	(C.O. to abstract of cost of Sub-work No.I)			TOTAL	~~32.00~~
				SAY	~~32.00~~ 44.50 1a5

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Sub Work I

Sub Head No. II

Water Supply
Pumping Machinery
Amount (Rs.)
(in Lakhs)

S. No.	Description	Unit	Qty	Rate	
1	Providing and installing electricity driven electro or submersible pumping set capable of delivering about 20 KL water per hour against a total head of 60 M complete with motor and other accessories.	Nos.	1	200000.00	2.00
2	Provision for cheap pressure type chlorination plant complete.			LS	1.00
3	Provision for making foundations & erection of pumping			LS	1.00
4	Provision for pipes, valves & specials inside the pump chamber.			LS	1.00
5	Provision for electric services connection including			LS	2.00
6	Providing and installing electricity driven pumping set, capable of delivering 130 LPM of water at 25M head complete in all respects. (For Filter Feed Pump) (2.0 HP) (1 working + 1 standby)	Nos.	2	120000.00	2.40
7	Providing and installing electricity driven pumping set, capable of delivering 170 LPM of water at 40M head complete in all respects. (3.0HP) (Domestic Water Transfer Pump) (1 working + 1 standby)	Nos.	2	0.60 120000.00	1.20 2.40
8	Providing and installing electricity driven pumping set, capable of delivering 200 LPM of water at 40M head complete in all respects. (5.0HP) (Flushing Water Transfer Pump) (1 working + 1 standby)	Nos.	2	1.00 120000.00	2.0 2.40
9	Provision of diesel generator set of each for standby arrangements for booster pump complete with gear				

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	30 KVA.	LS	~~3.00~~ 3.75
10	Provision for carriage of materials and other unforeseen	LS	~~1.00~~ 2
	(C.O. to abstract of cost of Sub-work No.I)	**TOTAL**	~~18.20~~ 16.45 las
		SAY	~~18.20~~
	Sub Work I		**Water Supply**
	Sub Head No. III		**Distribution System/Rising Main**

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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 water supply line)				
i)	100 mm dia	M	415	1475.00	6.12
2	Providing, laying, jointing & testing D.I. K-7 pipes including cost of excavation complete as per ISI marked. (For borewell line)				
i)	100 mm dia	M	10	1475.00	0.15
3	Providing, laying, jointing & testing ~~UPVC~~ DI pipes 10 Kg/Sqcm Class- IV (IS- 4985) including cost of excavation complete as per ISI marked. (For Flushing water supply line)				
i)	~~100~~ 160 mm dia	M	437	~~800.00~~ 1475	~~3.50~~ 6.45
4	Providing and fixing sluice valves including cost brick masonary chambers complete in all respects.				
i)	100 mm i/d	Nos.	3	~~25000.00~~ 12000	~~0.75~~ 0.36
5	Providing, fixing and testing butterfly valves including cost of valve chambers complete in all respects.				
i)	80 mm i/d	Nos.	3	16000.00	~~0.45~~ 0.30
6	Providing and fixing 100 mm dia NRV including cost of valve chambers complete in all respects.				
i)	100 mmm dia	Nos.	1	~~25000.00~~ 10000	~~0.25~~ 0.10
ii)	~~80 mmm dia~~	Nos.	1	~~20000.00~~	~~0.20~~
7	Providing and fixing air valves and scour valves including cost of valve chambers complete in all respects.	Nos.	4	10000.00	0.40
8	Providing and fixing indicating plates for sluice valve, air valve etc.	Nos.	12	2000.00	~~0.12~~ 0.24

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9	Provision for carriage of material			LS	1.00
10	Provision for cutting the roads and making to its original condition			LS	1.00
11	Providing and fixing fire hydrants complete with masonary chambers.	Nos.	5	15000.00	0.75
12	Making water supply connection with HSVP			LS	1.00
13	Provision for rising main from HSVP water supply line to UG Tank				
i)	100 mm dia (DI Pipe K-7)	M	60	1475.00	0.89
	(C.O. to abstract of cost of Sub-work No.I)			**TOTAL**	~~16.57~~ 19.76 lacs
				SAY	~~16.57~~

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Sub Work I — **Water Supply**

Sub Head No. IV — **Irrigation**

S. No.	Description	Unit	Qty	Rate	IN LACS
1	Providing, laying, jointing & testing UPVC pipes 10 Kg/Sqcm Class- IV (IS -4985) including cost of excavation complete as per ISI marked				
i)	25 mm dia	M	40	300.00	~~0.160~~ 0.12
2	Providing & fixing 20 mm PVC Irrigation hydrant valve with PVC lid complete in all respect including cost of PVC keys	Nos.	6	~~3500.00~~ 5000	~~0.21~~ 0.30
3	Provision for carriage of material and other unforseen	LS		10000.00	0.10
4.	Provn. for indicating plate, safety box.				0.10
	(C.O. to abstract of cost of Sub-work No.I)			**TOTAL**	~~0.47~~
				SAY	~~0.47~~ 0.62

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Sub Work II — **Sewerage Scheme**

S. No.	Description	Unit	Qty	Rate	in Lacs
1	Providing, lowering, jointing, cutting ~~DWC HDPE~~ S.W. SN8 pipes and specials into trenches including cost of excavation, bed concrete lot of manholes complete.				
i)	200 mm i/d			1700	1.41
a)	Average depth upto 1.5 m	M	83	~~2270.00~~	~~1.84~~
b)	Average depth 1.5 m to 4.5 m	M	362	~~2370.00~~ 1800	~~8.58~~ 6.52
2	Provision for lighting, watching and temporary diversion traffic			LS	3.00
3	Provision for timbering & shoring			LS	1.00
4	Provision for cutting of roads and carriage of materials etc. and other unforsean charges			LS	2.00
5	Provision for connection with HSVP			LS	1.00
6	Providing and installation of STP 130 KL including civil tanks and all electro mechanical works. It also includes flushing tank.	KL	130 KLD	~~25000.00~~ 16000	~~32.5~~ 20.80
7	Provision for DI K-7 pipe from S.T.P. to HSVP main line				
i)	100 mm dia pipe	M	40	1475.00 (L.S)	0.59
&	Providing & fixing vent shaft as per P.H.E. dey.				~~47.51~~ 2.00
					39.32 lacs
	Add 3% contingencies & PE charges				~~1.43~~ 1.18 lacs
					~~48.93~~ 40.50 lacs
	Add 49% Deptt. Charges				~~23.98~~ 19.84 lacs
				TOTAL	~~72.91~~ 60.34 lacs
	(C.O. TO FINAL ABSTRACT OF COST SUB WORK - II)			**SAY**	~~72.91~~

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Sub Work III

Storm water drainage

S. No.	Description	Unit	Qty	Rate	In Lacs
1	Providing, lowering, jointing, cutting RCC NP3 pipes and specials into trenches including cost of excavation cost of manholes, ventilating chambers etc. complete in all respects.				
i)	400 mm i/d			2500 /	9.70
a)	Average depth upto 1.5 m	M	388	~~2950.00~~	~~11.45~~
b)	Average depth 1.5 m to 4.5 m	M	38	~~3050.00~~ 2600	~~1.16~~ 0.99
2	Provision for road gully and drain.			LS	~~5~~ 2.00
3	Provision for lighting, watching and temporary diversion of traffic.			LS	~~5~~ 00
4	Provision for cutting of roads and carriage of materials etc. and other unforseen items.			LS	3.00
5	Construction of rain water harvesting pit as per details and specification given below and as per attached drawing including, cost of excavation of all ind soil foundation trenches of drain including dressing of sides of ramming and getting out excavtion of soil.	Nos	2	3450000.00	7.00
6	Provision for ~~connection with~~ SWD line upto sewer HSVP. 400 mm i/d (Average depth 1.5 m to 4.5 m)	M	5	2500 ~~3050~~	0.13 ~~0.15~~
7	Provision for connection with HSVP line			LS	2.00
8.	Prov. for temporary Disposal arrangement till HSVP Servic are provide				
	Add 3% contingencies				~~29.76~~ 34.82 ~~0.89~~ 1.04
	Add 49% Deptt. Charges				~~30.65~~ 35.86 ~~15.02~~ 17.57
				TOTAL	~~45.67~~ 53.43 lacs
	(C.O. TO FINAL ABSTRACT OF COST SUB WORK - III)			**SAY**	~~45.67~~

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Sub Work IV — Road Work

S. No.	Description	Unit	Qty	Rate	In Lacs
1	Provision for levelling and earth filling as per site conditions.	Acre	3.8375	175000.00	6.72
2	Construction of road by- i) 150 mm thick W.B.M. stone aggregate layer ii) 100 mm thick PCC iii) 50 thick sand bed iv) 80 mm thick conc. pavers Total	Sq. M	6797	1500.00	101.96
3 (a)	Miscellaneous items Providing for Kerbs & Channels for 3.8375 ACRES 898 RM	RMT	898	600.00	5.39
4	Provision for traffic lighting and guide map	LS		100000.00	1.00
5	Provision for carriage of material	LS		~~100000.00~~	~~1.00~~
6	Provision for plot indicator	LS		100000.00	1.00
7	Provision for demaracation & burgies	LS		100000.00	1.00
8	Add 3% contingencies				~~118.06~~
	Add 49% Deptt. Charges				~~3.54~~ ~~121.60~~ ~~59.58~~
				TOTAL	~~181.18~~
	(C.O. TO FINAL ABSTRACT OF COST ~~SUB WORK - IV~~)			SAY	181.18

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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 standerd specification of HVPNL and CFL complete in all respect				
	Provision made on L.S. cost @ Rs.2,50,000.00 per	L.S.	3.8375	250000.00	9.59
					9.59
	Add 3% contingencies & PE charges				0.29
					9.88
	Add 49% Deptt. Charges , price escalations, unforseen Admn.				4.84
				TOTAL	**14.72**
	(C.O. TO FINAL ABSTRACT OF COST SUB WORK - V)			**SAY**	**14.72** lacs

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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 apcking of servicable material and disposing at the lead of 50m and making upto the tranched area to prope level by filling with earth mixed with manure before and after flooding trenches with water including cost of imported earth and manure.				
b)	Rough dressing of trenched area.				
c)	Grassing with including watering and maintenance of lawns free from weds and fit for moving in rows including for hedges, shrubs and green belt (as per HSVP Norms)	Per acre	0.5756	150000.00	0.86
2	Planting of trees with tree guards on roads at 12 m intervals with 12m wide road one side & 24 m wide both side				
	Total length of roads = 430 mtr				
	No of trees @ 12m c/c = 430/12 = 35.833 nos				
	say = ~~36~~ nos 50 Nos			2310	1.16 lacs
	Cost of the tree @ ~~1800~~/- each 2310	~~Nos~~ each	36	~~1800.00~~	~~0.65~~ 2.02 lacs
	TOTAL				~~1.51~~
	Add 3% contingencies etc PE charges				~~0.05~~ 0.06 lacs
					~~1.56~~ 2.08 lacs
	Add 49% Deptt. Charges, price escalation, unforseen Admn				~~0.76~~ 1.02 lacs
				TOTAL	~~2.32~~ 3.10 lacs
	(C.O. TO FINAL ABSTRACT OF COST SUB WORK - VI)			**SAY**	~~2.32~~

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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.	Acre	3.8375	~~750000.00~~ 8.00 lacs	~~28.78~~ 30.70 lacs
2	Provision for resurfacing and strengthening of roads after 1st five years of 1st phase with 80 mm thick concrete pavers @ 600 / sqm	Sq. M	6797	660 ~~600.00~~	44.86 lacs ~~40.78~~
3	Provision for resurfacing and strengthening of road after 10 years of 2nd phase with 80 mm thick concrete pavers @ 750 / sqm	Sq. M	6797	825 ~~750.00~~	56.08 lacs ~~50.98~~
					131.64 lacs
	Add 3% contingencies & PE charges				~~120.54~~ 3.95 lacs ~~3.62~~ 135.59 lacs
	Add 49% Deptt. Charges, price escalation, unforseen, Admn.				~~124.16~~ ~~60.84~~ 66.43 lacs
				TOTAL	~~184.99~~ Rs 202.02 lacs
	(C.O. TO FINAL ABSTRACT OF COST ~~SUB WORK - VII~~)			SAY	~~184.99~~

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PROJECT :-GLS SCO 3.8375 ACRES

TITLE :- FLUSHING WATER SUPPLY HYDRAULIC CHART FOR RING LINES.

S.NO	Line No		Number of Plots	Ground Floor Area in sqm	Upper floor population 1st to 3rd floor in sqm	Population Ground Floor		Population Upper Floor		Staff	Total Water requirement in LPD @ 20 LPD for Permnent & 10 LPD for temporary for Flushing	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	Road LVL at start	Hydraulic LVL at start	Head at start	Road LVL at End	Hydraulic LVL at End	Head at End
	From	To	Nos.			Permanent	Temporary	Permanent	Visitors		LPD	LPD	KLD	KLD	LPM	MTR.	MTR.	MTR.	M/SEC	MM	MTR.	MTR.	MTR.	MTR.	MTR.	MTR.
						@ 10% of Population	@ 90% of Population	@ 10 sqm/Person	@ 10% of Population																	
1	STP	F-01	53	5435.40	17859.19	181	1631	1786	179	10	57640	57640	58	144	100	2	0.0016	0.00	0.332	80	100.450	140.450	40.000	100.450	140.447	39.997
2	F-01	F-02	53	5435.40	17859.19	181	1631	1786	179	10	57640	57640	58	144	100	16	0.0016	0.03	0.332	80	100.450	140.447	39.997	100.450	140.422	39.972
3	F-02	F-03	53	5435.40	17859.19	181	1631	1786	179	10	57640	57640	58	144	100	72	0.0016	0.11	0.332	80	100.450	140.422	39.972	100.450	140.309	39.859
4	F-03	F-04	23	2636.01	8661.18	86	791	866	87		27860	27860	28	70	48	16	0.0004	0.01	0.160	80	100.450	140.309	39.859	100.450	140.302	39.852
5	F-04	F-05	4	456.76	1500.78	15	137	150	15		4820	4820	5	12	8	25	0.0000	0.00	0.028	80	100.450	140.302	39.852	100.450	140.302	39.852
6	F-04	F-06	17	1952.725	6416.10	65	586	642	64		20640	20640	21	52	36	104	0.0002	0.02	0.119	80	100.450	140.302	39.852	100.450	140.278	39.828
7	F-03	F-07	17	1666.206	5474.68	56	500	547	55	10	17810	17810	18	45	31	37	0.0002	0.01	0.102	80	100.450	140.309	39.859	100.450	140.302	39.852
8	F-07	F-08	3	303.207	996.25	10	91	100	10		3210	3210	3	8	6	50	0.0000	0.00	0.018	80	100.450	140.302	39.852	100.450	140.302	39.852
9	F-07	F-09	11	1107.999	3640.57	37	332	364	36	10	11900	11900	12	30	21	115.5	0.0001	0.01	0.068	80	100.450	140.302	39.852	100.450	140.292	39.842

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PROJECT :-GLS SCO 3.8375 ACRES

TITLE :- DOMESTIC WATER SUPPLY HYDRAULIC CHART FOR RING LINES.

S.N0	Line No		Number of Plots	Ground Floor Area in sqm	Upper floor population 1st to 3rd floor in sqm	Population Ground Floor		Population Upper Floor		Staff	Total Water requirement in LPD @ 25 LPD for Permnent & 5 LPD for temporary for Domestic	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	Road LVL at start	Hydraulic LVL at start	Head at start	Road LVL at End	Hydraulic LVL at End	Head at End
	From	To	Nos.			Permanent	Temporary	Permanent	Visitors		LPD	LPD	KLD	KLD	LPM	MTR.	MTR.	MTR.	M/SEC	MM	MTR.	MTR.	MTR.	MTR.	MTR.	MTR.
						@ 10% of Population	@ 90% of Population	@ 10 sqm/Person	@ 10% of Population																
1	UGT	D01	53	5435.40	17859.19	181	1631	1786	179	10	58475	58475	58	146	102	~~4.5~~ 5	0.0006	0.003	0.215	100	100.450	140.450	40.000	100.450	140.447	39.997
2	D01	D02	53	5435.40	17859.19	181	1631	1786	179	10	58475	58475	58	146	102	103.5	0.0006	0.064	0.215	100	100.450	140.447	39.997	100.450	140.383	39.933
3	D02	D03	4	456.76	1500.78	15	137	150	15		4885	4885	5	12	8	24	0.0000	0.000	0.018	100	100.450	140.383	39.933	100.450	140.383	39.933
4	D02	D04	32	3025.92	9942.31	101	908	994	99	10	32660	32660	33	82	57	16.5	0.0002	0.003	0.120	100	100.450	140.383	39.933	100.450	140.380	39.930
5	D04	D05	13	1133.15	3723.21	38	340	372	37		12135	12135	12	30	21	65	0.0000	0.002	0.045	100	100.450	140.380	39.930	100.450	140.378	39.928
6	D04	D06	14	1411.206	4636.82	47	423	464	46	10	15370	15370	15	38	27	35.5	0.0001	0.002	0.057	100	100.450	140.380	39.930	100.450	140.378	39.928
7	D06	D07	3	303.207	996.25	10	91	100	10		3255	3255	3	8	6	50	0.0000	0.000	0.012	100	100.450	140.378	39.928	100.450	140.378	39.928
8	D06	D08	11	1107.999	3640.57	37	332	364	36	10	12115	12115	12	30	21	115.5	0.0000	0.004	0.045	100	100.450	140.378	39.928	100.450	140.374	39.924

4.5 m

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PROJECT : GLS SCO 3.8375 ACRES																
S. No.	Line No.		Number of Plots	Ground Coverage in sqm	Upper floor area 1st to 3rd floor in sqm	Population Ground Floor		Population Upper Floor		Staff	Total Water requirement in LPD @ 25 LPD for Permnent & 5 LPD for temporary for Domestic & 20 LPD for Permnent & 10 LPD for temporary for Flushing		Total Water Requirement (Load on Line)	Sewage Flow (Self Load on Line)	Sewage Flow (Self Load on Line)
						Permanent	Temporary	Permanent	Visitors		Domestic	Flushing	lpd.	lpd.	kld.
	From	To				@ 10% of Population	@ 90% of Population	@ 10 sqm/Person	@ 10% of Population					80% for domestic & 100% for flushing	1000
1	S-01	S-03	11	1107.999	3640.57	37	332	364	36	10	12115	11900	25515	23092	23.09
2	S-02	S-03	3	303.207	996.25	10	91	100	10		3255	3210	6465	5814	5.81
3	S-03	S-07	0	0	0.00	0	0	0	0		0	0	0	0	0.00
4	S-04	S-06	17	1952.725	6416.10	65	586	642	64		20925	20640	41565	37380	37.38
5	S-05	S-06	4	456.76	1500.78	15	137	150	15		4885	4820	9705	8728	8.73
6	S-06	S-07	5	481.525	1582.15	16	144	158	16		5150	5080	10230	9200	9.20
7	S-07	S-08	13	1133.15	3723.21	38	340	372	37		12135	11970	24105	21678	21.68
8	S-08	STP	0	0	0.00	0	0	0	0		0	0	0	0	0.00

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Prog- ressive Discharge (Peak)	Infilteration @ 25% Av. Discharge	Total Dis- charge	Length	Pipe Size	Slope (1 in)	Fall	Velocity	Capacity of Pipe	Road Formation level at Start	Invert Levels at Start	Road Formation level at End	Invert Levels at End	Manhole Start Depth	Manhole Depth End	Average Depth	Number of Manhole	Type of Manhole			
																	910 Dia Upto 1.67m	1220 Dia From 1.67 to 2.29m	1520 Dia From 2.29 to 4.19m	1820 Dia Above 4.19m
lps.	lps.	lps.	(mtr.)	(mm)	(mm)	(mtr.)	(m/s) (v)	lps.	(mtr.)	(mtr.)	(mtr.)	(mtr.)	(mtr.)	(mtr.)	(mtr.)	(nos.)	A	B	C	D
0.80	0.07	0.87	112	200.00	145.00	0.77	1.02	16.09	100.450	99.250	100.450	98.478	1.20	1.97	1.59	7	7	0	0	0
0.20	0.02	0.22	57	200.00	145.00	0.39	1.02	16.09	100.450	99.250	100.450	98.860	1.20	1.59	1.39	4	4	0	0	0
1.00	0.08	1.08	24	200.00	145.00	0.17	1.02	16.09	100.450	98.478	100.450	98.312	1.97	2.14	2.06	1	0	1	0	0
1.30	0.11	1.41	100	200.00	145.00	0.69	1.02	16.09	100.450	99.250	100.450	98.560	1.20	1.89	1.54	8	8	0	0	0
0.30	0.03	0.33	24	200.00	145.00	0.17	1.02	16.09	100.450	99.250	100.450	99.084	1.20	1.37	1.28	2	2	0	0	0
1.92	0.16	2.08	29	200.00	145.00	0.20	1.02	16.09	100.450	98.560	100.450	98.360	1.89	2.09	1.99	3	0	3	0	0
3.68	0.31	3.98	94	200.00	145.00	0.64	1.02	16.09	100.450	98.312	100.450	97.667	2.14	2.78	2.46	9	0	0	9	0
3.68	0.31	3.98	4	200.00	145.00	0.02	1.02	16.09	100.450	97.667	100.450	97.643	2.78	2.81	2.79	1	0	0	1	0

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हरियाणा शहरी विकास प्राधिकरण
HARYANA SHEHARI
VIKAS PRADHIKARAN

Address: C-3, HSVP , HQ Sector-6
Panchkula

CE-I No. 57025
Dated: 25/03/2024

Annexure-A

SUB:- Request for approval of service plan estimate for Commercial Plotted Colony under licence no. 103 of 2021 dated 08.12.2021 area measuring 2.95625 acres & license no. 145 of 2023 dated 11.07.2023 area measuring 0.88125 acres thereby total area measuring 3.8375 acres situated in the revenue estate of Village Dhorka, Sector-95, Gurugram developed by GLS Infraprojects Pvt. Ltd.

Technical note and comments:-

1 All detailed working drawings would have to be prepared by the colonizer for Integrating the internal services proposals with the master proposals of town.

2. The correctness of the levels will be the sole, responsibility of the colonizer for the integration of internal proposals, with the master proposals, of town and will be got confirmed before execution.

3. The material to be used shall the same specifications as are being adopted by HSVP and further shall also confirm to such directions, as issued by Chief Engineer, HSVP from time to time.

4. The work shall be carried out according to Haryana PWD specification or such specifications as are being followed by HSVP. Further it shall also confirm to such other directions, as are issued by Chief Engineer, HSVP from time to time.

5. The colonizer will be fully responsible to meet the demand of water supply and allied services till such time these are made available by State Government/ HSVP. All link connections with the State Government/ HSVP system and services will be done by the colonizer. If necessary extra tube-wells shall also be installed to meet extra demand of water beyond the provision according to EDC deposited.

6. Structural design & drawings of all the structures, such as pump chamber, boosting chamber, RCC OHSR, underground tanks, quarters, manholes chamber, sections of RCC pipes sewer and SW pipes, sewer, ventilating shafts for sewerage and Masonry Ventilation Chamber *for* Chamber for storm water drainage, temporary disposal/ arrangement etc. will be as per relevant I.S codes and PWD specifications, colonizer himself will be responsible for structural stability of all structures.

7. Potability of water will be checked and confirmed and the tube-wells will be put into operation after getting chemical analysis of water tested.

8. Only C.I/D.I pipes will be used in water supply and flushing system, UPVC/HDPE pipe for irrigation purposes.

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HARYANA SHEHARI
VIKAS PRADHIKARAN

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Panchkula

9. A minimum 100 i/d C.I/D.I, 200mm i/d SW and 400mm id RCC NP-3 pipes will be used for water supply, sewerage and storm water drainage respectively.
10. Standard X-section for S.W. pipes sewer, RCC pipes sewer etc. will be followed as are being adopted in Haryana Public Health Engineering Deptt. or HSVP. If needed, the same may be sought by the colonizer from concerned Executive Engineer of HSVP.
11. The X-section, width of roads, will be followed as approved by the Chief Town Planner, Haryana, Chandigarh. The kerbs and channels will also be provided as per approved X-section and specifications. If needed, the same may be sought by the colonizer from concerned Executive Engineer of HSVP.
12. The specifications for various roads will be followed as per IRC/MORTH specifications.
13. The wiring system of street lighting and specifications of street lighting fixture will be as per relevant standards.
14. This shall confirm to such other conditions as are incorporated in the approved estimate and the letter of approval.

Executive Engineer (M),
for Chief Engineer-I, HSVP,
Panchkula.