SERVICE ESTIMATE REPORT

M/S SWD GROUP HOUSING
SECTOR-69, GURUGRAM

Date: 25/09/2024

REVISION: R0

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Riverday Infrastructure Private Limited

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PROJECT: PROPOSED BUILDING PLAN FOR MIXED LAND USE COLONY (98% RESIDENTIAL COMPONENT AND 2% COMMERCIAL COMPONENT) UNDER TOD POLICY OVER AN AREA MEASURING 11.66875 ACRES. (LICENSE NO 90 OF 2024 DATED 18.07.2024) IN THE REVENUE ESTATE OF VILLAGE FAZILPUR JHARSA & BADSHAHAPUR, SECTOR-69 GURUGRAM, BEING DEVELOPED BY RIVERDAY INFRASTRUCTURE PRIVATE LIMITED

REPORT

Gurugram town of Haryana State is situated on Delhi - Jaipur National Highway No.8 at a distance of 30 kms for Delhi. Being in the national capital Region, the town has fast developing tendency and potential. Further, it has also started sharing the growing Industrial load of Delhi. In order to relieve the growing pressure of population in National Capital of Delhi, Haryana Urban Development Authority has already developed residential sector which are inhabited to an extent. Further to the increasing demand HSVP has planned to develop new sectors at outskirt of Gurugram town. This report and estimate are for approval of 11.66875 acres Group Housing scheme in Sector-69, Gurugram.

WATER SUPPLY

The source of water supply shall be GMDA water supply connection, augmented through tube wells & HSVP. As the underground water is potable, provision for **four numbers** (3W & 1S) of Bore wells as per calculation. It has been proposed to construct underground tanks of capacity as per attached details and at location for domestic purpose and for fire protection. The underground tanks will be fed from the bore wells and GMDA supply from there water will be pumped to O.H. water tanks on the roof of the Buildings of Individual Towers. STP treated water will used for Flushing & irrigation water supply and water will be fed from the STP, from there water will be pumped to O.H. water tanks on the roof of the Buildings of Individual Towers

DESIGN:

The scheme has been designed for population considering 2 BHK-Five persons, 3 BHK-Six persons, 4 BHK- Seven persons, club & commercial Building for each main dwelling unit and Four persons for each EWS. The rate of water supply (Domestic + Flushing) per capita / day has been taken as 172.5 lpcd for main dwelling unit and EWS.

PUMPING EQUIPMENTS

It has been proposed to install pumping set as described with standby of equal capacity. Standby electric power requirement is added to the main DG Sets in case of electricity failure.

SEWERAGE SCHEME

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This scheme is designed for sewer connecting to STP and bypass connection to GMDA sewer scheme.

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 water supply and 100% of the 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 400 mm dia. has been designed to run half full and above 400 mm dia. has been designed to run three fourth full at peak flow. Necessary provision for laying S.W / RCC pipe sewer line, construction of required number of manholes etc. have been made in the estimate.

Necessary design statement for entire sewerage system has been prepared and attached with estimate. Manning's formula has been used for the design of sewerage system.

STORM WATER DRAINAGE

We proposed to lay underground R.C.C. (NP-3) pipe drains with required number of catch basins for disposal of storm water which will be connected to the Proposed GMDA storm drain on sector Road. 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. / GMDA

Roads:

Roads have been provided to above zones and estimate is prepared as per revised specifications adopted by GMDA.

Street Lighting

Provision for streets lighting also has been made in the estimate.

Horticulture

Estimates and details of plantation, landscaping, signage, etc., has 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. 2117.15 lakhs** including 3% contingencies @ 49% departmental charges, price escalation, unforeseen & admin charges etc.

For RIVERDAY INFRASTRUCTURE PRIVATE LIMITED

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I. DESIGN CALCULATION (Standard Parcel)

I. Summary of total water (As per water calculation Sheet)

(A) Total of domestic and flushing requirement	=	**1439 KLD**
SAY	=	**1439 KLD**
(B) Domestic requirement	=	**1044 KLD**
(C) **Flushing requirement**	=	**395 KLD**
(D) Irrigation & Road washing	=	**41 KLD**

STP Capacity @ 80% of domestic & flushing water requirement (Excluding Horticulture, Water Body, Swimming Pool & Road Washing requirement)

II. SUMMARY & SOURCE OF WATER

i.	Domestic water (From Borewell / GMDA)	=	1044 KLD
ii.	Flushing water (From STP)	=	395 KLD
iii.	Horticulture & Road Washing (From STP)	=	41 KLD
iv.	Total Fresh Water Demand	=	1044 KLD

III. SUMMARY OF UGT

(i)	Domestic water tank (One day requirement)	=	**350 KLD**
(ii)	Firefighting water tank	=	**700 KLD**
(iii)	Flushing & horticulture water tank (In STP)	=	**265 KLD**

Therefore, it is proposed to construct underground water storage @ one day requirement of the total domestic water capacity of Raw Water tank of **1 Nos x 350 KL** & domestic water tank of **1 Nos x 350 KL** for entire project and firefighting tank of **1 Nos x 700 KL** for entire project at one location marked on plan. Also,**1 x Nos x 265 KL** for Flushing & Horticulture purpose.

IV. BOREWELLS

a)	Approx. discharge from each bore well	=	30.00 KL/hr
b)	Operating time of bore wells	=	12 hrs/day
c)	Total yield from each bore well KLD	=	30.00x12 = 360.00
d)	Total water requirement	=	1044 KLD
e)	Number of bore wells	=	1044 / 360 = 2.9 Nos.
f)	Standby	=	1.0 Nos.
	Total	=	*3.9 Nos.*
	Say	=	**4.0 Nos.**

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Since the entire water to the proposed development is to be supplied by GMDA. So, it is proposed to install 4 numbers (3w +1s) of bore-wells as supplementary source of water.

V. PUMPING MACHINERY FOR BOREWELLS

Gross working head		=	80.00 mts.
Average fall in S.L.		=	03.05 mts.
Depression Head		=	06.10 mts.
Friction loss in main		=	03.05 mts
	TOTAL	=	92.20 mts.
	SAY	=	100.00 mts.

HP (Each) = $\frac{30000 \times 100 \times 1}{60 \times 60 \times 75 \times 60\%}$ = 18.51 HP, Say= 20 HP

VI. BOOSTING MACHINERY FOR DOMESTIC PUMP

Pumping hour @ 10 hours /day		=	1044 / 10 = 104.4 KL/hr
		=	1740 lpm
		=	1740/3 = 580 lpm
	Say	=	600 lpm (3W + 1S)

Gross working head			
Suction lift		=	10.5 meter
Friction loss		=	36.5 meter
Clear head required		=	200 meter
	Total	=	247.0 meter
	Say	=	265.00M

HP (Each) = $\frac{600 \times 265}{60 \times 75 \times 60\%}$ = 58.88 HP, Say = 60

It is proposed to provide **4 Nos** (3 Working + 1 Standby) of pumping sets of **600 lpm** discharge at **265 Mtr.** Head for Domestic Supply.

VII. BOOSTING MACHINERY FOR FLUSHING PUMP

a) Flushing & Irrigation Water Supply

Pumping hour @ 10 hours /day		=	436/ 10 = 43.6 KL/hr
		=	726.66 lpm
		=	726.66/2 = 363.33 lpm
	Say	=	400 lpm (2W + 1S)

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Gross working head

Suction lift		=	6.50 meter
Friction loss		=	16.50 meter
Clear head required		=	96.0 meter
	Total	=	119.0 meter
	Say	=	120.00M

HP (Each) = $\frac{400 \times 265}{60 \times 75 \times 60\%}$ = 39.25 HP, Say= 40 HP

It is proposed to provide **3 Nos** (2 Working + 1 Standby) of pumping sets of **400 lpm** discharge at **265 Mtr.** Head for Flushing Supply.

VIII. PUMPS FOR FIRE PROTECTION

S.NO.	PARAMETERS	LOCATION	PUMP SETS					
			JOCKEY	MAIN	DIESEL	SPRINKLER	CURTAIN	UGT TO SERVICE FLOOR FIRE TANK FILLING
1		Pump room						
(a)	Discharge in lpm		180	2850	2850	2850	2850	2850
(b)	Head in meters		195 /240 / 285 M	195 /240 / 285 M	195 /240 / 285 M	125/175/220M	60 M	265 M
(c)	HP		20	300		300	75	300
(d)	Quantity in nos		2	1	2	1	2	2
2		Service Floor						
(a)	Discharge in lpm		180	2850	2850	2850		
(b)	Head in meters		60 M	60 M	60 M	60 M		
(c)	HP		5	75		75		
(d)	Quantity in nos		2	1	1	1		

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IX. CAPACITY OF DG SETS

S.NO.	EQUIPMENT	QUANTITY	HP (EACH)	TOTAL HP
1	BOREWELL	4	20	80
2	FIRE JOCKEY	2	20	40
3	FIRE PUMP UGT TO SERVICE FLOOR FIRE TANK FILLING	2 (1W + 1S)	300	300
4	DOMESTIC PUMPS (1 SET)	4 (3W + 1S)	60	180
5	FLUSHNG & IRRIGATION PUMPS (1 SET)	3 (2W + 1S)	40	80
6	STP			150
7	EXTERNAL LIGHTING			15
8	SWIMMING POOL			15
	TOTAL			**860.00**
				640.7 KW
				954.65 KVA
		SAY		**1000 KVA**

It is proposed to add **1000 KVA** capacity for above said machinery to the main DG set.

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