

**EXTERNAL DEVELOPMENT WORKS
DESIGN
& COST ESTIMATES**

FOR

PROPOSED
GROUP HOUSING SCHEME

LAYOUT PLAN FOR GROUP HOUSING COLONY BEING DEVELOPED, OVER
LAND ADMEASURING (8.81+0.348) ACRES SITUATED IN SECTOR-2, GWAL
PAHARI, HARYANA, UNDER LICENSE NO. 98 of 2011 DATED 11.11.2011, BY
ADANI INFRASTRUCTURE AND DEVELOPERS PRIVATE LIMITED.

REPORT

1. WATER SUPPLY

The source of water supply in this area is through HUDA water supply mains. 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 under-ground tanks will be fed from the HUDA supply, which will feed O.H. tanks on the roof of the Buildings. The water supply system has been designed as per the Hazen Williams formula.

2. DESIGN

The scheme has been designed for population of approx. 1878 persons considering 5,6,7 persons w.r.t type of dwelling unit and 4 persons per EWS unit. The combined quantum of water supply (domestic + flushing) per head/day has been taken as 135Liters per head per day.

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 also been provided in case of any electricity failure. Generator will be provided separately or added to the capacity of main generator.

4. SEWERAGE SCHEME

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

The sewer lines have designed for three times average D. W. F. in relation to water supply demand. It has assumed that about 80% of the domestic 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 upto 300mm dia has been designed to run half-full and above 300mm dia has been designed to run three fourth full at peak flow. Necessary provision for laying DWC PE (IS:16098) pipe, SN-8 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 on the design of sewerage system.

5. STORM WATER DRAINAGE

It has proposed to lay underground DWC PE pipe (IS:16098), SN-8 drains with required number of catch basins for disposal of storm water, which will be connected to the HUDA drain. The intensity of rainfall has been taken as 50 mm per hour. A minimum size of 300mm dia storm water line will be provided and designed as per manning's formula. Necessary rainwater harvesting arrangement also has been provided.

6. SPECIFICATIONS

The work will be carried out in accordance with the standard specifications of PHE as laid down by the Haryana Govt./HUDA.

7. ROADS

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

8. STREET LIGHTING

Provision for external street lighting of proposed area has been made.

9. HORTICULTURE

Estimates and details of plantation, landscaping, signage, etc., has been included.

10. RATES

The estimate has been based on the present market rates.

11. COST

The total cost of the scheme, including cost of all services works out to be Rs. ~~1393.87~~ 1877.6 lakhs including 3% contingencies @ 49% departmental charges.

1295.50



(Authorized Signatory)
With Stamp



Manoj Jena
M. Tech (Electrical) C. Eng (M-1688065)

1. DESIGN CALCULATION (Standard parcel)(i) Water Requirementa) Apartment Buildings (Tower A, C)

Total No. of 4 BHK dwelling units	=	128 80
Population @ 5/6/7 person for	=	128x7 80x5
2/3/4 BHK Dwelling unit, Total population	=	400
	=	896 persons
Total population	=	896 400
Total water requirement @ 172 lpcd	=	896 x 172.50
	=	154112 liter's/day
		69000

Apartment Buildings (Tower B, D)

Total No. of 4 BHK dwelling units	=	128 72
Population @ 5/6/7 person for	=	128 72 X 5
2/3/4 BHK Dwelling unit, Total population	=	640
	=	504 persons
Total No. of penthouse dwelling units	=	8 24
Population @ 5/6/7 person for	=	8 24 X 7.2
2/3/4 BHK Dwelling unit, Total population	=	485
	=	56 persons
Total population	=	688
	=	560
Total water requirement @ 172 lpcd	=	688 x 172.50
	=	118680
	=	96320 liter's/day

Total water requirement of Tower A, B, C & D = 250432
 SAY = 250.4 KL/Day

187.68 say 200 KL/D

b) EWS

No. of dwelling units	=	43
Population @ 4 person for	=	43 x 4.2
Dwelling unit, Total population	=	86
	=	172 persons
Total water requirement @ 172 lpcd	=	86
	=	172 x 172.50
	=	14835
	=	29584 liters/day
	=	14.84
	=	29.5 KL/Day
		15.0

c) Sports Club Building

Total water requirement @ 45 Fixed		
Total population	=	100 persons
Total water requirement @ 45 lpcd	=	100 x 45 = 4500 ltr

	=	4.5 KL/Day
d) Social Club Building		
Total water requirement @ 45 Fixed		
Total population	=	150 persons
Total water requirement @ 45 lpcd	=	150 x 45 = 6750 ltr
	=	6.75 KL/Day
(ii) As per NBC 2016, Table No. 7 fire demand	=	750 KLD
Total water requirement (excluding Fire Demand)	=	$1 \times 2, 3 + 4$ $a + b + c + d$ $187.68 + 14.84$ ✓ ~ $250.4 + 29.4 + 4.5 + 6.75 = 291.05$ ≈ 213.77
	=	291.05 KL/Day say 220 KLD
Hence Domestic Water requirement	=	$\frac{220}{(291.05 \times 66\%)}$ 145.20 192.09 KL/Day
SAY	=	192 KLD 150
Hence Flushing Water requirement	=	$\frac{220}{(230.95 \times 34\%)}$ 74.80 96.04 KL/Day
SAY	=	96 KLD 75
(iii) Horticulture Requirement		
Total area of site	=	9.158 Acres
Total soft area (approx.)	=	8658 sq mtr
Total water requirement for horticulture Work @ 6 ltr/sqmtr / Day	=	$8658 \times 6 = 51948$ ltr 53482 51.9 KL/Day 53.46
SAY	=	52 KL 54

Note- Horticulture requirement will be fed from Treated Effluents.

(iv) Underground water Tank

a) Total water demand	=	1035 1170 KL
<i>taking one day storage</i>		$\frac{150}{75}$ (250 KL for domestic)-portable water (110 KI for flushing)-treated water (60 KL for horticulture)-treated water (750 KL for FIRE)

But it is proposed to construct an underground tank of 1 X ⁷⁵125 KL for raw water and 1 X ⁷⁵125 KL for domestic water, 1 X ⁷⁵110 KL + 1 x 60kl of non-potable water in two compartments in STP area, and 2 X 375 KL for firefighting purpose in compartments as the locations shown in the plan i.e. total ¹⁰³⁵1170 KL.

(v) **Municipal Supply**

Entire water to the proposed development is to be supplied by HUDA from the canal filtration scheme.

(vi) **Hydropneumatic Machinery for domestic water**

Total Water Requirement

Pumping per hour @ 4hr. pumping / day	=	¹⁵⁰ 192 /4 KL / hr.
	=	^{37.50} 48 KL / hr
Total	=	⁶²⁵ 800 lpm = 14 lps
Gross working head		
- Suction lift	=	0.00 mts.
- Frictional loss in mains & specials	=	26.00 mts.
- Clear Head required	=	135 mts.
Total	=	161.00 mts.
Say	=	170 mtr.
Pump HP	=	⁶²⁵ (800 x 170) / (4500 x 0.65)
	=	^{39.45} 47 HP
Say	=	^{40.0} 50 HP
Say	=	⁴⁰ 50 HP / 2
	=	²⁰ 25 HP (Consider 2 working pumps)

It is proposed to provide 3 No. of pumping set 1 (2 W + 1S), so pump capacity would be ~~8.5 x 2~~ (2 working) = ^{17 LPS} ~~17 LPS~~ ^{320 lpm}

(vii) **Hydropneumatic Machinery for flushing water**

Total Water Requirement

Pumping per hour @ 4 hr pumping / day	=	⁷⁵ 92 /4 KL / hr.
	=	^{18.75} 23 KL / hr
Total	=	^{312.50} ^{5.20} 400 lpm = 7 lps ^{say 320 lpm}
Gross working head		
- Suction lift	=	0.00 mts.
- Frictional loss in mains & specials	=	21.00 mts.
- Clear Head required	=	135.00 mts.

Gen. sel

$$\begin{array}{rcl} \text{Dom. Pump} & : & 2 \times 20 = 40 \text{ HP} \\ \text{Flushing water pump} & - & 1 \times 20 = 20 \text{ HP} \\ \text{Jockey Pump} & \sim & 1 \times 10 = 10 \text{ HP} \\ \text{Lubbing} & \sim & (45) \quad \frac{20 \text{ HP}}{90 \text{ HP}} \end{array}$$

$$90 \times 0.746 \times 1.50 \sim 100.71 \text{ KVA} \quad \text{say } 100 \text{ KVA}$$

Cap. of STP

$$\text{Total water for } = 220 \times 0.80 = 176 \text{ MLD}$$

$$\begin{array}{rcl} \text{Add 5\% for margin} & \sim & \frac{8.80}{184.80} \\ \text{factor} & & \end{array}$$

$$\text{say } 200 \text{ MLD}$$

Total	=	156 mts.
Say	=	170 mtr
Pump HP	=	$\frac{320}{(400 \times 170) / (4500 \times 0.65)}$
	=	24 HP 20.34
Say	=	24 HP
Say	=	24 HP

It is proposed to provide 2 No. of pumping set (1 W + 1S), so pump capacity would be = 8 LPS

(viii) Hydropneumatic Machinery for irrigation water

Total Water Requirement

Pumping per hour @ 6 hr pumping / day	=	60/6 KL / hr.
	=	10 KL / hr
Total	=	167 lpm = 2.8 lps
Gross working head		
- Suction lift	=	0.00 mts.
- Frictional loss in mains & specials	=	5.00 mts.
- Clear Head required	=	25 mts.
Total	=	30.00 mts.
Pump HP	=	$\frac{167}{(2.8 \times 30) / (4500 \times 0.65)}$
	=	1.85
	=	9.7 HP
Say	=	2.0 10 HP

It is proposed to provide 1 No. of pumping set (1 W + 1S), each pump capacity would be 3 LPS 167 lpm

(ix) Boosting Machinery for fire water

Total Water Requirement

Hydrant pump as per NBC 2016 table No.7	=	2850 LPM, 200/180/130 M Head.
Sprinkler pump as per NBC 2016 table No.7	=	2850 LPM, 200/180/130 M Head.
Jockey pump as per NBC 2016 table No.7	=	180 LPM, 200/180/130 M Head.
Diesel pump as per NBC 2016 table No.7	=	2850 LPM, 200/180/130 M Head.
Curtain pump as per NBC 2016 table No.7	=	4550 LPM, 56 M Head.



Manoj Jewani
M. Teoh (Electrical) (C. Eng (M-1688665))

LAYOUT PLAN FOR GROUP HOUSING COLONY BEING DEVELOPED, OVER LAND ADMEASURING 9.158 ACRES SITUATED IN SECTOR-2, GWAL PAHARI, HARYANA, UNDER LICENSE NO. 98 of 2011 DATED 11.11.2011, BY ADANI INFRASTRUCTURE AND DEVELOPERS PRIVATE LIMITED.

Final ABSTRACT OF COST

S. No.	Description	Amount -Rs.
1	Sub Head I : Water Supply Head Works	521.71 433.76
2	Sub Head II : Sewerage Scheme	118.08 90.98
3	Sub Head III : Storm Water Scheme	179.04 124.20
4	Sub Work IV : ROAD AREA DETAIL	237.97 286.95
5	Sub Head V: Street Lighting	42.16 35.14
6	Sub Head VI : Horticulture	10.28 16.69
7	Sub Head VII : MTC of services & Resurfacing of Road	285.18 308.65
	Total	1394.42 1295.43
	(C.O. to Final Abstract of Cost) Say Rupees	Rs. 1394.42 Lakh 1295.50
		1295.50 lakhs
	COST PER ACRE-	1394.42 / 9.158 ACRES 152.3 Rs 141.46

Director
Town & Country Planning
Haryana, Chandigarh

Executive Engineer
HSVP Division No. V,
Gurugram



Superintending Engineer,
HSVP Circle-I, Gurugram



Checked subject to Comments
In forwarding letter No. 119678
Dt. 07/08/2024 and notes
Attached with the estimate

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



हरियाणा शहरी विकास प्राधिकरण

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

CE-I No. 119678

Dated: 27/05/2024

Annexure-A

SUB:- Approval of service plan estimate of the Group Housing Colony (License no. 98 of 2011 dated 11.11.2011) on area measuring 12.356 acres situated in Sector-2, Gwal Pahari, Gurugram being developed by M/s Adani Infrastructure and Developers 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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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.

LAYOUT PLAN FOR GROUP HOUSING COLONY BEING DEVELOPED, OVER LAND ADMEASURING 9.158 ACRES
SITUATED IN SECTOR-2, GWAL PAHARI, HARYANA, UNDER LICENSE NO. 98 of 2011 DATED 11.11.2011, BY ADANI
INFRASTRUCTURE AND DEVELOPERS PRIVATE LIMITED.

Water Supply

S. No.	Description	Amount -Rs.
1	Sub Head I : Water Works	15377694.00 95.05 lacs
2	Sub Head – II: Pumping Machinery	22728907.00 233.72 lacs
3	Sub Head – III: Rising Main from HUDA	1962881.30 20.70 lacs
4	Sub Head – IV: Domestic Water Supply - Distribution system	2457174.32 16.39 lacs
5	Sub Head – V: Flushing Water Supply - Distribution system	2420034.58 15.36 lacs
6	Sub Head – VI: Fire Rising Main	6280836.49 25.39 lacs
7	Sub Head – VII: Irrigation	1543021.09 27.15 lacs
	Total	52170548.78 433.76 lacs
	(C.O. to Final Abstract of Cost) Say Rupees	Rs. 521.70 Lakh 433.76



Sub Work – 1

Sub Head I : Water Works					
S. No.	Description	Unit	Quantity	RATE	Amount
1	Construction of U.G. tanks ¹⁰³⁵ 1170 KL . Including fire-fighting tanks, domestic and flushing tank <i>Dom. 150 KL + Fire 750 KL + 135 KL for Flushing water tank</i>	KL	1170 ¹⁰³⁵ <i>KL</i>	6000	7020000 <i>56.93</i>
2	Construction of Boosting Chamber of suitable size to accommodate machinery of Boosting Station, Electrical Panel and Standby DG set	LS	1	3000000	3000000 <i>3.61 Lacs</i>
3	Total <i>Prov. for carriage of material & other unforeseen items</i>	2.5			10020000
	Add 3% contingencies & PH charges			<i>61.93</i>	<i>300600</i>
	Total			<i>1.86</i>	10320600
	Add 49% Deptt. Charges, Price Escalation Unforeseen, admin charge			<i>63.79</i>	<i>5057094</i>
	Total			<i>31.26</i>	15377694

SAY Rs. ~~153.78~~ Lacs

(C.O. to abstract of cost of Sub-work No. I)



Sub Work – 1

Sub Head – II: Pumping Machinery					
S. No.	Description	Unit	Quantity	RATE	Amount
1	Provision for diesel engine gen set each for stand bye arrangements for T.W. of booster pump complete with gear head arrangement of following capacities: 180 KVA	kVA	380 ^{100 kVA}	10000 ^(2.1)	3800000 ^{15.0}
2	Providing and installing pumping set of following capacities for fire protections				
	180 lpm at 200/180/130 M head 1 No. @ Rs. 4.00.000/-	Nos	2	200000	400000
	2850 lpm at 200/180/130 M head 1 No. @ Rs. 86.00.000/- (Electrical driven Pump)	Nos	2	860000 ^{20.0}	1720000 ^{40.0}
	2850 lpm at 200/180/130 M head 1 No. DG pump @ Rs. 16.00.000	Nos	2	1600000 ^{20.0}	3200000 ^{40.0}
	4550 lpm at 56 M head 1 No. DG pump @ Rs. 15.00.000	Nos	1	1500000 ^(2.5)	1500000
3	Providing and fixing variable speed drive hydropneumatic domestic water supply pumping set connected to RCC UGT complete with pressure vessel :2 working and 1 standby pump set (each pump 320 ^{320 lpm} 8.5 ^{8.5} lps@170 m head,) -for Domestic water supply (2018)	Nos	3	300000 ^{4.00}	900000 ^{12.0}
4	Providing and fixing variable speed drive hydropneumatic flushing water supply pumping set connected to RCC UGT complete with pressure vessel :1 working and 1 standby pump set (each pump 320 ^{320 lpm} 8 ⁸ lps@140 m head,) -for flushing water supply (2018)	Nos.	2	250,000 ^{4.00}	500000 ^{8.0}
5	Providing and fixing variable speed drive hydropneumatic irrigation water supply pumping set connected to RCC UGT complete with pressure vessel :1 working and 1 standby pump set (each pump 480 ⁴⁸⁰ lpm@30 m head,) -for irrigation water supply 167 (2-0.80)	Nos.	2	320,000 ^{0.40}	640000 ^{0.80}
6	Provision for Chlorination plant complete 1 No. @ Rs. 100000	Nos.	1	100000	100000
7	Provision for making foundations & erection of pumping machinery (LS)	LS	1	400000	400000
8	Provision for pipes, valves & specials inside boosting chamber(LS)	LS	1	500000	500000
9	Provision for electric services connection including electric fittings for boosting chambers etc and cost of transformer(LS)	LS	1	450000	450000
10	Provision for carriage for materials and other unforeseen items L.S	LS	1	300000	300000
	Total				14810000 ^{152.30 lacs}
	Add 3% contingencies & PH charges				444300 ^{4.56 lacs}
	Total				15254300 ^{156.86 lacs}
	Add 49% Deptt. Charges, Price Escalation Unforeseen, charge				7474607 ^{76.86 lacs}
	Total				22728907 ^{233.72 lacs}

Say Rs. 227.28 Lakh

(C.O. to abstract of cost of Sub-work No.I)

Sub Work – 1



Sub Work – 1					
Sub Head – III: Rising Main from HUDA					
S. No.	Description	Unit	Quantity	RATE	Amount
1	Providing, laying, jointing & testing pipe lines including cost of excavation etc. complete in all respects - 100mm dia. DI, K-7	MTR	700	1200	840000
	Provision of fixing of sluice valve, 0.4 P/F indicating plates.	Nos	4	16000	64000
2	Provision for carriage for materials and other unforeseen items	LS	1	25000	25000
3	Provision for making connection with HUDA master line	LS	1	200000	200000
4	Provision for cutting the road and making good the same	LS	1	250000	250000
Total					1279000
Add 3% contingencies & PH charges					38370
Total					1317370
Add 49% Dept. Charges, Price Escalation Unforeseen, charge					645511.3
Total					1962881
SAY Rs. 19.62 Lakh					
(C.O. to abstract of cost of Sub-work No.I)					



Sub Work – 1

Sub Head – IV: Domestic Water Supply - Distribution system

S. No.	Description	Unit	Quantity	RATE	Amount
1	Providing, laying, jointing and testing pipe lines including Fitting, valves, cost of excavation etc. complete in all respects. GI B class-(IS-1239)				
	– GI Pipe 40 mm,	mtr	68	1000	68000
	– GI Pipe 65 mm,	mtr	107	1600	171200
	✓ – GI Pipe 100 mm,	mtr	331 508	2400 14601	794400 742165
2	Provision for carriage of materials and unforeseen items	LS	1	100000	100000
3	Providing and fixing sluice valve including cost of brick masonry chamber complete in all respect.	NOS	6	22000	132000 0.72
4	Providing and fixing scour air release valve complete in all respect (L.S.)	LS	1	20000	20000
5	Providing and fixing Indicating plate - 17 No. @ Rs. 1000/- each	LS	1	20000	20000 0.34
6	Provision for cutting of roads and making goods to its original condition	LS	1	100000	100000
	Total				1405600 10.68 lacs
	Add 3% contingencies & PH charges				42168 0.32 lacs
	Total				1447768 11.00 lacs
	Add 49% Dept. Charges, Price Escalation Unforeseen, admin charge				709406.32 5.39 lacs
	Total				2157174.32 16.39 lacs

~~SAY Rs. 21.57 Lakh~~

(C.O. to abstract of cost of Sub-work No. I)



Sub Work - 1

Sub Head - V: Flushing Water Supply - Distribution system					
S. No.	Description	Unit	Quantity	RATE	Amount
1	Providing, laying, jointing and testing pipe lines including Fitting, valves, cost of excavation etc. complete in all respects- IS B class-(IS-1239)				
	- GI Pipe 32 mm,	mtr	68	800	54400
	- GI Pipe 50 mm,	mtr	107	1400	149800
	- IS Pipe 100 mm,	mtr	378	2400	907200
2	Provision for carriage of materials and unforeseen items	LS	1	100000	100000
3	Providing and fixing sluice valve complete in all respect with cost of brick masonry	LS	6	120000	720000
4	Providing and fixing Indicating plate - 10 No. @ Rs. 1000/- each	LS	1	20000	20000
	Total				1381400
	Add 3% contingencies & PE charges				41442
	Total				1422842
	Add 49% Dept. Charges, Price Escalation Unforeseen, admin charge				697192.58
	Total				2120034.58

~~SAY Rs. 21.20 Lakh~~

(C.O. to abstract of cost of Sub-work No. I)



Sub Work – 1

Sub Head – VI: Fire Rising Main

S. No.	Description	Unit	Quantity	RATE	Amount
1	Providing, Laying, jointing and testing M. S., C Class, (IS-1239) pipes for fire rising main including cost of fittings, valves, connection etc. complete in all respect		65		0.65
	80 NB	mtr	115	1700	196500
	100 NB	mtr	78	2250	175500
	150 NB	mtr	1037	3150	3266550
2	Providing and fixing fire Hydrant with accessories	LS	25	15000	375000
3	Providing for carriage of material	LS	1	50000	50000
4	Providing and fixing Indicating plate	LS	1	30000	30000
	Total				4092550
	Add 3% contingencies & PH charges				122776.5
	Total				4215326.5
	Add 49% Dept. Charges, Price Escalation Unforeseen, admin charge				2065509.985
	Total				6280836.485

~~SAY Rs. 62.80 Lakh~~

(C.O. to abstract of cost of Sub-work No. I)



Sub Work – 1

Sub Head – VII: Irrigation

S. No.	Description	Unit	Quantity	RATE	Amount
1	Providing, laying, jointing and testing HDPE PE100 pipeline including cost of excavation etc. complete in all respect.				6.53 /cs
	PVC pipe 75mm-10 kg/cm ²	Rm	870	7501 322.00	280140.00
	PVC pipe 63mm-6 kg/cm ²	Rm	142	6251 167.87	23794.47
	PVC pipe 50mm-6 kg/cm ²	Rm	530	5801 104.50	55385.00
	PVC pipe 40mm-6 kg/cm ²	Rm	1093	4501 92.50	101102.50
2	Providing and fixing 20 mm dia. irrigation hydrant valve complete in all respect.	NOS	50	3500	525000
3	Provision for carriage of Material and other as foreseen items	LS	1	20000	20000
	Total				1005421.97
	Add 3% contingencies & PH charges				30162.659
	Total				1035584.626
	Add 49% Dept. Charges, Price Escalation Unforeseen, admin charge				507436.4666
	Total				1543021.092

SAY Rs. 15.43 Lakh.

(C.O. to abstract of cost of Sub-work No. I)



Sub Work – 2					
Sub Head II : Sewerage Scheme					
S. No.	Description	Unit	Quantity	RATE	Amount
1	Providing, lowering, jointing and cutting DWC PE pipes (IS:16098-2, SN-8) pipes in to trenches including cost of excavation, bed concrete, including const. of manholes and				5.10 lacs
	a) Size 200 mm OD, Depth 0-2 m BGL	RM	300	1000	300000
	b) Size 250 mm OD, Depth 0-3 m BGL	RM	300	1200 2000	360000 6.0 lacs
	c) Size 300 mm OD, Depth 0-3 m BGL	RM	180	1800 2880	324000 5.18 lacs
2	Provision of lighting and watching ,timbering and shoring	LS	1	100000	200000
3	Provision for cartage of material and cutting of road and making goods to its original condition (L.S.)	LS	1	50000	50000
4	Provision for making connection with HUDA on master road	LS	1	150000 (L.S.)	150000 2.0 lacs
5	Providing STP ²⁰⁰ 320 KLD up to tertiary level treatment complete in all respect	KLD	320 200	20000 16000	6400000 32.0
6	Provision of Vent pipe as per PH requirement at suitable places	LS	1	10000	10000 2.0
	Total				7694000 59.28
	Add 3% contingencies & PH charges				230820 1.78
	Total				7924820 61.06
	Add 49% Deptt. Charges, Price Escalation Unforeseen, admin charge				3883162
	Total				11807982 90.98 lacs

SAY Rs. 118.08 Lakh

(C.O. to abstract of cost of Sub-work No. 1)



Sub Work - 3					
Sub Head III : Storm Water Scheme					
S. No.	Description	Unit	Quantity	RATE	Amount
1	Providing, lowering, jointing and cutting DWC PE pipes into trenches including cost of excavation, manholes, vent shafts etc. complete as per standard sections				
	a) 300 mm dia, depth 0-2 m BGL	RM	220	1800	396000
	b) 400 mm dia, depth 0-2 m BGL	RM	760	180	136800
	c) 500 mm dia, depth 0-2 m BGL	RM	90	150	13500
	d) 600 mm dia, depth 0-2.5 m BGL	RM	250	7300	1825000
	e) 800 mm dia, depth 0-2.5 m BGL	RM	50	13600	680000
2	Provision for road gully & pipe connection (L.S.)	LS	1	50000	50000
3	Provision for lighting and watching (L.S.)	LS	1	100000	100000
4	Provision for timbering and shoring	LS	1	50000	50000
5	Provision for cartage of material and other unforeseen item (L.S.)	LS	1	150000	150000
6	Providing Rain Harvesting arrangements	NOS	14	350000	7000000
7	Provision of connection main HUDA storm water line (L.S.)	LS	1	100000	100000
8	Provision of cutting of road and making the good it to original condition (L.S.)	LS	1	100000	100000
9.	Total		(L.S.)		11666000
	Add 3% contingencies & PH charges				349980
	Total				12015980
	Add 49% Deptt. Charges, Price Escalation Unforeseen, admin charge				5887830.2
	Total				17903810.2

SAY Rs. 179.00 Lakh

(C.O. to abstract of cost of Sub-work No. 1)



124.20 Lacs

Sub Work – 4

Sub Work IV : ROAD AREA DETAIL

ROAD WORKS

S. No.	Description	Unit	Quantity	Rate	Amount
1	Provision for leveling & earth filling as per site conditions 9.158 Acres @ 150000	Acre	9.158	150000 1.75 lacs	1373700 16.03 lacs
2	i) Soling coat 100 mm thick (63-45) mm gauge compacted to 75 mm thick WBM conforming to MOT specification (Table 400-6, Grading No.2) GSB 300 mm ✓				
	ii) Wearing coat (Top coat) 100 mm thick (53-22.4) mm gauge compacted to MOT specifications (Table – 400-6, Grading No. 3) WMM 250 mm ✓				
	iii) 50 mm BM and 30 mm MSS 8677 @ Rs 1200/sq.m. ✓	Sq mtr	8677	1200	10412400 130.16
3	Provision for kerbs & channels of CC 1:2, 5:5,	mtr	2200	600	1320000
4	Provision for making approach and pavement to building, Provision for C.C. Pavement, (L.S.)	LS	1	2000000 (L.S.)	2000000
5	Provision for Traff light arrangement (L.S)	LS	1	200000	200000
6	Provision for carriage of material & other unforeseen	LS	1	200000 (L.S.)	200000
	Total Items				15506100
	Add 3% contingency & P.E. Charges				186.39 465183
	Total				5.59 15971283
	Add 49% dept. charges, unforeseen, price escalation, admin charges				191.98 7825928.67
	Total				94.07 23797211.67

286.05 lacs

~~SAY Rs. 237.98 Lakh~~



Sub Work – V

Sub Head V: Street Lighting

S. No.	Description	Unit	Quantity	Rate	Amount
1	Providing lighting at surrounding area as per standard specifications of HVPN 9.158 acres @ Rs. 300000 /acres (with LED)	ACRE	9.158	300000 22.90 lak	2747400 208222
	Add 3% contingencies & P.E. Charges				82422
	Total				2829822 23.58
	Add 49% departmental charges, unforeseen, price escalation, admin charges				1386613 11.56
	Total				4216435 35.14 lak

Say Rs. ~~42.16 Lakhs~~

C.O. to final abstract of cost



Sub Work – VI

Sub Head VI : Horticulture

S. No.	Description	Unit	Quantity	Rate	Amount
1	Development of Lawn Areas				
	a) Trenching of ordinary soil upto depth of 60 cm i/c removal & stacking of serviceable material & disposing by spreading and leveling within a lead of 50 M and making up the trench area for proper levels by filling with earth mixed with manure before and after flooding trench with water i/c cost of imported earth and manure.				
	b) Rough dressing of turfed area				
	c) Grassing with selection No. 1 grass including watering and maintenance of the lawn for 60 days or more till the grass forms a thick lawn, free from weeds and fit for mowing including supplying good earth, if needed (the grass and earth shall be paid for seperately) in rows 5cm apart in both directions @ Rs. 10.40/sq.m.				
	d. approx. 2.14 acres organized green @ Rs. 150000/acre	Acre	2.14	150000	321000.00
2	Providing and planting trees along boundary @ 6 m interval No of trees along Boundary wall = 141 nos. Road length up to 6M wide = 1150 Road length above 6M wide = 0 No. of trees (1150/6) = 191 No. Cost details: Excavation = 30 60.00 Manure = 60 100.00 Tree Plant = 60 150.00 Tree Guard = 600 2000.00 Total Rs. = 1050 2310.00 41+191 Trees @ Rs. 1050/- Each Total 2- Add 3% contingencies & P.H. Charges Total 11.20 Add 49% departmental charges, unforeseen, price escalation, admin charges. Total 5.49	Nos each	332 Nos	1050 2310/-	348600.00 7.67 lacs 10.88 669600.00 0.32 20088.00 689688.00 337947.12 4027635.12

~~Say Rs. 10.27 Lakhs~~

[Signature]

[Signature]
A.P. Kukreja Architects
New Delhi-110014

16.69 lacs

Sub Work – VII

Sub Head VII : MTC of services & Resurfacing of Road

S. No.	Description	Unit	Quantity	Rate	Amount
1	MTC of water supply, sewer, storm water drain, roads, street light, hort, etc., for period of 10 years including operation charges full establishment etc., complete in all respects	Acre	9.158	750000 8.00 /os	6868500 72.26 /os
2	Provision for resurfacing of roads after 5 years i.e. 40mm DBM 40 mm BC	Sq Mtr	8677	600 660/-	5206200 57.27 /os
3	Provision for resurfacing of roads after 10 years i.e. 40 mm MMBC	Sq Mtr	8677	750 825/-	6507750 71.59 /os
	Total				18582450
	Add 3% contingencies @ P E Charges				557473.5 201.12
	Total				19139923.5 6.03
	Add 49% department charges, unforeseen, price escalation, Admn. charges				9378562.515 207.15
	Total				28518486.02 101.50

308.65

SAY Rs. ~~285.40~~ Lakhs

