

Directorate of Town & Country Planning, Haryana

SCO-71-75, 2nd Floor, Sector-17-C, Chandigarh, Phone: 0172-2549349

Web site: tcp.haryana.gov.in - e-mail: tcp.haryana@gmail.com

Regd.

To

Ashiana Dwelling Pvt. Ltd.,
3h, Phase M6, District Centre,
Jasola, New Delhi-110025.

Memo. No. LC-2017/PA(SN)-2017/ 18756 Dated: 2-08-2017

Subject: Approval of Service Plan/Estimates in respect of Residential Group Housing colony on the land measuring 10.25 acres under Licence No. 16 of 2014 dated 10.06.2014 in Sector 2, Sohna, District Gurugram - Ashiana Dwellings Pvt. Ltd.

Kindly refer your application on the subject noted above.

The Service Plans/Estimates in respect of Licence No. 16 of 2014 dated 10.06.2014 granted for setting up Residential Group Housing colony over an area measuring 10.25 acres in Sector 2, Sohna, District Gurugram have been checked and corrected wherever necessary by the Chief Administrator, HUDA & are hereby approved subject to the following terms and conditions:-

1. That you will have to pay External Development Charges as a full and no deduction on account of any services proposed from other Department/from own sources by the colonizer for the time being, as EDC works for a town as a whole will have to be got executed in view of overall planning, proposed area also covered/to be covered in EDC, Gurgaon Town, which is under finalization.
2. The category wise area shown on the plans and proposed density of population thereof has been treated to be correct for the purpose of services only.
3. That you are liable to maintain the licensed area for ten years or as per HUDA norms till such time, the colony is taken over by the local authority/State Govt.
4. The wiring system of street lighting will be under ground and the specifications of the street lighting fixture etc. will be as per relevant standard of HVPNL, LED lamps shall be provided to meet the requirement of HVPNL and as well environment.
5. It is made clear that appropriate provision for fire-fighting arrangement as required in the NBC/ISI should also be provided by you and fire safety certificate should also be obtained from the competent authority before undertaking any construction. You shall be sole responsible for fire safety arrangement.
6. All technical notes and comments incorporated in the estimates in two sheets will also apply. A copy of these is also appended as Annexure-A.
7. The correctness of the levels of the colony will be sole responsibility of the owner for integrating the internal sewer/storm water drainage of the colony by gravity with the master services.
8. That level/extent of external services to be provided by HUDA will be in accordance with EDC deposited. The colonizer will be fully responsible to meet the demand, to dispose of effluent and rain water till these services are provided by HUDA.
9. You shall be sole responsible for disposal of sewage of your colony as per requirement of HSPCB/Environment Deptt. till such time the external services are made available as per the proposal of the town. All the link connections with the

external services shall be made by you at your own cost after seeking approval from competent authority. There should be no pollution due to disposal of sewerage of the colony. The disposal of the effluent should be accordance to the standard norms fixed by Haryana State Pollution Board/Environment Department.

10. The estimate does not include the provision of electrification of the colony. However, it is clear that the supervision charges and O&M charges shall be paid by you directly to the HVPNL.
11. That you shall be solely responsible to lay the services upto the external services laid/to be laid by HUDA or any developing agency on Sector dividing road at respective locations/points
12. You have proposed to utilize recycled water for flushing purposes and provision of separate flushing line, storage tank, metering system, pumping system and plumbing has been made. Therefore, it is clarified that no tap or outlet of any kind will be provided from the flushing lines/plumbing lines for recycled water except for connection to the cistern of flushing tanks and any scouring arrangement. Even ablution taps should be avoided.
 - (i) Two separate distribution systems, independent to each other, will be adopted, one for potable water supply and second for recycled water. Every Home/Office/business establishment will have access to two water pipe lines.
 - (ii) Potable water and recycled water supply lines will be laid on opposite berms of road. Recycled water lines will be above sewer lines. Wherever unavoidable and if all pipes are required to be laid on same side of road, those will be located from the ground surface in order of descending quality. Potable water shall be above recycled water which should be above sewer. Minimum clear vertical separation between a potable water line and a recycled water line shall be one ft. if it not possible then readily identifiable sleeve should be used.

To avoid any accidental use of recycled water for potable purposes all:-

- (a) Recycle water pipes, fitting, appurtenances, valves, taps, meters, hydrants will be of Red Colour or painted red.
 - (b) Sign and symbols signifying and clearly indicating "Recycle Water" "Not fit for Drinking" must invariably be stamped/fixed on outlets, Hydrants Valves both surface and subsurface, Covers and at all conspicuous places of recycle distribution system.
 - (c) Detectable marker tapes of red colour bearing words "Recycle Water" should be fixed at suitable interval on pipes.
 - (d) Octagonal covers, red in colour or painted red and words "Recycle Water-Not fit for Drinking" embossed on them should be used for recycled water.
13. That it shall be mandatory to provide dual/two button or lever flushing system in toilets.
 14. You shall be sole responsible for the construction of various structures such as RCC underground tank etc. according to the standard specification good quality and its workmanship. The structural stability responsibility will entirely rest upon you.
 15. In case some additional structures are required to be constructed and decided by HUDA/development agency at a later stage, the same will be binding upon you.

Flow of control valves will be installed preferably of automatic type on water supply connection with main water supply line, laid by developing agency or HUDA.

16. The formation level of internal road should match with sector roads. Similar other services like water supply, sewerage and SWD level etc. should be fixed in integration of levels of EDC services of water supply, sewerage and SWD etc. which shall be ensured by you.
17. In case it is decided by Govt. that HUDA/Govt. will construct 24 m wide road and will extend master services on 24 m wide internal circulation road, then additional amounts at rates as decided by the Authority/Govt. will be recoverable over and above EDC.
18. Since, the construction of master plan is yet to take place, you will get the road level/formation level of your service fixed from the concerned Superintending Engineer, before execution.
19. This estimate does not include the common services like water supply, storage tank on the top of the building block, the plumbing works etc. will part of the building works.
20. You will have to ensure that the sewer/storm water drainage to be laid by you will be connected with the proposed existing master services by gravity. If it is not possible to connect the services by gravity, it will be your sole responsibility to make the pumping arrangement and maintenance thereof for all the time to come.
21. That you shall not make any connection with the master services i.e. water supply, sewerage, storm water drainage, without prior approval of the competent authority in writing.
22. That the detailed technical proposal/scheme shall be got approved from this office before execution of work at site.
23. The firm will provide solar water heating system as per the guidelines issued by Haryana Govt./Ministry of Environment/Govt. of India.
24. It is made clear that roof top rain harvesting system shall be provided by you as per Central Ground Water Authority norms/Haryana Govt. Notification and the same shall be kept operational/maintained all the time. The arrangement for segregation of first rain water not to be entered into the system shall also be made by you.
25. That you shall transfer the land under master plan road as well as service road to Govt./HUDA for construction of road/service road free of cost and proportionate cost for construction of service road shall also be paid by you.

NOTE(1)-

In order to implement the directions given by National Green Tribunal dated 24.11.2014, 04.12.2014 and 19.01.2015 in original Application No. 21 of 2014 in the matter of *Common Cause v/s Union of India and Ors.*, the following instruction issued vide letter No. 2613 dated 2.3.2015 be incorporated for implementation at site as under:-

- a. It shall be ensured that there should be no hot mixing on the road side. During construction and maintenance of road, it shall be also ensure that coal tar, bitumen and asphalt is brought in molten condition and same is neither burnt nor fire is put to melt these substances on open roads.

- ii) The demolition material and construction material is transported with proper coverage and precautions, in order not to cause serious air pollution.
- iii) No Govt. authority, contractor, builders would be permitted to store and dump construction material or debris on the metalled road.
- iv) Such storage does not cause any obstruction to the free flow of traffic and/or inconvenience to the pedestrians. Every builder, contractor or person shall ensure that the construction material is completely covered by tarpaulin. To ensure that no dust particles are permitted to pollute the air quality as a result of such storage.
- v) The builder/contractor will be responsible and ensure that their activity does not cause any air pollution during the course of the construction and/or storage of material or construction activity. Defaulter shall be liable to be prosecuted under the law in force.
- vi) All trucks or vehicles of any kind which are used for construction purposes and/or are carrying construction materials like cement sand and other allied material shall be fully covered dust free and/or other precautions would be taken to ensure that enroute their destination, the dust, sand or other particles are not permitted to be released in the air and/or contaminate air. Any truck which is not complying with these directions would not be permitted to enter in the NCR region.

NOTE(2):-

Implementation of instruction used by Hon'ble NGT during hearing held on 26.12.2015 in OA No. 21 of 2014 and OA No. 95 of 2014 in the matter of Yashwantrao Kachik V/s Union of India and Ors, the following instruction issued vide letter No. CEES-W/CHD/G/4971-89 dated 30.4.2015 shall be complied with in the construction work as under:-

- a. All the direction contained in our order dated 4th December, 2014 shall continue to be in force and the Authorities concerned would carry out the said directions in their true spirit and substance.
- b. There shall be complete prohibition of burning of any kind of garbage leaves, waste plastic, rubber, self-moulding compound and such other materials in the open. Any person affected or concerned would have a right to make a complaint in writing.
- c. NGT further directed that all the Corporations of concerned states falling in NCR would notify on their websites, address and Mobile number to which such complaint can be made.
- d. Immediately upon receipt of such complaint, the concerned Authority and/or Authorities the designed Officers would proceed to take action in accordance with law.
- e. For every incident of burning of any such above stated material, the person who is found actually burning such and/or responsible for or abating such burning would be liable to pay compensation in terms of the Section 15 of the Nation Green Tribunal Act, 2010 for polluting the environment and would be liable to pay a sum Rs. 5000/- (to be paid instantaneously).
- f. In the event such offender refuses to comply with the directions of the Authorized Officers, the Authorized Officers would be at liberty to serve a notice upon him for appearing before the Tribunal and to show cause why the person burning, abating or responsible for such burning materials as are indicated, be not directed to pay compensation as may be determined by the Tribunal in accordance with law.
- g. The orders of the NGT are to be complied with as a decree / order of the Civil Court. All these Authorities and the Police are duty bound to carry out the directions/orders of the Tribunal in accordance with law. The money so collected, shall be maintained by the Corporation and / or any Authority as a separate fund to

be utilized for improvement, restoration and restitution of the environmental degradation resulting from such activity or otherwise.

7. The payment of such compensation shall not absolve the offender of other liabilities that such person may incur under different laws in force including other provisions of the National Green Tribunal Act, 2010.
8. NGT has directed that there is no burning of leaves or horticulture residue. All the Corporations, Authorities and the State Governments to ensure that there is proper composting pits area-wise prescribed within one week from today (28.04.2015). The composting will be only at those sites and all the Corporations, Authorities and the State Governments shall be responsible to provide due space for collection and deposit of horticulture waste including leaves for composting purposes at these sites.
9. Each officer under whose jurisdiction the area would fall, would be personally responsible for imposition of compensation and costs.
10. The composition sites should be provided nearer to the places where there is large numbers of trees, gardens and compost bins which also convert into self-manure should be used for horticulture purposes to ensure that the burden on the site does not increase beyond its capacity.
11. Decisions in regard the land fill sites should be taken expeditiously as possible. Such adequate number of sites if not earmarked, should be identified by the respective corporations and authorities if not done so far.
12. No one would permit the loading of plastic and allied products in NCR area. If authorities notice any burning of such materials they would not only ensure that such activity does not persist, but even would be entitled to seize the entire material which is illegally and unauthorized stored/held by a person who does not possess of a license or authorization for dealing with such products in accordance with the plastic waste Management and Handling Rules, 2011. Upon seizure of such material, the authorities would take a direction from Hon'ble NGT and dispose of the same by giving it to the authorized dealer in accordance with the directions issued.

A copy of the approved service plan/estimates is enclosed herewith. You are requested to supply three additional copies of the approved service plan/estimates to the Chief Administrator, HUDA, Panchkula under intimation to this office.
DA/As above

(Sanjay Kumar)
District Town Planner (HQ)
For Director, Town & Country Planning
Haryana, Chandigarh

Encl. No. LC-2817-PN(SH)-2017

Dated :

A copy is forwarded to the Chief Administrator, HUDA, Panchkula with reference to his memo No. CE-1/EE(W)/CHD(G)/2015/11311 dated 23.08.2015 for information and necessary action please.

(Sanjay Kumar)
District Town Planner (HQ)
For Director, Town & Country Planning
Haryana, Chandigarh

Subject: Approval of Service Plan / Estimate of Group Housing Colony of 10.25 Acres (License No. 16 of 2014 dated 10.06.2014) Village-Sohna, Sec-2 of Sohna, Gurgaon (M/s PSL Infratech Pvt. Ltd.).

Implementation of instructions issued by Hon'ble NGT during hearing held on 28.04.2015 in OA No. 21 of 2014 and OA No. 95 of 2014 in the matter of Vardhman Kaushik V/s Union of India & ors, shall be complied with in the construct work:-

1. All the direction contained in our order dated 04th December, 2014 shall continue to be in force and the Authorities concerned would carry out the said directions in their true spirit and substance.
2. There shall be complete prohibition of burning of any kind of garbage leave, waste plastic, rubber, self-moulding compound and such other materials in the open. Any person affected or concerned would have a right to make a complaint in writing of otherwise to the SHOs of the concerned area, the office of the Corporation, Council or Local Authority under whose jurisdiction that area falls. NGT has directed that every public Authority, Corporation, State Governments of NCT of Delhi, Uttar Pradesh and Haryana to forthwith notify the telephone numbers, website addresses or any other electronic media and process to which the complainant can make a complaint to any or all of the Authorities as indicated herein above. The Complaints preferably should be made to the Authorities concerned who have jurisdiction over the area in which the offending activities is being carried on has been carried on.
3. NGT further directed that all the Corporations concerned states falling in NCR within two days from 28.04.2015 would notify on their websites. The website address and Mobile Number to which such complaint can be made/sent.
4. Immediately upon receipt of such complaint, the concerned Authority and /or Authorities the designed Officers would proceed to take action in accordance with law.
5. For every incident of burning of any such above stated material, the person who is found actually burning such and/or responsible for or abating such burning would be liable to pay compensation in terms of the Section 15 of the Nation Green Tribunal Act, 2010 for polluting the environment for imposed compensation / penalty.
6. In the event such offender refuses to comply with the directions of the Authorized official /officers, the Authorised Officers would be at liberty to serve a Notice upon him for appearing before the Tribunal and to show cause why the person burning, abating or responsible for such burning materials afore indicated, be not directed to pay compensation as may be determined by the Tribunal in accordance with law.
7. The orders of the NGT are to be complied with as a decree/order of the Civil Court. All these Authorities and the Police are duty bound to carry out the directions/orders of the Tribunal in accordance with law. The money so collected, shall be maintained

by the Corporation and /or any Authority as a separate fund to be utilized for improvement, restoration and restitution of the environmental degradation resulting from such activity or otherwise.

8. The payment of such compensation shall not absolve the offender of other liabilities that such person may incur under different laws in force including other provisions of the National Green Tribunal Act, 2010.
9. NGT has directed that there is no burning of leaves or horticulture residue, all the Corporations, Authorities and the State Governments to ensure that there is proper composting pits area-wise prescribed within one week from today (28.04.2015). The composting will be only at those sites and all the Corporations, Authorities and the State Governments shall be responsible to provide due space for collection and deposit of horticulture waste including leaves for composting purposes at these sites.
10. Each officer under whose jurisdictions the area would fall, would be personally responsible and all the Officers, Officials working under him would be personally responsible for imposition of compensation and costs. If any activity is carried out in any area of NCR of Delhi in violations to the Orders of the Tribunal and the law in force in that regard, the Deputy Commissioners, Director Horticulture, SHO concerned, Assistant Commissioners, Sanitary Officers of the area would be personally responsible.
11. The composting sites should be provided nearer to the places where there is a large numbers of trees, gardens and compost pits which also convert into self-manure should be used for horticulture purposes to ensure that the burden on the site does not increases beyond its capacity.
12. Decision in regard the land fill sites should be taken expeditiously. Such adequate number of sites if not earmarked, should be identified by the respective Corporations and Authorities if not done so far.
13. No one would permit the burning of plastic and allied products in NCR area. If Authorities notice any burning of such materials they would not only ensure that such activity does not persist but even would be entitled to seize the entire material which is illegally and unauthorisedly stored held by a person who does not possess of a license or authorization for dealing with such products in accordance with the Plastics Waste Management and Handling Rules, 2011. Upon seizure of such material, the Authorities would take a direction from the Tribunal and dispose off the same by giving it to the Authorized Dealer in accordance with directions issued.

Sub:

**Approval of Service Plan / Estimate of Group Housing Colony of 10.25 Acres
(License No. 16 of 2014 dated 10.06.2014) Village-Sohna, Sec-2 of Sohna,
Gurgaon (M/s PSL Infratech Pvt. Ltd.).**

In compliance of orders passed by Hon'ble NGT Court in Application No.45 of 2015 & M.A No.126 of 15 titled as Haryali Welfare Association v/s State of Haryana Gurgaon, a minimum soil ground area of 1.25 M x 1.25 M around the tree / plant shall be provided & shall be left un-concreted, widening of road upto trunk of trees shall be avoided and all other activities which adversely affect the roots shall not be done. Trees shall not be misused for anchoring electric wires.

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

BOOSTING STATION

The boosting station is being planned near underground storage tank catering to above requirement.

DISTRIBUTION SYSTEM

The distribution system for this development has been designed to supply @ 172.50 liter per head per day @ 3 times the average rate of flow on Hazen William formula. Necessary provision for laying CI/DI pipes conforming to relevant IS standard along with valves and special has been made in the project. The minimum terminal head at any point will be more than 90 Mtrs. so that it can be serve the G+18 floors construction envisaged in the plan. Minimum pipe dia. for distribution is kept as 100 mm dia.

RISING MAIN

Raising main from HUDA water main or sector road to water work have also been proposed as provision has been made in this estimate.

SEWERAGE SCHEME

This scheme has been designed for sewer connecting to STP & over flow of STP connected to HUDA sewer main. The sewerage system has been marked on respective plans.

The 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 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. Necessary provision for laying S.W./R.C.C. pipe sewer line, construction of required number of manholes etc. has 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

Since the Master Scheme has been proposed with pipe drain, we proposed to lay pipe drains with required number of catch basins for disposal of storm water. The intensity of rain fall has been taken as $\frac{1}{4}$ " per hour. A minimum size of 400 mm dia NP3 pipe storm water pipe will be provided and designed as per Manning's formula.

FIRE

As per N.B.C. (National Building Code), fire tanks & required capacity pumps have been provided the plan as shown on the plan. Similarly irrigation pumps of required capacity provided as shown on the plan.

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

SPECIFICATIONS

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

ROADS

The roads in the colony have been planned as minimum 6 M wide. The following specification have been adopted which are reproduced below:

The specification of 6M wide roads:

1. GSB-300 mm in one layer.
2. WBM-250 mm in Two layer.
3. DBM-50 mm thick.
4. ~~MSS-200~~ ⁴⁰ mm thick. ~~SDC~~

The above construction shall be done on well compacted sub grade as per specifications. Complete work will be carried out as per MORTH specification, IRC guide lines or HUDA specification, which ever applicable.

STREETLIGHTING

Provision of lighting on surrounding area has been made.

HORTICULTURE

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

RATES

The estimate has been prepared based on the present market rates.

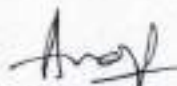
COST

The total cost of the scheme, including cost of all services works out to Rs. ^{1158.30} ~~547.22~~ Lacs Including 3% contingencies and 49% departmental charges, price escalation & other unforeseen charges.

M/s PSL INFRA TECH (P) LTD



(Authorized Signatory)


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

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)
TOTAL WATER REQUIREMENT

(I) DAILY WATER REQUIREMENT

A Residential blocks

a) Tower A1 - G+13	=	55 Units
b) Tower A2 - G+13	=	55 Units
c) Tower A3 - G+13	=	55 Units
d) Tower A4 - G+13	=	55 Units
e) Tower B1 - G+17	=	70 Units
f) Tower B2 - G+17	=	70 Units
g) Tower C1 - G+18	=	75 Units
h) Tower C2 - G+18	=	75 Units
i) Tower C3 - G+18	=	75 Units
j) Tower C4 - G+18	=	75 Units
Total	=	660 Units
@5 Persons/Unit	=	3300 Persons

B EWS

Service Persons = 117 units @ 5 person = 585 person	=	147 Units
Total B	=	68 Units
@ 2 Persons/Unit = 68 Nos @ 2 person = 136 person	=	185 Units
	=	370 Persons
	=	721 person
Total population (A+B) = 3300 + 721 = 4021 person	=	3670 Persons
@172.50 LPCD (1)	=	633075 Liters/ Day
	=	6 93 622.50

C Commercial

a) Community Building (Club + Swimming Pool)	=	25000 40000 Liters/day
b) Nursery Schools - (L.S.)	=	10000 5000 Liters/day
c) Shopping - 336 sqmt @ 3 sqmt / person @ 15 LPCD	=	1680 Liters/day
d) Maintenance Staff (Such as Gardener, ESS Staff, Security Guards etc.)	=	25 Persons
@45 LPCD	=	1125 Liters/day
e) Back Wash Filters - L.S.	=	10000 Liters/day
f) Floating Population 10% of Population	=	367 Persons
@ 15 LPCD	=	5505 Liters/day
Total Commercial	=	33340 Liters/day
	=	35000

D Horticulture & Road Work

a) Area under park 6862 sqmt. @ 5 Liters / sqmt.	=	34310 Liters/day
b) Area under road 10% of 10.25 acres @ 25 KL/Acre	=	25625 Liters/day
Total	=	59935 Liters/day
Or Say	=	59935 Liters/day

The demand of Horticulture & Road work will met from recirculated water after treatment at S.T.P.

Total Water demand (A TO C)

Total Water demand (KLD)

Or Say

728 622.50
~~666385~~ Liters/day
 728.62 ~~666.39~~ KLD
~~670.00~~ KLD
730.00

Domestic water demand 65% of AV/WD of (A+B) +35% = 463.10
of [C(b+c+d+f) + 100% of C(a+e)] ~~436.17~~ Liters/day
Domestic water demand (KLD) = 463.10
Or Say = ~~436.17~~ KLD
= ~~440.00~~ KLD
 465.00

Flushing water demand 35% of AV/WD of (A+B) +65% = ~~230228~~ Liters/day
of [C(b+c+d+f)] 265 KL
Flushing water demand (KLD) = ~~230.23~~ KLD
Or Say = ~~230.00~~ KLD
 265

Sewage Treatment Plant Capacity

Average Sewerage Contribution Considering 80% of AV = 610 KLD
domestic water demand & 90% of AV/Flushing demand ~~559000~~ Liter / Day

Sewage Treatment Plant Capacity (KLD) = ~~559.00~~ KLD
Or Say = ~~560.00~~ KLD
 610

Sewage scheme

Peak discharge @3 times of sewage discharge plus sub = 1747000 Liters
soil infiltration @ 10% of total water demand
= 388222 GPD
= 0.719 Cusces

Hence 300 mm dia pipe having design capacity 0.945 cuses is sufficient to carry the above discharge

**PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2,
(ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)**

(I) BOREWELLS

Approx. discharge of borewells @ 18 KL/hour and working 16 hours/day

(a) Total water demand = KLD	= 440.00 ⁴⁶⁵ KL
(b) Number of borewells ⁴⁶⁵ 440 / (18 x 16)	= 1.53 ^{1.61}
Add 10% extra	= 0.15
Total	= 1.68 ^{1.61}
Say	= <u>2 Nos</u>

So, it is proposed to provide 2 Nos. of tube wells. Moreover, the water demand for horticulture purposes is to met from recirculated water after treatment at STP and ultimate water supply is to provided by HUDA.

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

(II) Pumping Machinery for Borewell

Gross working Head (G+18) = 10+18x4	=	82.0 Meters
Average Fall in S.L.	=	5.0 Meters
Depression Head	=	5.0 Meters
Friction loss in main + Positive head	=	10.0 Meters
Total	=	102.0 Meters
Or Say	=	105.0 Meters

$$\text{Pump HP} = \frac{18000 \times 105 \times 100}{60 \times 60 \times 75 \times 60} = 11.67$$

Or Say 10.00 H.P.
40.00 H.P.
12.50

(III) Under Ground Water Tanks

a) Total Domestic Water Demand	=	465
Storage (Equal to Half day)	=	436.157 Liters/day
Or Say	=	232.58
	=	248.08 KLD
	=	220.00 KLD
	=	2.50

Fire Tank provided as per N.B.C. = 200.00 KLD
2.00

But it is proposed to construct an underground tank of ²⁵⁰220 KLD having ¹²⁵140 KLD for treated water, ¹²⁵440 KLD as raw water, and 200 KLD for fire fighting purpose as per location shown on plan i.e. Total ¹²⁵480 K.L.D.

(IV) Boosting Machinery

a) For Under Ground Tank		
Total water demand (Domestic)	=	465
Pumping 6 hour pumping	=	440.00 KLD
Or Say	77.50 KLD	1222.22 LPM 1291.67
	=	1225.00 LPM LPM
	=	1300
	=	1300/2 = 650 LPM
Gross Working Head <i>2 Pump working other one as standby</i>		
- Suction lift	=	3.00 Meters
- Delivery head	=	5.00 Meters
- Frictional loss in Mains & Specials+ Positive head	=	7.00 Meters
- Clear head required (G+18) = 10+18x4	=	82.00 Meters
Total	=	97.0 Meters
Or Say	=	100.0 Meters

$$\text{Pump HP} = \frac{650 \times 1225 \times 100 \times 100}{60 \times 75 \times 60} = 24.07$$

Or Say 38.89 H.P.
25.00
40.00 H.P.

It is proposed to provide 3 nos. of motors of 25 HP sets of 620 LPM discharge at 100 M head (Two pump are working and one as standby for domestic supply & generator set of same capacity in case of electric failure) for domestic purpose.

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

- b) Flushing water supply requirement
- (i) AV water demand = 666385 liters/day
- (ii) Flushing water supply demand @35% of (A+B) + 65% of [C(b+c+d+f)] = 230228 liters/day
- Flushing water demand (KLD) = 230.23 KLD
- Or Say = 230.00 KLD
- Pumping per hour @ 6 hour pumping (L.P.M) *Head .* $\frac{265}{60 \text{ kW}}$
- LPM = $\frac{230 \times 1000}{60} = 3833.33 \text{ LPM}$
- Say $\frac{455}{60 \times 75 \times 100} = 100.00 \text{ LPM}$
- Pump HP = $\frac{640 \times 100 \times 100}{60 \times 75 \times 100} = 14.22 \text{ HP}$
- Or Say *Working 2 pump other one as standby. 54.16 KWH or 902.77 LPM 20.32 H.P. 16.85 25.00 H.P. 451.39 LPM*
- It is proposed to provide 3 nos. of motors 17.50 HP sets of 320 LPM discharge at 100 m head (Two pumps working & one pump stand by & generator set of same capacity in case of electric failure.)

(V) Irrigation Pumping

- a) Plot Area = 10.25 Acres
- = 41481.75 Sqmt
- Water Demand of Horticulture + Road Area = 59935.00 LPD
- 6 Hours Pumping = 166.49 LPM
- Say = 170 LPM
- Head = 35 Mtr.
- Pump HP = $\frac{170 \times 35 \times 100}{60 \times 75 \times 70} = 1.89 \text{ H.P.}$
- Or Say = 2.00 H.P.

It is proposed to provide 2 nos. of motors of 2.00 HP sets of 170 LPM discharge at 35 M head (One pump are working and one as standby & generator set of same capacity in case of electric failure.)

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

(VI) PUMPS FOR FIRE PROTECTION

S. No.	Parameters	Location	Pump sets		
			Jockey	Main	Diesel
1	Discharge in lpm	Pump Room	280 lpm	2850 lpm	2850 lpm
2	Head in metre		105	105	105
3	HP		15	120	120
4	Quantity in nos.		2	2	1

(VII) GENERATING SETS

S. No	Equipment	QTY	HP	Total HP	
1	Borewell	2	12.50		
2	Fire Jockey pumps	1	15.00	15.0	
3	Booster Pump (for domestic) + Flushing+ irrigation pump	2 + 2 + 1	40 + 25 + 12.50	77.5	
	Total			92.5	
			93.25	76.09	KW
	Diversity 0.8 & Power factor 0.8		139.88	118.89	KVA
	Or Say			125.00	KVA

It is proposed to add ¹⁵⁰125 KVA capacity for above said machinery to the main DG set.

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

FINAL ABSTRACT OF COST

Sub Work	Description	Amount	
		(Rs.) in Lacs	
I	Water Supply Scheme	Rs. 264.21	65
II	Sewerage Scheme	Rs. 178.00	65
III	Storm Water Drainage	Rs. 64.46	65
IV	Roads	Rs. 258.41	65
V	Street Lighting	Rs. 39.33	65
VI	Horticulture	Rs. 5.87	65
VII	Maintenance Charges for 10 Years including Resurfacing of Roads after 1st 5 year & 11nd 5 years of mtc		
	Total (in Lacs)	Rs. 347.99	65
		Rs. 1158.27	65

M/s PSL INFRATECH (P) LTD

(Authorized Signatory)

ANUJ TEVATIA
B. Arch. (Hons.), M.C.A.
CA/95/18739

Cost per Acre $\frac{1158.30 \text{ Lacs}}{10.25 \text{ Acre}} = 113.00 \text{ Lacs per Acre}$

SDE XI
HUDA GGN

Superintending Engineer,
HUDA, Circle II, Gurgaon

Executive Engineer
HUDA Divn. No. VI
Gurgaon

Director
Town & Country Planning
Haryana, Chandigarh

Checked subject to comments
in forwarded letter No. 11311
Dt. 22/11/15 and notes attached
with the estimate

Executive Engineer (W)
for Chief Engineer
HUDA Panchkula

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

Sub Work No.]		Water Supply	
Sub Head	Description	Amount	
		(Rs.). In lacs	
1	Head Works	Rs 95.78 lacs	61.40 38.00
2	Pumping Machinery	Rs 72.13 lacs	78 38.00
3	Rising Main	Rs 3.00 lacs	9 1.67
4	Distribution System (Dorm + Plumbing)	Rs 54.25 lacs	56.70 32.45
5	Fire Fighting	Rs 35.19 lacs	41.50 22.76
6	Irrigation	Rs 3.86 lacs	15.82 8.97
Say (In Lacs)		Rs 264.21 lacs	148.35 260.42

SDE XI
HUDA GGN

c.o to final abstract of cost

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

Sub Work No-1						Water Supply	
Sub Work No-01						Head Works	
SI No	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs.)	
1	Boring and installing 200 mm i/d tubewell with reverse rotary rig complete with pipe and strainer to depth of about 80 m in all respect 2 Nos. @ Rs. 3,50,000/- each	2	x	7,00,000 3,50,000 10.00	Rs.	14.00 7.00 20.00	105
2	Provision for Rising Main connecting Bore well with water main and by-pass arrangement						
2.1	100 mm dia G.I. Pipe D.I.K.9	100		9.00		0.90	
2.2	100 mm dia G.I. Pipe D.I.K.9	25	x	120/- 600	Rs.	1.25	0.45
3	Providing Boosting arrangement by pumps (10 HP) (capacity 300 lpm at 105 M head, 2 nos. @ Rs. 50,000/- each (for Tube Well) 12,50,000	2	x	2,50,000 12,50,000	Rs.	4.00	4.00
4	Providing Boosting arrangement by pumps 20 HP, capacity 620 LPM at 100 M head, 3 nos. each & @ Rs. 4,00,000/- each (For UGT) complete with panel, foundation etc.	(2W+1S-14) 3 Nos	x	2,50,000 12,00,000	Rs.	7.50	7.00
5	Provision for carriage of materials and other unforeseen items	1	x	50000	Rs.	0.50	0.50
6	Construction of U.G. tanks of total cap. 450 KL including 200 KL capacity for fire and 150 KL for flushing near STP	600/- 420	x	3500 3000	Rs.	14.30	12.00
7	Provision for borewell chamber of size 1.5 x 1.5 m For Housing borewell 2 Nos. @ Rs. 35,000/- each	2	x	70,000 35,000 1.00	Rs.	2.00	0.70
TOTAL							
Add 3% contingencies & P.C. charges				62.41 Lacs	Rs.	39.98	25.32
TOTAL				1.87 Lacs	Rs.	7.30	0.70
Add 49% Department charges, Price Escalation & other unforeseen Charges.				64.20 Lacs	Rs.	44.18	26.08
TOTAL COST				31.50 Lacs	Rs.	20.18	12.70
				95.78 Lacs	Rs.	61.37	38.86
							Say 61.40 Lacs

4(a) Boosting arrangement by Pump 17.50 HP

capacity 655 Lpm at 100 m head, 3 nos

Material statement of Borewell Rising Mains (2W+1S-14) for flushing complete in all respects

3 Nos @ Rs. 2.00 Lacs

Rs. 6.00 Lacs

S. No.	Name of line	Length of 80 mm dia. pipe	Length of 100 mm dia pipe
1	Borewell no. 1 to A	35.50	-
2	Borewell no. 2 to A	40.50	-
3	Borewell no. A to UGT	-	10
Total		75.50	10
		100	

**PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA,
GURGAON (HARYANA)**

Sub Work No-1						Water Supply	
Sub Work No-02						Pumping Machinery	
SI No	DESCRIPTION		Qty		Rate		AMOUNT (In Lacs.)
1	Providing and installing electricity driven Submersible pumping set capable of delivery about 18 KL / Hr. of water against a total Head of 110 M complete with motor and other accessories. 2 No @ 75,000/-		2	x	75000 2.00	125000 Rs.	2.50 1.60 4.00 lacs
2	Provision for diesel engine genset each for standby arrangements for T.W., booster pumps complete with gear head arrangement. - 1 No. 150 KVA	(L.S.)	1	x	1250000 650000	Rs.	12.50 6.50 10.00
3	Providing and installing pumping set of following capacities for Fire protections :-				1.80		2.00 lacs
(i)	280 lpm at 110 M head 2 Nos. Jockey Pump @ Rs. 1,00,000/-		2	x	2.00 100000	Rs.	2.00 2.00
(ii)	2850 lpm at 110 M head 2 No. Main Fire Pump @ Rs. 4,00,000/-		2	x	3.50 400000	Rs.	7.00 8.00
(iii)	2850 lpm at 110 M head 1 No. Diesel Pump @ Rs. 5,00,000/-		1	x	10.00 500000	Rs.	10.00 5.00
4	Providing for chlorination plant complete. 1 set @ 45,000/-		1	x	75000 45000	Rs.	1.00 0.45
5	Provision for making foundations and erection of Pumping machinery @ Rs. 37500/- (L.S.)	(L.S.)	1	x	37500	Rs.	1.00 0.38
6	Provision for pipes, valves and specials inside boosting chamber - 1 Set (L.S.) Rs. 75000/- for each	(L.S.)	1	x	75000	Rs.	1.00 0.75
7	Provision for electric services connection including electric fitting for tube wells & boosting chamber & cost of transformer etc. Rs. 75000/-	(L.S.)	1	x	75000	Rs.	2.50 lacs 0.75
8	Provision for carriage of material and unforeseen item. L.S. Rs. 50000/-	(L.S.)	1	x	50000	Rs.	0.50
TOTAL						Rs.	25.88
Add 3% contingencies & P.S. charges						Rs.	47.00 0.77
TOTAL						Rs.	1.41 26.65
Add 49% Department charges, Price Escalation & other unforeseen Charges.						Rs.	48.41 13.03
TOTAL COST						Rs.	23.72 29.63

Say 28.00 lacs

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2 (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

Sub Work No-1						Water Supply	
Sub Work No-03						Rising Main from HUDA	
SI No	DESCRIPTION		Qty		Rate		AMOUNT (In Lacs)
1	Providing, laying, jointing & testing 100 mm dia. P.I. pipe lines including cost of excavation complete in all respects.		50	@	1250 600	Rs.	0.63 -0.30
2	Providing and fixing 100 mm dia. sluice valves including cost of surface boxes and masonry chambers etc., complete in all respects.		1	@	3500 12000	Rs.	0.03 0.12
3	Providing and fixing indicating plates for sluice valves, air valves and fire hydrants.		1	@	1000 600	Rs.	0.01 0.006
4	Provision for carriage of material & other foreseen items etc. L.S.	(L.S.)	+		20000	Rs.	0.20
5	Provision for making connection with HUDA main (L.S.) 1 job complete in all respect	(L.S.)	+		20000 2500	Rs.	0.20 0.50
6	Provision for cutting road and making good the same (L.S.) 1 job	(L.S.)	+		55000 1500	Rs.	0.55 2.35
TOTAL						Rs.	1.96
Add 3% contingencies & P.E. charges						Rs.	0.06
TOTAL						Rs.	2.02
Add 49% Department charges, Price Escalation & other unforeseen Charges.						Rs.	0.99
TOTAL COST						Rs.	3.01

Say 3.01 Lacs

Material Statement and design statement of HUDA Rising Mains

S. No.	Name of line				Dia. in mm	Length in m from municipal to U.G.T.
1	Municipal Main To UGT				100	50

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

Sub Work No-1						Water Supply	
Sub Head No-04						Distribution system	
SI No	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs)	
1	Providing, laying, jointing & testing D.I. pipes including cost of excavation complete as per ISI marked.						
	100 mm I/D	1060	@	1250		13.25	1.85
	150 mm I/D	1050	@	1575	Rs.	16.54	1.81
	200 mm I/D	20	@	1950	Rs.	0.43	0.23
2	Providing, laying, jointing & testing G.I. pipes including cost of excavation complete as per ISI marked.						
	50 mm I/D	240	@	770	Rs.	1.00	1.61
	65 mm I/D	240	@	870	Rs.	1.18	1.9
3	Providing and Fixing sluice valves including cost of brick masonry chamber complete in all respect.						
	100 mm I/D	10	@	10000	Rs.	0.40	1.10
	150 mm I/D	10	@	15000	Rs.	1.50	0.05
	200 mm I/D	1	@	20000	Rs.	0.20	0.08
	65 mm I/D	12	@	5000	Rs.	0.30	0.6
	50 mm I/D	12	@	3000	Rs.	0.30	0.3
3	Providing and Fixing air valves and scour valves including cost of brick masonry chamber complete.	2	@	10000	Rs.	0.20	0.06
4	Providing and Fixing indicating plates for sluice valves	23	@	1000	Rs.	0.23	0.22
5	Provision for carriage of material & other foreseen items etc., (L.S). 1 Job including cutting of road and making the same, in original	(43)	@	35000	Rs.	2.00	0.35
TOTAL				36.96	Rs.	35.35	22.45
Add 3% contingencies & P.E. charges				1.10	Rs.	1.06	0.67
TOTAL				38.06	Rs.	36.41	23.13
Add 49% Department charges, Price Escalation & other unforeseen Charges				18.64	Rs.	17.84	11.33
TOTAL COST				56.70	Rs.	54.25	34.48

Say 54.25 lacs

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

S. No.	Description	200 mm	150 mm	100 mm	80 mm	65 mm	50 mm
(A)	Domestic						
	Ring Main						
1	UGT- W1	20	-	-	-	-	-
2	W1-W2	-	80	-	-	-	-
3	W1-W3	-	145	-	-	-	-
4	W2-W4	-	205	-	-	-	-
5	W4-W5	-	225	-	-	-	-
6	W5-W6	-	60	-	-	-	-
7	W3-W7	-	150	-	-	-	-
8	W7-W6		160				
9	To fill O.H.T. riser to building shafts					12 Nos. x 20 Mtr. = 240	
	TOTAL	20	1080	0	0	240	0
			1025 mtr				
(A)	Flushing						
1	STP- FWS1	-	25	-	-	-	-
2	FWS1 -FWS3	-	-	35	-	-	-
3	FWS3 -FWS2	-	-	225	-	-	-
4	FWS2 -FWS4	-	-	205	-	-	-
5	FWS1 -FWS7	-	-	150	-	-	-
6	FWS7 -FWS6			160	-		
7	FWS6 -FWS5			60	-		
8	FWS5 -FWS4			225			
9	Risers to building shafts (AV) & fill O.H.T.s	-	-	-	-	-	12 Nos. x 20 Mtr. = 240
	TOTAL	0	25	1060	0	0	240
	GRAND TOTAL	20	1085	1060	0	240	240

10.50 mtr

DOMESTIC WATER CAPACITY (HYDRAULIC CHART)

S. No.	Ref of line in m/s	Self				Additional		Domestic Water demand @ 65% of AMWD Apts + 35% commercial	Peak Demand @ 3 times of AMWD	Dia of Pipe	Velocity (m/s)	Loss of Head in 1000 M (m/s)	Loss of head in the line (m/s)	Level in			Remarks
		Dwelling unit @ 5 persons/D.U. + EWS-SP @ 2 persons/D.U. (L.P.D.) @ 172.6 L.P.D.	Flushing @ 10% of Population (L.P.D.) @ 15 L.P.D.	Commercial, Club + Swimming Pool, Nursing School, Backwash, Staff (L.P.D.)	Dwelling unit @ 5 persons/D.U. + EWS-SP @ 2 persons/D.U. (L.P.D.) @ 172.6 L.P.D.	Flushing @ 10% of Population (L.P.D.) @ 15 L.P.D.	Commercial Club + Swimming Pool, Nursing School, Backwash, Staff (L.P.D.)							HL	GL	TH	
1	AT UGT	-	-	-	3670 Persons = 633075 L.P.D.	367 Persons = 63307.5 L.P.D.	1680 +10000 +5000 +10000 +1125 +1125 +27805	436.16	1308.47	-	-	-	-	300.50	206.60	94.00	Ground level = 206.60 UGT Bed level(-) = 203.60 m/s
2	UGT-W1	20	-	-	3670 Persons = 633075 L.P.D.	367 Persons = 63307.5 L.P.D.	1680 +10000 +5000 +10000 +1125 +1125 +27805	436.16	1308.47	200	0.75	1.10	0.02	300.50	206.60	93.98	UGT Building head G+18 = 10+18.4 = 27 m/s Add suction head = 3 m/s Add Delivery head = 5 m/s Add position head = 3 m/s Add friction losses = 4 m/s Head level = 300.60 m/s
3	W1-W2	00	-	Nursery School + Backwash + Staff = 5000 +10000 +1125 +1125 = 10125 (L.P.D.)	245 D.U. = 1275 Persons = 219938 L.P.D.	138 Persons = 1930 L.P.D.	-	155.78	467.33	150	0.75	0.72	0.06	300.52	206.60	93.92	
4	W2-W4	206	90 Persons = 155250 L.P.D.	-	75 D.U. = 375 Persons = 64688 L.P.D.	38 Persons = 570 L.P.D.	-	143.63	430.90	150	0.75	0.70	0.14	300.35	206.60	93.78	
5	W4-W5	225	-	-	75 D.U. = 375 Persons = 64688 L.P.D.	38 Persons = 570 L.P.D.	-	42.25	126.74	150	0.75	0.03	0.00	300.30	0.00	300.30	
6	W5-W6	60	30 Persons = 51450 L.P.D.	-	-	-	-	42.25	126.74	150	0.75	0.00	0.00	300.30	0.00	300.30	
7	W1-W3	145	90 Persons = 155250 L.P.D.	Commercial = 1000 L.P.D.	225 D.U. + 185 EWS-SP = 1405 Persons = 257895 L.P.D.	150 Persons = 2250 L.P.D.	Club + Swimming Pool = 10000	260.39	841.18	150	0.75	2.20	0.32	300.35	206.60	93.66	
8	W3-W7	185	185 (W3-SP) = 370 Persons = 633075 L.P.D.	-	225 D.U. = 1125 Persons = 194063 L.P.D.	113 Persons = 1695 L.P.D.	Club + Swimming Pool = 10000	176.22	534.66	150	0.75	1.00	0.19	300.07	206.60	93.47	
9	W7-W9	190	113 Persons = 194063 L.P.D.	Club + Swimming Pool = 10000	-	-	-	136.73	410.20	150	0.75	0.60	0.10	299.97	206.60	93.37	

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

FLUSHING WATER CAPACITY (HYDRAULIC CHART)

S. No	Ref of line	Length in mts	Dwelling unit @ 5 persons/ D.U. + EWS-SP @ 2 persons/ DU (LPD) @ 172.5 LPCD	Self Flooding @ 10% of Population (LPD) @ 15 LPCD	Commercial Club + Swimming Pool, Nursing School, Backwash, Staff (LPD)	Dwelling unit @ 5 persons/ D.U. + EWS-SP @ 2 persons/ DU (LPD) @ 172.5 LPCD	Additional Flooding @ 10% of Population (LPD) @ 15 LPCD	Commercial Club + Swimming Pool, Nursing School, Backwash, Staff (LPD)	AWWD KLD	Flushing Water Demand @ 35% of AWWD Acts + 65% of commercial	Peak Demand @ 35 line of AWWD	Dia of pipe	Velocity	Loss of Head in 1000 M (mts)	Loss of head in the line (mts)	Level at start	Level at end	TH	Remarks
1	At STP	-	-	-	-	-	-	-	1580 +10000 +5000 +10000 +1125 2125	230.23	680.48	-	-	-	-	300.03	206.60	84.00	Ground level = 300.00 STP Bed level = 195.50 Mtr Add Building head G+1F = 10+10+4 = 24 mtr Add suction head = 7 mtr Add Delivery head = 5 mtr Add positive head = 3 mtr Add friction losses = 4 mtr Head level = 300.00 MTS
2	STP FWS1	25	-	-	-	-	-	-	1580 +10000 +5000 +10000 +1125 2125	230.23	680.48	150	0.75	1.50	0.04	300.56	206.60	83.96	
3	FWS1 - FWS3	35	-	-	-	-	-	-	230.86	81.46	244.43	100	0.75	1.80	0.06	300.50	206.60	83.90	
4	FWS3 - FWS2	225	-	-	-	-	-	-	319.86	114.77	344.32	100	0.75	2.80	0.03	299.87	206.60	93.27	
5	FWS2 - FWS4	205	-	-	-	-	-	-	156.60	55.22	165.63	100	0.75	0.82	0.17	299.70	206.60	93.10	
6	FWS1 - FWS7	150	-	-	-	-	-	-	323.13	114.72	344.17	100	0.75	2.80	0.42	300.14	206.60	93.54	
7	FWS7 - FWS6	165	-	-	-	-	-	-	371.02	92.04	276.11	100	0.75	2.00	0.32	299.82	206.60	93.22	
8	FWS6 - FWS5 - FWS4	365	-	-	-	-	-	-	65.20	23.01	69.03	100	0.75	0.17	0.05	296.77	206.60	93.17	

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2. (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

Sub Work No-1					Water Supply	
Sub Work No-05					Fire fighting	
SI No	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs.)
1	Providing, laying jointing & testing M.S. pipe lines for rising main including cost of fitting, valves, connection etc., complete in all respects.					
	200 mm I/D for UGT - Ring Main	20	@	1700		
	150 mm I/D for Ring Main	1080	@	1250.00	Rs.	0.25
	100 mm I/D for Tanker Inlet	20	@	1575 950.00	Rs.	0.10
	80 mm I/D for Yard hydrant fire Brigade connection	150	@	1250 825.00	Rs.	0.25
2	Providing & fixing valve including cost of surface boxes and masonry chambers etc. complete in all respects					
	- 200 mm dia.	4	@	5000.00		0.17
	- 150 mm dia.	5	@	5250.00		0.08
	- 100 mm dia.	1	@	4000.00		0.04
	- 80 mm dia.	25	@	2500.00		0.08
3	Providing and fixing fire Hydrant with accessories	25	@	5000.00	Rs.	1.25
4	Providing for carriage of material (L.S.) 1 jobs	1	@	50000.00	Rs.	0.50
5	Providing and fixing Indicating plate	32	@	600.00	Rs.	0.19
	TOTAL			1000	Rs.	14.83
	Add 3% contingencies & P.E. Charges			23.93	Rs.	0.44
	TOTAL			0.69	Rs.	15.27
	Add 49% Department charges, Price Escalation & other unforeseen Charges.			23.62	Rs.	7.48
	TOTAL COST				Rs.	22.76

5000 41.50
11.57
\$ 35.19 Lacs

Material Statement of Fire ring - MS - 150mm dia

S. No.	Location	200 mm dia pipe	150 mm dia pipe	100 mm dia pipe	80 mm dia pipe	Fire Hydrant
1	Pump room to fire ring	20	-	-	-	-
2	Ring around the building	-	1080	-	-	-
3	Tanker Inlet connection	-	-	20	-	-
4	Fire Brigade 4 way	-	20	-	-	-
5	Yard Hydrants = 25 Nos. x 6 Meters	-	-	-	150	25
	Total	20	1080	20	150	25

Fire Hydrant System

- Valves 200mm dia
- Valves 150mm dia
- Valves 100mm dia
- Valves 80mm dia
- Fire Hydrants
- Fire Brigade Connections

- 4 No.
5 Nos.
1 No.
25 Nos.
25 Nos.
1 No.

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2 (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

Sub Work No-1					Water Supply	
Sub Work No-06					Irrigation	
SI No	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs)
1	Providing, laying, jointing and testing uPVC pipe line conforming to I.S 4985 including cost of excavation etc., complete in all respects.					
25	20 mm O/D for Garden Pipe	122	@	150	Rs.	0.11
	76 mm O/D for Ring Main	4060	@	400	Rs.	1.62
	110 mm O/D from STP to Ring Main	25	@	500	Rs.	0.13
2	Providing and fixing Irrigation hydrant valve complete in all respect.	36	@	3500	Rs.	1.26
3	Provision for carriage of material & other foreseen items etc., (L.S.) 1 jobs				Rs.	0.25
4	Providing & fixing ball valve 20 mm	36	@	250	Rs.	0.09
5	Providing & fixing sluice valve complete with chamber.					
	- 85 mm dia.	5	@	3000	Rs.	0.15
	- 100 mm dia.	1	@	4000	Rs.	0.04
6	Providing and fixing Irrigation pump 2 nos., 2.0 HP, 385 LPM @ 35 Mtr. Head complete with foundation & control panel etc.	2	@	15000	Rs.	0.30
	TOTAL				Rs.	5.84
	Add 3% contingencies & P.E. charges				Rs.	0.18
	TOTAL				Rs.	6.02
	Add 49% Department charges, Price Escalation & other unforeseen Charges.				Rs.	2.95
	TOTAL COST				Rs.	8.97

Material statement of Irrigation System

S. No.	Line Name	110 mm OD	76 mm OD	20 mm OD	Irrigation Hydrants
1	Pump Room to ring main.	25	-	-	-
2	Garden hydrant ring main around the building	-	1060	-	-
3	Garden hydrant 36 x 2 mts (AV)	-	-	72	-
4	Garden hydrant	-	-	-	36
	Total	25	1060	72	36

**PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT
SOHNA, GURGAON (HARYANA)**

Sub Work No-II

SI No	DESCRIPTION	Qty		Rate	Sewerage Scheme	
						AMOUNT (In Lacs)
1	Providing, jointing, cutting and testing S.W pipe class 'A' / S.W.P. PVE and lowering into trenches including cost of excavation, bed concrete, cost of manhole etc., complete in all respects.					
	200 mm I/D Avg. depth upto 0 - 4.00 M (S.W. Pipe)	0	@	0.00	Rs.	0.00
	250 mm I/D Avg. depth upto 0 - 4.00 M (S.W. Pipe)	1035	@	1500 700.00	Rs.	15.53 2.26
	300 mm I/D Avg. depth upto 0 - 4.00 M (S.W. Pipe)	10	@	1800 300.00 2150/-	Rs.	0.22 0.02 6.5
2	Provision for lighting and watching L.S				Rs.	-0.30
3	Provision for timbering and shuttering L.S.				Rs.	-0.30
4	Provision of 150 mm dia line form STP to HUDA main by pumping	50 300 m/hr @		1800 750.00 1575/-	Rs.	4.73
5	Providing boosting arrangement by 3 nos. pump for flushing water supply 12.50 HP capacity 320 L.P.M., 100 Meter Head	3	@	12500 60000.00	Rs.	6.75 4.80
6	Provision for making STP (KLDY treatment up to 500 m ³ /day)	1	@	5500.00	Rs.	30.80
7	Provision for carriage of material (L.S. trenching)	1	@	30000.00	Rs.	-0.30
8	Provision of cutting road & making it good as same in original condition - 1 job	1	@	35000.00	Rs.	-0.35
9	TOTAL Part for Connection from HUDA main line on road			100000	Rs.	-41.19
	Add 3% contingencies			115.98	Rs.	-1.24
	TOTAL			3.48	Rs.	42.42
	Add 49% Department charges, price escalation, other for unforeseen charges.			119.46	Rs.	20.70
	TOTAL COST			58.54	Rs.	63.21

Material statement of Sewerage System - As per drawing sheet

S. No.	Name of Pipe Line	Length of Pipe in M		
		300 mm	250 mm	200 mm
1	S1-S2	-	225	-
2	S2-S3	-	55	-
3	S3-S4	-	155	-
4	S4-S10	-	130	-
5	S5-S6	-	30	-
6	S6-S7	-	135	-
7	S7-S8	-	110	-
8	S8-S9	-	140	-
9	S9-S10	-	55	-
12	S10-STP	10	-	-
	Total	10	1035	0

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)
TOTAL WATER REQUIREMENT

(I) DAILY WATER REQUIREMENT

A Residential blocks

a) Tower A1 - G+13	=	55 Units
b) Tower A2 - G+13	=	55 Units
c) Tower A3 - G+13	=	55 Units
d) Tower A4 - G+13	=	55 Units
e) Tower B1 - G+17	=	70 Units
f) Tower B2 - G+17	=	70 Units
i) Tower C1 - G+18	=	75 Units
j) Tower C2 - G+18	=	75 Units
k) Tower C3 - G+18	=	75 Units
l) Tower C4 - G+18	=	75 Units
Total	=	75 Units
@5 Persons/Unit	=	660 Units
	=	3300 Persons

B EWS

Service Persons

Total B

@ 2 Persons/Unit

=	117 Units
=	68 Units
=	185 Units
=	370 Persons

Total population (A+B)

@172.50 LPCD (1)

=	3670 Persons
=	633075 Liters/ Day

C Commercial

a) Community Building (Club + Swimming Pool)	=	10000 Liters/day
b) Nursery Schools - (L.S.)	=	5000 Liters/day
c) Shopping - 336 sqmt @ 3 sqmt / person @ 15 LPCD	=	1680 Liters/day
d) Maintenance Staff (Such as Gardener, ESS Staff, Security Guards etc.)	=	25 Persons
@45 LPCD	=	
e) Back Wash Filters - L.S.	=	1125 Liters/day
f) Floating Population 10% of Population	=	10000 Liters/day
@ 15 LPCD	=	367 Persons
Total Commercial	=	5505 Liters/day
		33310 Liters/day

D Horticulture & Road Work

a) Area under park 6862 sqmt. @ 5 Liters / sqmt.	=	34310 Liters/day
b) Area under road 10% of 10.25 acres @ 25 KL/Acre	=	25625 Liters/day
Total	=	59935 Liters/day
Or Say	=	59935 Liters/day

The demand of Horticulture & Road work will met from recirculated water after treatment at S.T.P.

Total Water demand (A TO C)

Total Water demand (KLD)

Or Say

666385 Liters/day

666.39 KLD

670.00 KLD

Domestic water demand 65% of AV/WD of (A+B) +35% =
of $[C(b+c+d+f) + 100\% \text{ of } C(a+e)]$

436157 Liters/day

Domestic water demand (KLD)

=

436.16 KLD

Or Say

=

440.00 KLD

Flushing water demand 35% of AV/WD of (A+B) +65% =
of $[C(b+c+d+f)]$

230228 Liters/day

Flushing water demand (KLD)

=

230.23 KLD

Or Say

=

230.00 KLD

Sewage Treatment Plant CapacityAverage Sewerage Contribution Considering 80% of AV =
domestic water demand & 90% of AV/Flushing demand

559000 Liter / Day

Sewage Treatment Plant Capacity (KLD)

=

559.00 KLD

Or Say

=

560.00 KLD

Sewage schemePeak discharge @3 times of sewage discharge plus sub =
soil infiltration @ 10% of total water demand

1747000 Liters

=

388222 GPD

=

0.719 Cusces

Hence 300 mm dia pipe having design capacity 0.945 cuses is sufficient to carry the above discharge

PROPOSED "ASHIANA MULBI" 3rd GROUP HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

(Hydraulic Design Sewerage Scheme)

Sl. No.	Name of Line	Length in Meter	Downing unit @ 5 persons/ DU @ 172.56 LPCD	Self Flushing @ 2 person/ DU @ 172.56 LPCD	Commercial Club + Swimming Pool, Running School, Backwash (LPCD)	Staff @ 45 LPCD / Person	Flushing @ 2 person/ DU @ 172.56 LPCD	Commercial Club + Swimming Pool, Running School, Backwash (LPCD)	Staff @ 45 LPCD / Person	Average Daily water Demand	Average Discharge 80% of Capacity + 80% of Backwash	Sub Soil Infiltration @ 17% of AWT	Peak Discharge @ 3 Times of Average Discharge including Sub Infiltration	Size of pipe (mm)	Capacity in m ³	Discharge of Pipe	Drop	Level at Start I.L.	Level at End I.L.	
1	S1-S2	20	100 D.U. = 17256 LPCD	100 D.U. = 17256 LPCD	Club + Swimming Pool = 10000 LPCD	20 Persons = 1125 LPCD	100 D.U. = 17256 LPCD	Club + Swimming Pool = 10000 LPCD	20 Persons = 1125 LPCD	88.13	81.84	0.61	0.00	256	0.008	2.5	1.180	1.18	200.60	200.70
2	S2-S3	55	100 D.U. = 17256 LPCD	100 D.U. = 17256 LPCD	Club + Swimming Pool = 10000 LPCD	20 Persons = 1125 LPCD	100 D.U. = 17256 LPCD	Club + Swimming Pool = 10000 LPCD	20 Persons = 1125 LPCD	88.13	81.84	0.61	0.00	256	0.008	2.5	1.180	1.18	200.60	200.70
3	S3-S4	163	200 D.U. = 34512 LPCD	200 D.U. = 34512 LPCD	Club + Swimming Pool = 10000 LPCD	20 Persons = 1125 LPCD	200 D.U. = 34512 LPCD	Club + Swimming Pool = 10000 LPCD	20 Persons = 1125 LPCD	252.13	254.58	26.21	0.00	256	0.008	2.5	1.180	1.18	200.60	200.70
4	S4-S11	136	100 D.U. = 17256 LPCD	100 D.U. = 17256 LPCD	Club + Swimming Pool = 10000 LPCD	20 Persons = 1125 LPCD	100 D.U. = 17256 LPCD	Club + Swimming Pool = 10000 LPCD	20 Persons = 1125 LPCD	345.51	348.75	34.65	0.00	256	0.008	2.5	1.180	1.18	200.60	200.70
5	S5-S6-S7	190	100 D.U. = 17256 LPCD	100 D.U. = 17256 LPCD	Club + Swimming Pool = 10000 LPCD	20 Persons = 1125 LPCD	100 D.U. = 17256 LPCD	Club + Swimming Pool = 10000 LPCD	20 Persons = 1125 LPCD	156.80	150.80	13.05	0.00	300	0.045	2.5	1.240	1.07	200.60	200.68
6	S7-S8	810	100 D.U. = 17256 LPCD	100 D.U. = 17256 LPCD	Club + Swimming Pool = 10000 LPCD	20 Persons = 1125 LPCD	100 D.U. = 17256 LPCD	Club + Swimming Pool = 10000 LPCD	20 Persons = 1125 LPCD	183.28	181.50	10.33	0.00	256	0.008	2.5	1.180	1.08	200.60	200.60
7	S8-S9	180	100 D.U. = 17256 LPCD	100 D.U. = 17256 LPCD	Club + Swimming Pool = 10000 LPCD	20 Persons = 1125 LPCD	100 D.U. = 17256 LPCD	Club + Swimming Pool = 10000 LPCD	20 Persons = 1125 LPCD	311.80	297.38	31.90	0.00	200	0.008	2.5	1.180	1.24	200.60	200.60
8	S9-S10	66	100 D.U. = 17256 LPCD	100 D.U. = 17256 LPCD	Club + Swimming Pool = 10000 LPCD	20 Persons = 1125 LPCD	100 D.U. = 17256 LPCD	Club + Swimming Pool = 10000 LPCD	20 Persons = 1125 LPCD	210.88	207.30	21.89	0.00	250	0.008	2.5	1.180	1.29	200.60	200.62
9	S10-S11	43	100 D.U. = 17256 LPCD	100 D.U. = 17256 LPCD	Club + Swimming Pool = 10000 LPCD	20 Persons = 1125 LPCD	100 D.U. = 17256 LPCD	Club + Swimming Pool = 10000 LPCD	20 Persons = 1125 LPCD	606.34	555.82	88.84	0.00	300	0.045	2.5	1.240	1.04	200.60	200.68

1 The Manhole shall be constructed as per IS:800 M.S.C. Manhole

Note: 1. The Man hole shall be constructed as per IS:8034 M.S.C. Manhole
2. All the level have been taken with reference to road level

204.40

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2. (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

Sub Work No-III

Storm water drain

S. No.	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs)
1	Providing, lowering, laying and jointing R.C.C NP-3 pipes and specials into trenches including manholes, chambers etc., excavation, back filling and disposal of surplus earth complete in all respects. 400 mm I/D Avg. depth upto 2.0 M.	1050	@	2500		26.25 lacs
2	Provision for Road Gullies L.S. with 300 mm d pipe	LS		790	Rs.	8.30
3	Provision for lighting and watching				Rs.	0.35
4	Provision for timbering and shoring L.S.				Rs.	0.20
5	Provision for carriage of material & other foreseen items etc., L.S.				Rs.	0.25
6	Provision for Rain water harvesting arrangements for 1 Lac / Acre for Rain Water Harvesting	10.25	@	100000	Rs.	10.25
7	Provision for temporary connection with HUDA on master drain				Rs.	0.50
8	TOTAL <i>Prov. for cutting & road & making joint & its in normal condition</i>				Rs.	20.20
	Add 3% contingencies & P.C. charges			42.60	Rs.	0.61
	TOTAL			1.26	Rs.	20.80
	Add 49% Department charges, price escalation, other for unforeseen			13.20	Rs.	40.19
	TOTAL			21.20	Rs.	30.99
						64.46 lacs
						<i>Say 63 lacs</i>

C.O. to final abstract of cost

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2. (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

STORM WATER DRAIN

S. No	Name of Drain	400mm dia RCC pipe
Rain Water Harvesting - 1		
1	D1-D2	
2	D2-D3	30
3	D3-RWH-1	50
4	Overflow pipe	5
		5
Rain Water Harvesting - 2		
5	D4-D5	
6	D5-RWH-2	60
7	Overflow pipe	15
		15
Rain Water Harvesting - 3		
8	D6-D7	
9	D7-RWH-3	65
10	Overflow pipe	10
		15
Rain Water Harvesting - 4		
11	D8-D9	
12	D9-D10	30
13	D10- RWH-4	50
14	Overflow pipe	10
		20
Rain Water Harvesting - 5		
15	D11-D12	
16	D12- RWH-5	60
17	Overflow pipe	10
		20
Rain Water Harvesting - 6		
18	D13-D14	
19	D14-RWH-6	60
20	Overflow pipe	10
		15
Rain Water Harvesting - 7		
21	D15-D16	
22	D16-RWH-7	30
23	Overflow pipe	5
		20
Rain Water Harvesting - 8		
24	D17-D18	
25	D18-RWH-8	60
26	Overflow pipe	5
		20
Rain Water Harvesting - 9		
27	D19-D20	
28	D20-RWH-9	110
29	Overflow pipe	10
		15
Rain Water Harvesting - 10		
30	D21-D22	
31	D22-D24	105
32	D23-D24	40
33	D24-RWH-10	45
34	Overflow pipe	10
		20
Total		1050

ma

PROPOSED "ASHIANA MULBERRY" GROL. HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

Hydraulic Design Chart

Storm Water Drain

Calculations are based on Manning Formula $V = (1.486/n) \times m^{2/3} \times S^{1/2}$ in F.P.S System

Sl. No.	Name of Line	Length in Meter	Catchment Area in sqmt		Total Area (Sqmt)	Discharge in Cusec (1 Acre = 1 Cusec)	Proposed dia of pipe (mm)	Velocity (mt/sec)	Design Capacity of Pipe (Cusecs)	Gradient	Drop (Mtr.)	Level at Start			Level at End		
			Self	Additional								G.L. (Mtr.)	I.L. (Mtr.)	Depth (Mtr.)	G.L. (Mtr.)	I.L. (Mtr.)	Depth (Mtr.)
Rain Water Harvesting - 1																	
1	D1-D2	30	45 x 30 = 1350	-	1350	0.334	400	0.75	3.48	1:500	0.05	206.60	205.70	0.900	206.60	205.64	0.960
2	D2-D3	50	50 x 35 = 1750	Line D1-D2 = 1350	3100	0.766	400	0.75	3.48	1:500	0.10	206.60	205.64	0.960	206.60	205.54	1.060
3	D3-RWH-1	5	35 x 10 = 350	Line D1-D2 = 3100	3450	0.852	400	0.75	3.48	1:500	0.01	206.60	205.54	1.060	206.60	205.53	1.070
Rain Water Harvesting - 2																	
4	D4-D5	60	70 x 35 = 2450	-	2450	0.605	400	0.75	3.48	1:500	0.12	206.60	205.70	0.900	206.60	205.58	1.020
5	D5-RWH-2	15	35 x 25 = 875	Line D4-D5 = 2450	3325	0.822	400	0.75	3.48	1:500	0.03	206.60	205.58	1.020	206.60	205.55	1.050
Rain Water Harvesting - 3																	
6	D6-D7	65	75 x 35 = 2625	-	2625	0.649	400	0.75	3.48	1:500	0.13	206.60	205.70	0.900	206.60	205.57	1.030
7	D7-RWH-3	10	35 x 15 = 525	Line D6-D7 = 2625	3150	0.778	400	0.75	3.48	1:500	0.02	206.60	205.57	1.030	206.60	205.55	1.050
Rain Water Harvesting - 4																	
8	D8-D9	30	45 x 30 = 1350	-	1350	0.334	400	0.75	3.48	1:500	0.05	206.60	205.70	0.900	206.60	205.64	0.960
9	D9-D10	50	50 x 35 = 1750	Line D8-D9 = 1350	3100	0.766	400	0.75	3.48	1:500	0.10	206.60	205.64	0.960	206.60	205.54	1.060
10	D10-RWH-4	10	30 x 15 = 450	Line D9-D10 = 3100	3550	0.877	400	0.75	3.48	1:500	0.02	206.60	205.54	1.060	206.60	205.52	1.080
Rain Water Harvesting - 5																	
11	D11-D12	60	75 x 35 = 2625	-	2625	0.649	400	0.75	3.48	1:500	0.12	206.60	205.70	0.900	206.60	205.58	1.020
12	D12-RWH-5	10	30 x 20 = 600	Line D11-D12 = 2625	3225	0.797	400	0.75	3.48	1:500	0.02	206.60	205.58	1.020	206.60	205.56	1.040

PROPOSED "ASHIANA MULBERRY" GROUND HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

Hydraulic Design Chart

Storm Water Drain

Calculations are based on Manning Formula $V = (1.486/n) \times m^{2/3} \times s^{1/2}$ in F.P.S System

Rain Water Harvesting - 6																	
13	D13-D14	60	70 x 35 = 2450	-	2450	0.605	400	0.75	3.48	1:500	0.12	205.60	205.70	0.900	205.60	205.58	1.020
14	D14-RWH-6	10	30 x 20 = 600	Line D13-D14 = 2450	3050	0.754	400	0.75	3.48	1:500	0.02	205.60	205.58	1.020	205.60	205.56	1.040
Rain Water Harvesting - 7																	
15	D15-D16	30	45 x 35 = 1575	-	1575	0.389	400	0.75	3.48	1:500	0.06	205.60	205.70	0.900	205.60	205.64	0.960
16	D16-RWH-7	5	45 x 20 = 900	Line D15-D16 = 1575	2475	0.612	400	0.75	3.48	1:500	0.01	205.60	205.64	0.960	205.60	205.63	0.970
Rain Water Harvesting - 8																	
17	D17-D18	60	60 x 35 = 2800	-	2800	0.652	400	0.75	3.48	1:500	0.12	205.60	205.70	0.900	205.60	205.58	1.020
18	D18-RWH-8	5	30 x 20 = 600	Line D17-D18 = 2800	3400	0.840	400	0.75	3.48	1:500	0.01	205.60	205.58	1.020	205.60	205.57	1.030
Rain Water Harvesting - 9																	
19	D19-D20	110	120 x 60 = 7200	-	7200	1.779	400	0.75	3.48	1:500	0.22	205.60	205.70	0.900	205.60	205.48	1.120
20	D20-RWH-9	10	35 x 10 = 350	Line D19-D20 = 7200	7550	1.866	400	0.75	3.48	1:500	0.02	205.60	205.48	1.120	205.60	205.46	1.140
Rain Water Harvesting - 10																	
21	D21-D22	105	115 x 60 = 6900	-	6900	1.705	400	0.75	3.48	1:500	0.21	205.60	205.70	0.900	205.60	205.49	1.110
22	D22-D24	40	40 x 20 = 800	Line D21-D22 = 6900	7700	1.903	400	0.75	3.48	1:500	0.08	205.60	205.49	1.110	205.60	205.41	1.190
23	D23-D24	45	45 x 12 = 540	-	8240	2.036	400	0.75	3.48	1:500	0.09	205.60	205.70	0.900	205.60	205.61	0.990
24	D24-RWH-10	10	-	Line D22-D24 = 7700 Line D23-D24 = 540 = 8240	8240	2.036	400	0.75	3.48	1:500	0.02	205.60	205.41	1.190	205.60	205.39	1.210

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

SUB WORK NO. - IV						Road Work	
SI No	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs)	
1	Provision for leveling - earth filling / cutting as per site conditions. (In Acres) Area = 10.25 Acre	10.250	@	1,50,000	Rs.	15.38	
2	Provision for Granular sub base 300mm, 250 mm thick stone aggregate, 50 mm thick B.M. 25 mm thick pre mix carpet with seal coat. B.L.	13000		1000		13.00	
3	Provision of Paved path of C.C. 1:2:4	14500	@	450	Rs.	6.53	
4	Provision for Kerbs & channels of CC 1:2:4	2320	@	250	Rs.	5.80	
5	Provision for making approach to each block for C.C. pavements L.S.	2500				7.54	
6	Provision of guide maps at selected place (L.S.)				Rs.	0.50	
7	Provision for Traffic Lights arrangement - L.S.				Rs.	0.25	
8	Provision for Demarcating Durgies - L.S.				Rs.	0.20	
9	Provision for Plot indicator - L.S.				Rs.	0.20	
10	Provision for Parking Arrangement, L.S.				Rs.	0.40	
11	Provision of carriage of material and unforeseen items - L.S.				Rs.	0.75	
	TOTAL				Rs.	0.50	
	Add 3% contingencies & PE charges.			168.38	Rs.	87.90	
	TOTAL			5.05	Rs.	2.64	
	Add 49% Department charges, price escalation, other for unforeseen			173.43	Rs.	90.54	
	TOTAL				Rs.	44.36	
				84.98	Rs.	134.90	

258.41 Lacs
Say 240.30 Lacs

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

Road Work

S. No.	Name of Road	Length of Road (in Mtrs.)	Metalled Width (Mtrs.)	Area in Sqm.
	A	B	C	B x C
1	Road No.A	160	6	960.00
2	Road No.B	35	6	210.00
3	Road No.C	120	6	720.00
4	Road No.D	170	6	1020.00
5	Road No.E	90	6	540.00
6	Road No.F	135	6	810.00
7	Road No.G	50	6	300.00
8	Road No.G1	30	12	360.00
9	Road No.H	210	6	1260.00
10	Road No.I	50	6	300.00
Total		1050	6	6480.00
Add 10 % for curves		105	5.50 m	577.50
Total				7057.50
Add for surface plaza/ parking				495
Total				7552.50
Say				14,578.00
				14,580.00
				Say 1300
Total Length of road		1050		
Add 10% curves		105		
Total Length		1155		
Say		1160	Mtrs.	

No. of Car Parking (open) =

Area = $50 \times 8 \times 298 =$

$250 \times 550 \times 255 = 298$

Pave Path on both side of Road =

both in channel 2500 unit
(both side)

298 Nos.

2450 Sqmts. Say 5000 Sam

4098

2320 Sqmts.

$1255 \times 2 = 2500 Sam$

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

Sub Work No-V						Street Lighting	
SI No	DESCRIPTION	Qty		Rate		AMOUNT	(In Lacs)
1	Providing street lighting on roads as per standard specifications on HVPN with CFL Area = 10.25 Acre			125000		1281.25	63.6
	TOTAL	10.250	@	60000	Rs.	6.15	
	Add 3% contingencies & PE charges.			2.50 Lacs	Rs.	6.15	12.81
	TOTAL				Rs.	0.18	0.38
	Add 49% Department charges, price escalation, other for unforeseen charges.				Rs.	6.33	72.19
	TOTAL				Rs.	3.10	26.48
	TOTAL				Rs.	9.44	79.65

39.37
Lacs

c.o. to final abstract of cost

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

Sub Work No-VI					Plantation & Road side trees	
SI No	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs)
1	Development of Lawn Area :-					
	a) Trenching the ordinary soil upto depth of 60 cm. including removal and packing of serviceable material and disposing at a lead of 50 M. and making up the trenched area to proper level by filling with earth mixed with manure before and after flooding trench with water including cost of imported earth and manure.					
	b) Rough dressing of trenched area.					
	c) Grassing with "doob grass" including watering and maintenance of lawns free from weeds and fit for moving in rows 7.50 cm. in either direction including for hedges and grill and barred wire fencing around park and green belts (As per HUDA norms)	1.50 acre		150000		2.25 lacs
	Area = 40.25-Acre 5767.01 Sqm	40.25	@	60000	Rs.	2.415
2	Providing & Planting of trees with tree guards on roads at 12 m intervals			1.50 lacs/Acre		
	Total Road Length (M.)	1255				
	Trees @ 12 M. c/c	104.58				
	Say (2x 97) = 194 = 209.16 Or Say	200				
	Cost of One Tree :-	210				
	Excavation (Rs.) 25/- 30-00					
	Manure (Rs.) 25/- 60-00					
	Tree Plants (Rs.) 50/- 60-00					
	Tree Guards (Rs.) 450/- 600-00					
	Total Cost (each)	750-00		750/-		1.58 lacs
	Cost of Total trees	200	@	550		1.10
	TOTAL				Rs.	4.10
	Add 3% contingencies & PE charges				Rs.	7.25 1431 3.83
	TOTAL				Rs.	0.22 0.42 6.11
	Add 49% Department charges, price escalation, other for unforeseen charges.				Rs.	7.47 1473 3.94
	TOTAL				Rs.	3.66 7.22 1.92
					Rs.	11.43 5.82

C. o. to final abstract of cost

2195
Say 2200 lacs

SUB:- Approval of Service Plan /estimate for Group Housing Colony on the land measuring 10.25 acres (License No. 16 of 2014 dated 10.06.2014) Village Sohna Sec-2, Sohna Gurgaon by M/S. PSL Infratech 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 HUDA and further shall also confirm to such directions, as issued by Chief Engineer, HUDA from time to time.
4. The work shall be carried out according to Haryana PWD specification or such specifications as are being followed by HUDA. Further it shall also confirm to such other directions, as are issued by Chief Engineer, HUDA 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/ HUDA. All link connections with the State Government/ HUDA 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.

SFL

28/11/18

Chief Engineer

28/11/18

PROPOSED "ASHIANA MULBERRY" GROUP HOUSING COLONY IN SECTOR - 2, (ON 10.25 ACRES) AT SOHNA, GURGAON (HARYANA)

SUB WORK NO. VII:				MTC. CHARGES AND RESURFACING OF ROADS.		
SI No	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs)
1	Provision for maintenance charges for water supply, sewerage, storm water, drainage, roads, street light, Hort., etc. complete including operation & establishment charges as per HUDA norms after completion. Area = 10.25 Acre			50000		51.25
2	Provision for resurfacing of roads after first five years of maintenance i.e. 100mm thick B.M. with 25mm thick premix carpet with seal coat with mechanical paver. (Sqm)	10.250	@	250000	Rs.	25.63
3	Provision for resurfacing of roads after 10 years of Mtc. i.e. 25mm thick premix carpet with seal coat with mechanical paver. (Sqm)	13000		600		78.00
		44580	@	250	Rs.	36.45
	TOTAL	14580	@	250	Rs.	36.45
	Add 3% contingencies & PE charges			226.75	Rs.	98.53
	TOTAL			6.80	Rs.	2.96
	Add 49% Department charges, price escalation, other for unforeseen charges.			233.55	Rs.	101.48
	TOTAL			114.46	Rs.	49.73
				347.99	Rs.	151.21

C.O. to final abstract of cost

