

**DIRECTORATE OF TOWN & COUNTRY PLANNING, HARYANA**

SCO 71-75, Sector 17C, Chandigarh

Phone:0172-2549349; e-mail:tcpdry@gmail.com

<http://tcpdryana.gov.in>

To

<sup>b-7.</sup>  
Clarion Properties, Ltd. & others  
34, Babar Lane, Bangali Market,  
New Delhi

Memo. No. LC-2613-PA(B)-2016/

8784

Dated:

5/5/2016

Subject: Approval of service plan estimates for Internal development works in respect of license for setting up of a commercial colony over an area measuring 5.846875 acres, Sector 102, Gurgaon Manesar Urban Complex (License No. 93 of 2012 dated 05.09.2012, 30 of 2014 dated 12.06.2014 & 31 of 2014 dated 12.06.2014).

Kindly refer your application on the subject cited above.

The service plan/estimates of commercial colony being developed over an area measuring 5.846875 acres in sector 102, Gurgaon Manesar Urban Complex 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. CFL 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.

b-7

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. You have proposed to utilize recycled water for flushing purposes and provision of separate flashing 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, these 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.
12. That it shall be mandatory to provide dual/two button or lever flushing system in toilets.
13. 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.
14. 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.
15. 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.
16. 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.
17. 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.
18. 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.
19. 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.

20. 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.
21. That the detailed technical proposal/scheme shall be got approved from this office before execution of work at site.
22. The firm will provide solar water heating system as per the guidelines issued by Haryana Govt./Ministry of Environment/Govt. of India.
23. 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.
24. 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.
25. 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.
26. That you shall get the electrical service plan estimates approved from the agency responsible for installation of external electricity service as per condition of agreement executed on prescribed proforma LC-IV with the Director.
27. That you will not resort manual scavenging by engaging sanitation works for cleaning of septic tanks/such cleaning as per the decision taken in the meeting of the Central Monitoring Committee (CMC) held under the Chairmanship of Cabinet Secretary on 22.03.2013 (D.O. No. Q. 11021/12/2010-PHE-II (Vol IV dated 7<sup>th</sup> Feb 2013 of secretary to the Govt. of India of Urban Development and further order by the Principal Secretary to Govt. Haryana, Urban Local Bodies Deptt. Chandigarh vide letter No. 16/24/2013-2C1 dated NIL.
28. That you shall also be abide to take connection of sewage treated/recycled water supply from HUDA recycled water supply system as and when the system is made available and colonizer is asked by HUDA for connection.
29. **Special conditions:-**

- You have to dismantle and relocate his service even after laid, wherever required to suit the size, capacity and levels of HUDA services in the area/sector, if any.
- These services at later stage, if required, will have to correlate with the services falling in the land of other licensee/developer adjacent to the licensed land and you have to re-lay and relocate for their size, capacity and levels to give continuity of proper approach, to maintain the loops and grid of water supply distribution line and functioning of sewer and storm water drainage & other services in the public interest. You have to obtain prior permission from the concerned authority, if the services are to be laid through revenue rasta or other land before laying of services. It will be ensured by you to install bouble button system in flushing cistern in all toilets in various building to be constructed in his licensed area.
- Similarly, the common services if decided to be laid by HUDA along 24 wide road/master roads against the development charges charged by HUDA for common benefit of all developers in the sector, you shall have to dismantle and relocate his already laid services, wherever required to suit the size, capacity and levels of HUDA services in the area/sector.
- Permission for competent authority shall be obtained prior to boring/drilling of tube wells. Further, approval of service plan/estimate with tube well provision does not entitle the colonizers to drill tube well. It is pertinent to mention here at present HUDA has not laid master water supply in the area. Water so obtained from tube well shall be used only for drinking purposes and shall not be used for construction purpose.

30.

**Common Services:-**

- (i) The estimates does not include the common services like water supply, storage tank on the top of the building block, the plumbing works etc. and will be part of the plumbing work.
- (ii) The firm will provide solar water heating system as per the guidelines issued by the Haryana Govt./Ministry of Environment, Govt. of India.

31. **Construction activity of project:**

- a) It is clearly stated that the firm/developers shall not be allowed to carry out the construction with underground water.
- b) The firm shall also show the source from where the water supply will be taken for construction purpose.

**NOTE(1):-**

In order to implement the directions given by National Green Tribunal dated 26.11.2014, 04.12.2014 and 19.01.2015 in original Application No. 21 of 2014 in the matter of Vardhman Kaushik V/so Union of India and Ors, the following instruction issued vide letter No. 2613 dated 5.3.2015 be incorporated for implementation at site:-

- i) 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 be 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 send 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, send 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 28.4.2015 in OA No. 21 of 2014 and OA No. 95 of 2014 in the matter of Vardhman Kaushik V/so Union of India and Ors, the following instruction issued vide letter No. CEIEE-W/CHD(G)/4971-89 dated 30.4.2015 shall be complied with in the construction work:-

- i) All the direction contained in our order dated 4<sup>th</sup> December, 2014 shall continue to be in force and the Authorities concerned would carry out the said directions in their true spirit and substance.
- ii) 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.
- iii) 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/sent.
- iv) Immediately upon receipt of such complaint, the concerned Authority and for Authorities the designed Officers would proceed to take action in accordance with law.
- v) 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.
- vi) 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 afore indicated, be not directed to pay compensation as may be determined by the Tribunal in accordance with law.
- vii) 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.

viii) 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.

ix) NGT has directed that there is no burning of leaves or horticulture residue, all the Composting pits area-wise prescribed. 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.


x) 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.

xi) The composting sites should be provided nearer to the places where there is a large numbers of trees, gardens and compost bits 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.

xii) Decision in regard the land fill sites should be taken expeditiously as possible in any case not later than three weeks from 28.04.2015. Such adequate number of sites if not earmarked, should be identified by the respective Corporations and Authorities if not done so far.

xiii) 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 is 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 of the same by giving it to the Authorized Dealer in accordance with 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.

  
(Ravi Sihag)  
District Town Planner (HQ)  
For Director General, Town & Country Planning  
Haryana, Chandigarh

Endst. No. LC-2613-PA(B)-2016/

Dated :

A copy is forwarded to the Chief Administrator, HUDA, Panchkula with reference to his office Memo No. 16176 dated 29.12.2015 for information and necessary action.

(Ravi Sihag)  
District Town Planner (HQ)  
For Director General, Town & Country Planning  
Haryana, Chandigarh

C.E. No.  
Dated

Annexure-A

SUB:-

Approval of Service plan estimate for Commercial Colony on the land measuring 5.846875 acres (license No. 93 of 2012 dated 5.9.2012, No. 30 & 31 of 2014 dated 12.6.2014) in Sec-102, Gurgaon Manesar Urban Complex developed by Radhik Polymers & Others in collaboration with Clarion Properties 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 confirmed before execution.
3. The material to be used shall be 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.


418

C.E. No.

Dated:-

8. Only C.I/D.I pipes will be used in water supply and flushing system, UPVC/H pipe for irrigation purposes.
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 being adopted in Haryana Public Health Engineering Deptt. or HUDA.
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 approved X-section and specifications.
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.

For

  
Executive Engineer (W),  
Chief Administrator, HUDA,  
Panekula

2/11/15



**PROPOSED COMMERCIAL COMPLEX  
SECTOR – 102 AT GURGAON**

**SERVICE ESTIMATE**

**: Client :**

**M/S. RADHIKA POLYMERS & OTHERS IN COLLABORATION WITH  
CLARION PROPERTIES LTD.**



**A-2/1, Africa Avenue Road,  
Safdarjung Enclave, New Delhi-29  
Tel: 011- 43235235 (20 Lines)  
E-Mail:- saa@saaindia.net**

**: Service Consultants:**

**M/s. Techno Engineering Consultants.  
30-D, Pocket – A,  
Siddhartha Extension,  
New Delhi - 110014  
Telefax: 011-26344668**



# INTERNAL DEVELOPMENT DESIGN REPORT AND COST ESTIMATE FOR COMMERCIAL COLONY AT SECTOR - 102, GURGAON

## REPORT

Gurgaon town of Haryana State is situated on Delhi - Jaipur National Highway No.8 at a distance of 38 kms from Delhi. Being in the national capital Region, the town has fast developing tendency and potential. Further, it has also started sharing the growing Industrial load of Delhi. In order to relieve the growing pressure of population in National Capital of Delhi, it has been decided by the Haryana Government to establish various Sectors along with infrastructure facilities in Gurgaon. This report is for **Commercial Colony at Sector - 102, Gurgaon for Radhika Polymers and others in collaboration with Clarion Properties Ltd.**

### WATER SUPPLY SOURCE

At present the source of water supply in this area is borewell. It may be noted that HUDA is laying main water trunk lines in the vicinity of the development to supply potable water to the PROPOSED SITE and adjoining areas. Therefore, it is proposed to provide 1 No. of borewell as supplementary source to the HUDA water supply network. As the underground water is potable, provision for one number of borewell have been made in this estimate. It has been proposed to construct underground tanks of capacity as per attached details, for domestic purpose. The underground tanks will be filled up from the proposed borewell or HUDA riser and the water will be pumped to the tanks proposed on the roof of the building. The building is being constructed for shopping areas, offices, multiplex and service apartments utility.

### DESIGN:

The scheme has been designed for population as given in attached sheets.

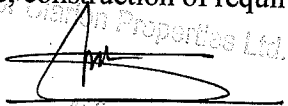
### PUMPING EQUIPMENTS

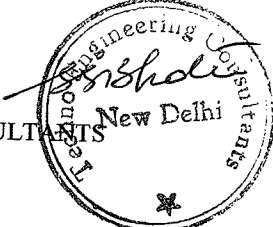
It has been proposed to install pumping set as described with standby of equal capacity. The provision for standby generating set has also been provided in case of any electricity failure. Generator will be provided separately or added to the capacity of main generator.

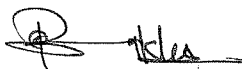
### SEWERAGE SCHEME

This scheme is designed for sewer connecting to proposed STP within the complex. The sewerage system has been marked on the 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 75% 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 pipe sewer line, construction of required number of manholes etc., have been made in the estimate.

  
Authorized Signatory  
TECHNO ENGINEERING CONSULTANTS  
New Delhi



  
raman sikka R- 1  
REGN. No. 93/16497

Necessary design statement for entire sewerage system has been prepared and attached with estimate.

### **STORM WATER DRAINAGE**

Storm water line from the proposed site will be connected to the existing storm drain.

### **SPECIFICATIONS**

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

#### **Roads :**

Cost of road has been taken in the estimate.

#### **Street Lighting**

Provision for external lighting of proposed area has been made.

#### **Horticulture**

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

#### **Rates**

The estimate has been based on the present market rates.

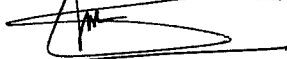
#### **Cost:**

The total cost of the scheme, including cost of all services works out to be Rs. ~~317~~ <sup>436.00</sup> lacs  
(~~Rupees Three Crores Seventeen Lacs Only~~) including 3% contingencies @ 49%  
departmental charges, <sup>354.55</sup> price escalation, unforeseen, Belum. <sup>511.55</sup>

**For Radhika Polymers and others in collaboration with Clarion Properties Ltd.**

Authorized Signatory

For Clarion Properties Ltd.



Authorized Signatory



PROJECT: 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102,  
GURGAON

### FINAL ABSTRACT OF COST

Amount in Rs. Lacs

SUB WORK NO. I	WATER SUPPLY	<del>42.25</del> 84.68 <del>109.80</del> 145.64
SUB WORK NO. II	SEWERAGE	<del>65.60</del> 107.55 <del>41.84</del> 61.00 <del>43.40</del>
SUB WORK NO. III	STORM WATER DRAINAGE SYSTEM	<del>17.42</del> 33.40 37.98
SUB WORK NO. IV	ROAD WORK	<del>23.70</del> 26.35 <del>48.25</del> 95.48
SUB WORK NO. V	STREET LIGHTING	<del>7.91</del> 13.45 22.39
SUB WORK NO. VI	PLANTATION & ROAD SIDE TREES	<del>9.31</del> 9.50 10.90 3.45
SUB WORK NO. VII	SERVICES & RESURFACING OF ROADS	145.60 <del>63.70</del> 96.70 146.70 511.54
	<b>TOTAL</b>	<del>436.00</del> 316.92 <del>352.94</del>
	<b>SAY</b>	317.00 <del>354.50</del> 436.00

(Rupees Three Crores Seventeen Lacs only)

Cost Per Acre to  $\frac{436.00}{5.847} = Rs. 74.57$  per Acre  
 5.847 AC  $\times$  74.57 = Rs. 436.00  
 SAY Rs. 436.00 Lacs

### AUTHORIZED SIGNATORY

For techno Engineering Consultants Ltd.

*[Signature]*  
Authorized Signatory



*[Signature]*  
Superintending Engineer  
HUDA Circle No. 1,  
Gurgaon

*[Signature]*  
Director General  
Town & Country Planning,  
Haryana, Chandigarh

*[Signature]*  
Executive Engineer,  
HUDA Division No. V,  
Gurgaon

Checked subject to comments  
in forwarding letter No. ....16.17 6  
Dt. 29/12/15 and notes  
attached with the estimate

*[Signature]*  
Executive Engineer (W)  
for Chief Engineer  
HUDA Panchkula

**PROJECT: 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102, GURGAON**

SUB WORK No. 1

Water Supply

1.	Sub Head No. 01	Head Works	<del>12,88,500.00</del> 32.25	las
			<del>25,63,000.00</del>	
2.	Sub Head No. 02	Pumping Machinery	<del>22,40,000.00</del> 44.50	las
			<del>26,40,000.00</del>	
3.	Sub Head No. 03	Rising Main from HUDA	<del>57,000.00</del> 1.46	las
			<del>2,39,500.00</del>	
4.	Sub Head No. 04	Fire Piping	<del>13,88,000.00</del> 10.98	las
			<del>11,65,625.00</del>	
5.	Sub Head No. 05	Garden Irrigation Piping	<del>5,44,500.00</del> 5.73	las
			<del>64,000.00</del>	
		<b>TOTAL</b>	94.90 <del>71,52,625.00</del>	
			<del>55,18,000.00</del> 73.13	
		Add 3% contingencies & PH Charges	2.85 <del>1,65,540.00</del>	
			<del>2,14,579.00</del>	
		<b>TOTAL</b>	97.75 <del>56,83,540.00</del>	
			<del>73,67,204.00</del>	
		Add 49% Departmental charges	47.89 <del>27,84,934.60</del>	
			<del>36,09,930.00</del>	
		<b>GRAND TOTAL</b>	145.64 <del>84,68,474.60</del>	
		<b>SAY</b>	<del>1,09,77,134.00</del>	
			<b>Rs. 84.68 Lacs.</b>	

109.80 Lacs

112.25

For Clifton Properties Ltd.

*[Signature]*  
Authorized Signatory



*[Signature]*

**PROJECT: 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102, GURGAON**

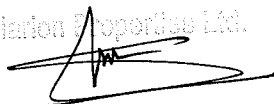
Sub Work No. I  
Sub Head No. 01

Water Supply  
Head Works  
Amount in Rs.

1. Boring and installing 510 mm i/d borewell with reverse rotary rig Complete with pipe and strainer to a depth of about 120 metre 1 Nos. @ Rs. 4,00,000/- each.	Rs. <del>400000.00</del> 10-5 <del>400000.00</del> 1000000
2. Provision for rising mains, connecting borewells with water main and Bye-pass arrangements. a) 80 mm x 55 M @ Rs. 1000/- per RM	Rs. <del>55000.00</del> 1250 68,750.00
3. Provision of water supply <del>rise to OFF</del> <sup>Dom-cy Flushing Distribution</sup> from Pump room.	Rs. <del>105000.00</del> 1.14 Lacs 2,18,750.00
Dom 50 a) 50 mm x 175 M @ Rs. 600/- per RM	Rs. <del>160000.00</del>
Dom 100 b) 80 mm x 160 M @ Rs. 1000/- per RM	Rs. <del>160000.00</del> 2,63,000.00
4. Providing and fixing valve: 100 50 dia 1 Nos. @ Rs. 2500/- per valve 100 80 dia 2 Nos. @ Rs. 4000/- per valve	Rs. <del>2500.00</del> 2500/- Rs. <del>4000.00</del> 2400/-
5. Provision for carriage for materials L.S.	Rs. 25000.00
6. Construction of U.G. tanks <sup>3500</sup> 365 KL Rs. 1400/ KL incl. 200 KL for Fire Fighting <sup>ed 100 KL for</sup> <sup>Flushing Tank near STP</sup> 365 + 100 = 465 KL	Rs. <del>497000.00</del> 1,62,750.00 <del>12,42,500.00</del>
7. Provision for Construction of tubewell chamber Size 1.50 x 1.50 x 1.50 M for housing Tubewell - 1 nos. @ Rs. 40,000/- each	Rs. <del>40000.00</del> 1,00,000.00 32.25 Lacs
<b>TOTAL</b>	Rs. <del>12,88,500.00</del> 25,63,000.00

(C.O. cost to final abstract of cost S.W. NO.1).

For Clarion Properties Ltd.

  
Authorised Signatory





**PROJECT: 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102, GURGAON**

Sub Work No. 1  
Sub Head No. 02

Water Supply  
Pumping Machinery  
Amount in Rs.

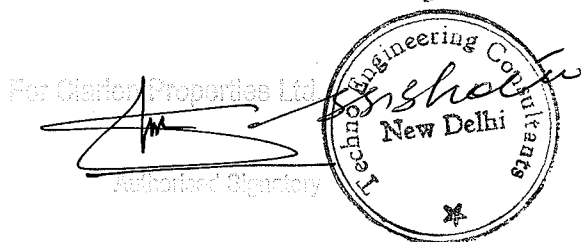
1. Providing and installing electricity driven submersible pumping Set capable of delivering about 14 KL / Hr. of water against a total Head of 65 M complete with motor and other accessories.  
- 1 Nos. @ Rs. 2,00,000/- Rs. 2,00,000.00
2. Provision for diesel engine genset each for standby arrangements For T.W. & Booster Pump complete with following capacities.  
- 1 No. 40 KVA @ Rs. 3,00,000/-  
4,00,000 Rs. 3,00,000.00  
4,00,000.00
3. Providing & installing pumping set of following capacity For fire protection  
- 180 lpm at 100m Head 2 Nos. @ Rs. 2,50,000/- [elect.] Rs. 5,00,000.00  
2,00,000.00  
- 2850 lpm at 100m Head 1 No. @ Rs. 9,50,000/- [diesel] Rs. 9,50,000.00  
- 2850 lpm at 100m Head 2 Nos. @ Rs. 3,25,000/- each [elect.] Rs. 6,50,000.00  
7.50 15.00
4. Providing Boosting pumps: 2,50 lpm  
- Domestic pump= Cap. 15 KLH at 75M head, (7.5 HP)  
(1+1) 2 Nos. @ Rs. 50,000/- each 1.00 Rs. 2,00,000.00  
- Flushing pump= Cap. 9 KLH at 75M head, (5 HP)  
(1+1) 2 Nos. @ Rs. 35,000/- each 1.00 Rs. 70,000.00  
Sound
5. Provision for chlorination plant complete 1 nos. @ Rs. 50,000/-  
Each (L.S) Rs. 50,000.00
6. Provision for making foundations and erection of Pumping Machinery (lumpsum) Rs. 50,000.00
7. Provision for pipes, valves and specials inside the pump Chamber and boosting chamber. (lumpsum) Rs. 2.00  
60,000.00
8. Provision for electric service connection including electrical Fittings for tube-well and boosting chamber etc. (lumpsum) Rs. 2.50  
60,000.00  
Cost of Transformer
9. Provision for carriage of material and other unforeseen Items etc. L/S Rs. 50,000.00

**TOTAL**

**Rs. -22,40,000.00**

(C.O. cost to final abstract of cost S.W. NO.1)

22,40,000.00  
44.50 Lacs



TECHNO ENGINEERING CONSULTANTS

raman sikka  
REGN. No. 93/16497

SE- 4 of 13

**PROJECT: 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102, GURGAON**

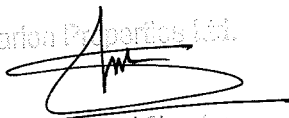
Sub-Work No. 1  
Sub Head No. 03

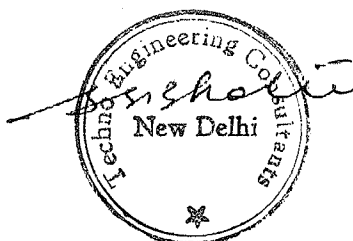
Water Supply  
Rising Main from HUDA  
Amount in Rs.

		21/06
1. Providing, laying, jointing and testing <del>GI</del> pipe lines Including cost of excavation etc. complete in all respects. 100-65 mm dia. 15 m @ Rs. 750/-M 1250	Rs.	-11,250.00 18,750.00
2. Providing and fixing valves including cost of surface boxes And masonry chambers etc. complete in all respects. 100 -65mm i/d 1 No. @ Rs. 1000/- each	Rs.	12000/- -5,000.00
3. Providing and fixing indicating plates for valves and air valves 1 No. @ Rs. 750/- each 1800	Rs.	1600 750.00
4. Provision for carriage for materials and other Unforeseen items (L/S)	Rs.	15,000.00
5. Provision for cutting of roads and making good to its original Conditions. (L/S)	Rs.	<del>4,00,000.00</del> 0.50 10,000.00
6. Provision for making connection with HUDA line on main road (L/S)	Rs.	-15,000.00 <del>4,00,000.00</del> 250000 0.50
<b>Total</b>	<b>Rs.</b>	<b>-57,000.00 389500</b> <b>2,39,500.00 1.46</b> <b>Say Rs 3.90 Lacs.</b>

(C.O. cost to final abstract of cost S.W. NO.1).

For Clarion Properties Ltd.

  
Authorized Signatory







**PROJECT: 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102, GURGAON**

Sub-Work No. 1  
Sub Head No. 04

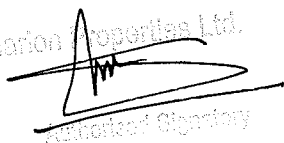
Water Supply  
Fire Piping  
Amount in Rs.

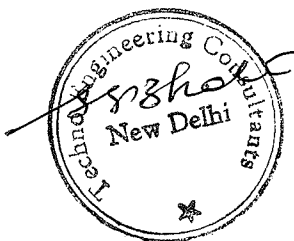
1.	Providing , laying , jointing and testing MS pipe lines Including cost of excavation etc. complete in all respects. - 150 mm dia. <sup>615</sup> m @ Rs. <sup>2000</sup> /-M <sub>550 1575</sub>	Rs.	<sup>8.66</sup> <del>12,30,000.00</del> <sup>9,68,625.00</sup>
2.	Providing and fixing valves including cost of surface boxes And masonry chambers etc. complete in all respects. - 150mm i/d 5 Nos. @ Rs. <sup>8000</sup> /- each <sub>15000</sub>	Rs.	<sup>0.75</sup> <del>40,000.00</del>
3.	Providing and fixing indicating plates for valve and air valves 5 Nos. @ Rs. 1000/- each	Rs.	5,000.00
4.	External fire hydrants etc. 13 nos. @ Rs. <sup>6000</sup> <sub>10000</sub> /- each	Rs.	<del>78,000.00</del> <sup>1.30</sup> Lacs <sup>1,17,000.00</sup>
5.	Provision for carriage for materials and other Unforeseen items(L/S)	Rs.	<sup>0.10</sup> Lacs <del>25,000.00</del>
6.	Provision for cutting of roads and making good to its original Conditions. (L/S)	Rs.	10,000.00
<b>Total</b>		Rs.	<b><del>13,88,000.00</del></b> <sup>14,65,625.00</sup>

(C.O. cost to final abstract of cost S.W. NO.1).

Say Rs. <sup>14,65,625.00</sup> ~~14,70,000.00~~ <sup>10.96</sup> Lacs

For Clarion Properties Ltd.

  
Authorized Signatory





**PROJECT: 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102,  
GURGAON**

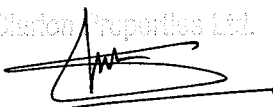
Sub-Work No. 1  
Sub Head No. 05

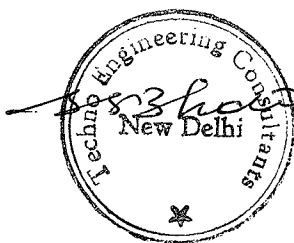
Water Supply  
Garden Irrigation Piping  
Amount in Rs.

1. Providing, laying, jointing and testing pipe lines conforming to IS:4955 Including cost of excavation etc. complete in all respects. - 65 mm dia. 630 m @ Rs. 750/-M	Rs. 4,72,500.00
2. - 25 mm dia. 15 m @ Rs. 400/-M (L.S.)	Rs. 6,000.00 8-25 Lacs
2. Providing and fixing ball valves including cost of surface boxes And masonry chambers etc. complete in all respects. - 65 mm i/d 4 Nos. @ Rs. 5000/- each	Rs. 20,000.00
- 25 mm i/d 13 Nos. @ Rs. 2000/- each 3500/-	Rs. 46,000.00
3. Provision for carriage for materials and other Unforeseen items (L/S)	Rs. 10,000.00
<del>4. Provision for cutting of roads and making good to its original Conditions (L/S)</del>	<del>Rs. 10,000.00</del> <del>10000</del>
<b>Total</b>	<b>Rs. 5,44,500.00 634000/-</b> say Rs. 6.40 Lacs. 5.73 Lacs

(C.O. cost to final abstract of cost S.W. NO.1).

Per Charan Properties Ltd.

  
Authorized Signatory





**PROJECT: 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102,  
GURGAON**  
Sub-Work No. II

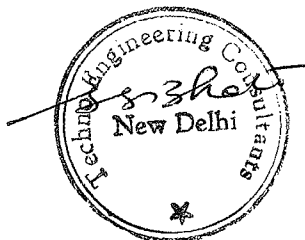
Sewerage Scheme  
Amount in Rs.

1.	Providing, jointing, cutting and testing SW pipe class "A" and lowering into trenches including cost of Excavation, bed concrete, cost of manholes etc. Complete.		
	a) SW pipe 200 mm i/d 480M @ Rs. 800/M 1250	Rs.	<del>6,06,250.00</del> <del>388000.00</del> 6.00 lacs <del>7275.00</del>
2.	Provision for lighting and watching	Rs.	50000.00
3.	Provision for carriage of material (L.S)	Rs.	25000.00
4.	Provision for making connection with HUDA sewer	Rs.	25000.00 128000.00
5.	Sewage treatment plant of Capacity 200 KLD <i>upt. tertiary level treatment</i>	Rs.	<del>650000.00</del> 6.50 lacs 300000.00
6.	Provision for temporary disposal arrangement till such time HUDA services are made available <i>ex vent pipe</i>	Rs.	<del>50000.00</del> 250000.00
	<b>TOTAL</b>	Rs.	<del>7008000.00</del> 42,72,800.00 39.75 Rs 210240.00 28,26,250.00 1.19 128175.00 84,787.50
	Add 3% contingencies & PH charges		
	<b>TOTAL</b>	Rs.	<del>7218240.00</del> 29,11,038.00 40.94 Rs 4100675.00 28,037.50 20.06 Rs 256230.00 1426408.00 3536937.60 13,75,939.00
	Add 49% Departmental charges, Price Escalation, Unforeseen Admn.		
	<b>Total</b>	Rs.	<del>6557005.45</del> 45,83,916.00 61.00 Rs 10755177.60 43,37,446.00
	<b>Say</b>	Rs.	<del>107.55 Lacs</del> 41.84 Lacs 43.40 lacs Say Rs. 65.60 lacs.

(C.O. to final abstract of cost).

For Clarion Properties Ltd.

*[Signature]*  
Authorized Signatory



*[Signature]*

raman sikka

REGN. No. 93/16497

**PROJECT: 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102, GURGAON**

Sub-Work No. III

Storm Water Scheme  
Amount in Rs.

1.	Providing, laying, RCC pipe class NP-3 including manholes etc. complete in all respects		
	a) 400 mm dia RCC pipe 450 M @ 800/M	Rs.	<del>10,12,500.00</del>
	<del>a) 150 mm dia RCC pipe 50 M @ 350/M</del>	Rs.	<del>17,500.00</del>
			<del>50,000.00</del>
2.	Provision for road gullies & connecting pipe L.S.	Rs.	1,00,000.00
3.	Provision for rainwater harvesting arrangements @ Rs. 1.0 lacs per acre for approx 5.84 acres.	Rs.	<del>5,84,000.00</del>
	4 Nos Pits @ 2.50 Lacs each		
4.	Provision for timbering & shoring (L.S.)	Rs.	50,000.00
5.	Provision for lighting, watering and timbering drains & other unforeseen charges	Rs.	<del>1,00,000.00</del>
			<del>30,000.00</del>
6.	provision for carriage of material		<del>50,000.00</del>
7.	provision for masonry connection with NDDA on main road.	Rs.	<del>2,06,000.00</del>
			<del>11,35,500.00</del>
			<del>21,76,500.00</del>
	Add 3% contingencies & P.H. charges	Rs.	<del>34,065.00</del>
			<del>65,295.00</del>
	Total	Rs.	<del>11,69,565.00</del>
			<del>22,41,795.00</del>
	Add 49% Departmental charges, Price Escalation, Unforeseen Admn.	Rs.	<del>10,98,480.00</del>
			<del>5,73,086.85</del>
			<del>33,40,275.00</del>
	TOTAL	Rs.	<del>17,42,651.85</del>
	Say	Rs.	<del>17.42 Lacs</del>
			<del>33.40 Lacs</del>

(C.O. cost to final abstract of cost).

For Clarion Properties Ltd.  
Authorized Signatory



*Raman Sikka*

**PROJECT: 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102,  
GURGAON**

Sub Work No. IV

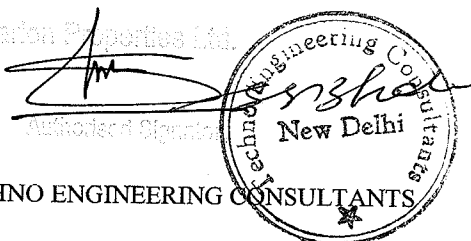
Road work

<u>Width in M.</u>	<u>Length in M.</u>	<u>Metalled Portion</u>	<u>Area in Sq.M.</u>
6.0	550	6.00	3300.00
Total			3300.00
<del>Add 10 % for Curves</del>			<del>330.00</del>
Parking = 125 x 5 x 2.5 =			1562.50
<b>Grand Total</b>			<b>5192.50</b> 4862.50
Say			4865 <del>5200 sq.m</del>

Amount in Rs.

1. Provision for leveling earth and filling as per site conditions, approx 5.84 acres @ 65,000/acre	Rs. 8.76 Lacs <del>3,79,600.00</del> 5,84,000.00
2. i) Soling cost 100 mm thick (63-45)mm gauge compacted to 75 mm thick WBM conforming to MOT specifications (Table 400-6, Grading 2)	
ii) Wearing Coat (Top Coat) 100 mm thick (53-22.4) mm gauge compacted to 75 mm thick conforming to MOT specifications (Table 400-6, Grading 3)	
iii) 25 mm thick premix carpet with seal coat	48.65 Lacs
4865 5200 Sq.M. @ Rs. 175/Sq.M. 1000/-	Rs. 3978000/- <del>9,10,000.00</del> 20,80,000.00
3. Provision for kerbs and channels	
550 M @ Rs. 300/M	Rs. 2,25,000.00 <del>2,25,000.00</del>
4. Provision for making approach and pavement to building	Rs. 1,65,000.00
5. Provision for parking arrangement [L.S.]	Rs. 1,00,000.00 0.50
6. Provision for carriage of materials	Rs. 4,00,000.00 0.50
Total	Rs. 50,000.00 54,52,000.00
Add 3 % contingencies and P.H. Charges	Rs. 17,14,600.00 31,44,000.00
Total	Rs. 51,438.00 24,320.00
	Rs. 17,69,038.00 16,35,600.00
Add 49% Departmental charges, Price Escalation, Unforeseen Admn.	5615560/- 32,38,320.00
Total	2751624.40
	Rs. 8,66,828.62 15,86,777.00
	Rs. 26,35,866.62 48,25,097.00
	8367184.40
Carry Over to Final Abstract of cost	Rs. 26.35 Lacs:
Say	48.25 Lacs
	Say Rs. 83.70 Lacs.

For Shree Properties Ltd.



TECHNO ENGINEERING CONSULTANTS

raman sikka  
REGN. No. 93/16497

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**PROJECT: 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102,  
GURGAON**

Sub Work No. V  
Sub-Head No. 01

Street Lighting

**Amount in Rs.**

1. Providing street lighting on roads as per  
standard specifications of HVPN *with CFL*  
approx 5.84 acres @ ~~70,000/acre~~  
*250000*

*14.60 Lacs*  
~~8,76,000.00~~  
Rs. ~~4,08,800.00~~ *0.43 Lacs*

Add 3 % contingencies and P.H. Charges

*26,280.00*  
Rs. ~~1,22,640.00~~  
Rs. ~~5,31,440.00~~ *15.03 Lacs*

Total

Add 49% Departmental charges, Price Escalation,  
Unforeseen Admn.

*9,02,280.00*  
~~4,42,117.00~~ *7.36 Lacs*  
Rs. ~~2,60,405.60~~

Total

Rs. ~~7,91,845.60~~ *22.39 Lacs*  
*13,44,397.00*

Carry Over to Final Abstract of cost

Say

Rs. ~~7.91 lacs~~  
*13.45 Lacs*

For Gurgaon Properties Ltd.  
  
Authorized Signatory





**PROJECT: 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102,  
GURGAON**

Sub Work No. VI  
Sub-Head

Plantation & Road side Trees

**Road side trees. (Amount in Rs)**

1. **Development of lawn areas**

- a) Trenching the ordinary soil up to dept of 60 cm including removal and stacking of serviceable material and disposing of by spreading and leveling within a lead to 50m an and making up the trenches area of proper leads 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 roof area

- c) Grassing with "Doob Grass" including watering and maintenance of lawns for 30 days till the grass a thick lawn, free weeds and fit for moving in rows 7.5m apart in either direction including provision for hedges and barbed wire fencing around park.

Approx. ~~5.84~~ acres @ Rs.-80,000 per acre.  
1.00 180000

Rs. 1.50 Lacs  
~~4,67,200.00~~  
~~5,84,000.00~~

2. Provision of trees, guards and planting trees along road at 12 M intervals for 6m wide road

Total Road Length = 550 M  
No. of trees 550/12 = 45.83  
Say = 46.0 trees.

Cost Details.  
Excavation = Rs. 25.00 30  
Manure = Rs. 25.00 60  
Tree Plant = Rs. 25.00 60  
Tree Guard = Rs. 225.00 600  
Total = Rs. 300.00 750

46 trees @ <sup>750</sup>300/tree  
100 1200/- 750/-

per Client's Requirement  
  
Authorised Signatory

Rs. ~~120000~~ 0.75  
~~34,500.00~~  
13,800.00

Total Rs. ~~10,40,000.00~~  
2.25 Lacs ~~4,81,000.00~~  
0.07 Lacs Rs. ~~6,18,500.00~~  
1,44,300.00 2,11,20.00  
12,555.00

Total Rs. ~~6,25,300.00~~ 725+20.00  
1.13 Lacs ~~6,37,055.00~~

3.45 Lacs Rs. ~~3,06,397.00~~ 355308.80  
~~3,12,157.00~~ 10,80,428.00

Total Rs. ~~9,31,697.00~~ 9,49,212.00  
SAY Rs. ~~9.31 lacs~~

(C.O. to final abstract of cost)



TECHNO ENGINEERING CONSULTANTS

raman sikka  
REGN. No. 93/16497

SE- 12 of 13

4.50 Lacs  
10.90 Lacs



**PROJECT: 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102,  
GURGAON**

Sub Work No. VII  
Sub-Head

**Services & Resurfacing of Roads**

Sl. No.	Description	Unit	Qty	Rate in Rs.	Amount in Rs.
1.0	Provision of MTC charges for W/S, SWD & Sewarage, Roads, Street Lighting, Horticulture etc.				
a)	Complete in all aspect, including operational and establishment charges as per HUDA norms for 10 years completion.	Acre	5.84	<del>400000.00</del> 500000.00	<del>2336000.00</del> 29,20,000.00
2.0	Provision of resurfacing of roads MTC one layer of 100 mm thick WBM compacted to 75 mm thick with 25mm thick premix carpet with seal coat.				29.19 Lacs
a)	Resurfacing of road after 5 year of MTC	Sq.m	4865	<del>5200</del> 600.00 <del>3300</del> 300.00	<del>1820000.00</del> 990000.00
b)	Resurfacing of road after 5 year of MTC	Sq.m	4865	<del>5200</del> 750.00 <del>3300</del> 250.00	<del>1820000.00</del> 825000.00
	Sub Total			8 94.86 Lacs	<del>7600000.00</del> <del>6300000.00</del> 4151000.00
	Add 3% contingencies & PH charges			8 2.84 Lacs	<del>189000.00</del> 124330.00
	Sub Total			8 97.72 Lacs	<del>7828000.00</del> <del>6429000.00</del> 4275530.00
	Add 49% Departmental charges, Price Escalation, Unforeseen Admn.			8 47.88 Lacs	<del>3179600.00</del> 2095009.70
				145.60 Lacs	<del>11613720.00</del> <del>9668610.00</del> 6370539.70
	Total				63.70 lacs
	Say				96.70 Lacs
					146.70 Lacs

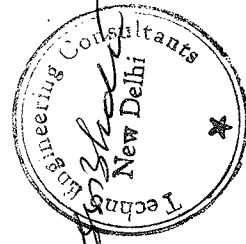
(C.O. to final abstract of cost)



For Clarification Properties Ltd.  
  
Authorized Signatory

**PROJECT: 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102, GURGAON**  
**SUBJECT: POPULATION & WATER DEMAND CALCULATIONS**

S. NO.	UNIT NAME	TYPE OF OCCUPANCY	TOTAL BUILT UP AREA IN SQ. M. (DATA GIVEN BY ARCHT.)	POPULATION	WATER REQUIREMENT PER PERSON (LPCD)		POTABLE WATER DEMAND (LPD)	FLUSHING WATER DEMAND (LPD)
					POTABLE	FLUSHING		
I. DOMESTIC WATER DEMAND								
Block-A								
a)	Lower Ground Floor-Hyper Market	Mercantile						
	Permanent Population @ 6m <sup>2</sup> /Person		1826.03	305	25	20	7,625	6,100
	Visitors @ 3m <sup>2</sup> /Person (Less permanent population)		1826.03	304	9	6	2,736	1,824
b)	Ground floor - Shops	Mercantile						
	Permanent Population @ 10m <sup>2</sup> /Person		9084.33	909	25	20	22,725	18,180
	Visitors @ 6m <sup>2</sup> /Person (Less permanent population)		9084.33	606	9	6	5,454	3,636
				-				
c)	First floor - Shops	Mercantile						
	Permanent Population @ 10m <sup>2</sup> /Person		7279.29	728	25	20	18,200	14,560
	Visitors @ 6m <sup>2</sup> /Person (Less permanent population)		7279.29	486	9	6	4,374	2,916
d)	Second floor							
i)	Shops	Mercantile						
	Permanent Population @ 10m <sup>2</sup> /Person		1009.00	101	25	20	2,525	2,020
	Visitors @ 6m <sup>2</sup> /Person (Less permanent population)		1009.00	68	9	6	612	408
ii)	Restaurant	Assembly						
	Population @ 1.5m <sup>2</sup> /Person (60% diversity)		115.00	47	70	0	3,290	0



For Civil & Structural Engg.  
*[Signature]*  
 Project Engineer

*[Signature]*  
 P. K. Sika



II. TUBEWELLS			
(a)	Yield		
(b)	Working Hours per Day		
(c)	Total water demand		
(d)	Number of Tube wells required. (Water Demand/Discharge/Hours working per day)	165	155- 0.69-
(e)	Add 5% as standby		0.73
	Total		0.03-
	Say		0.73 Nos.
			1.00 Nos.

(Water to the proposed development is to be supplied by HUDA and it is proposed to install the tube-wells for augmentation/standby purposes).

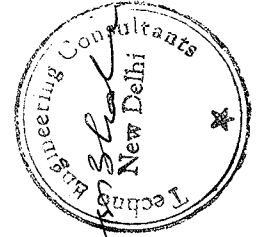
III. PUMPING MACHINERY FOR TUBEWELLS			
(a)	Gross Working Head	80	Meters
(b)	Average fall in S.L	2	Meters
(c)	Depression Head	6	Meters
(d)	Friction loss in main	10	Meters
	Total	98	Meters
(e)	Discharge	14000	LPH
(f)	Horse Power	15000	HP
	HP = $(14000 \times 98 \times 1)/(60 \times 60 \times 75 \times 0.6)$	2.42	
	Say	10.00	HP

IV. UNDER GROUND			
(a)	Total water demand (Daily for Domestic purposes)	165	m <sup>3</sup> /day
(b)	Proposed underground tanks for domestic use. (One day Storage)	165	m <sup>3</sup>
(c)	Minimum Separate Static Storage for fire fighting purpose provided.	200	m <sup>3</sup>
	TOTAL	365	m <sup>3</sup>



*[Signature]*

V. (A) BOOSTING MACHINERY (Water Supply Pumps)				
(a)	Daily Domestic Water Demand	165		m <sup>3</sup> /day
(b)	Discharge per hour @ 12 hr. pumping / day	13.75		m <sup>3</sup> /Hour
	Say	22.5		LPM
(c)	No. of Working pump	250		
(d)	Proposed Pump discharge (Working)	1.0		LPM
	Say	250		LPM
	Gross Working Head	250		LPM
(a)	Suction lift – positive suction	6		Meters
(b)	Frictional Loss in Mains & Specials	10		Meters
(c)	Max Clear Head required	58.2		Meters
	Total	74.2		Meters
	H.P. of each pump required	250 x 7.5 = 1875		
	Pump H.P.	6.94		HP
	Say	7.50		HP



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V.(B) BOOSTING MACHINERY ( Flushing Supply Pumps from STP)									
	Daily Flushing Water Demand		110					m <sup>3</sup> /day	
(a)	Discharge per hour @ 12 hr. pumping / day		9.17	400				m <sup>3</sup> /Hour	
(b)	Say			9.000				LPM	
(c)	No. of Working pump		152.87	150.00			1		
(d)	Proposed Pump discharge (Working)								
	Say		160	150.00				LPM	
	Gross Working Head			160				LPM	
(e)	Suction lift - positive suction							Meters	
(f)	Frictional Loss in Mains & Specials						6	Meters	
(g)	Max Clear Head required						10	Meters	
	Total						58.2	Meters	
							74.2	Meters	
(h)	H.P. of each pump required (Pump H.P.)		160 x 75 450 x 0.6	4.44				HP	
	Say			4.12					
							5.0	HP	
V.(C) PUMPS FOR FIRE PROTECTION									
S. No.	Parameters		Location in pump room						
a)	Discharge in lpm		Diesel	Jockey	Fire	Sprinkler			
b)	Head in meters		2850	180	2850	2850			
c)	HP		100	100	100	100			
d)	Quantity in Nos.		120	10	120	120			
			1	2	1	1			
VI. GENERATING SETS									
1	HP of Tube well pump				10.00				
2	HP of Domestic Pump				7.50				
3	HP of Flushing Pump				5.00				
4	HP of Jockey Pump				20.00				
	Total			31.70	42.50	HP			
	in KW				32.30	KW			
	in KVA			39.62	40.38	KVA			
	SAY				40.00	KVA			

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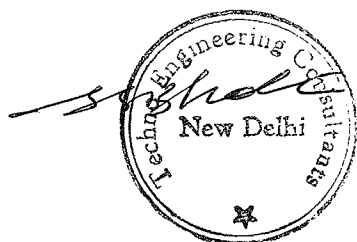


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PROJECT: 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102, GURGAON

SUBJECT: WATER SUPPLY PIPES SHEET

S. No.	Line Designation	Size of Pipe Provided	Length of pipe metres
		mm	
1.0	WATER SUPPLY		
1.1	UGT-W1	100 80	21
1.2	W1-W2	100 80	137
1.3	W2-W3	50	172
	TOTAL FOR 50 DIA (172M SAY=175M)		175
	TOTAL FOR 80 DIA (21+137M=158M SAY=160M)		160
	100 TOTAL PIPING		
2.0	MUNICIPAL LINE		
2.1	MUNICIPAL LINE - UGT	100 65 100	12
	TOTAL PIPE 65 DIA (SAY)		15
3.0	BOREWELL LINE		
3.1	BOREWELL LINE - UGT	80 100 mm	52
	TOTAL PIPE 80 DIA (SAY)		55
		100	



For (Client) Properties Ltd.  
  
 Signed Client Representative

TECHNO ENGINEERING CONSULTANTS

raman sikka  
 REGN. No. 93/16497

MS- 1



PROJECT: 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102, GURGAON

SUBJECT: FLUSHING WATER SUPPLY MATERIAL SHEET

S. No.	Line Designation	Size of Pipe Provided mm Dia	Length of pipe metres
1	STP-FL1	100 <del>65</del>	11
2	FL1-FL2	100 <del>65</del>	38
TOTAL PIPE OF 100 DIA			49
SAY			50m



For Clifton Properties Ltd.

raman sikka

REGN. No. 93/16497

TECHNO ENGINEERING CONSULTANTS

MS-2

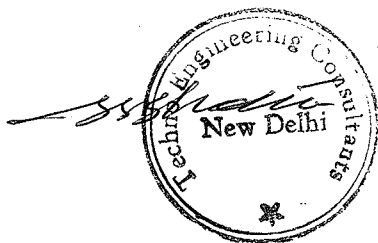
PROJECT: 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102, GURGAON

SUBJECT: MATERIAL SHEET FOR EXTERNAL FIRE FIGHTING

S. No.	Node No		Dia of Pipe (mm)	Length (m)
1	PLANT ROOM	F1	150	3
2	F1	F2	150	97
3	F2	F3	150	103
4	F3	F4	150	<del>110</del>
5	F4	F5	150	<del>149</del>
6	F5	F6	150	<del>105</del>
7	F6	F1	150	40
TOTAL FOR 150 MM DIA PIPE				<del>613</del> 552
SAY				<del>615</del>

FIRE HYDRANT VALVE=13 NOS.

550 mtr



Authorized Signatory

*R. K. S.*

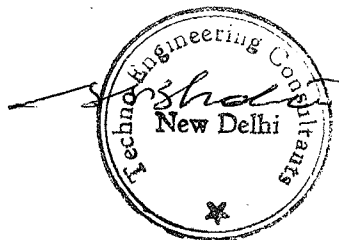
raman sikka  
REGN. No. 93/16497

PROJECT: 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102, GURGAON

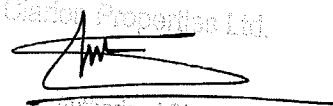
SUBJECT: MATERIAL SHEET FOR GARDEN HYDRANT


S. No.	Node No		Pipe Length (m)	
			65mm dia	25mm dia
1	STP	GH1	9	
2	GH1	GH2	81	1
3	GH2	GH3	137	3
4	GH3	GH4	157	3
5	GH4	GH5	205	5
6	GH5	GH1	36	1
TOTAL			625	13
SAY			630 m	15 m

GARDEN HYDRANT VALVE=13 NOS.



For Clarion Properties Ltd.

  
Authorized Signatory

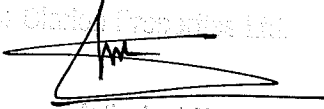
  
raman sikka  
REGN. No. 93/16497

PROJECT: 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102, GURGAON

SUBJECT: SEWERAGE SYSTEM SHEET

S. No.	Sewer Line	Size of Pipe	Length of Line
		mm	Meters
	Block-A		
1	S1 - S2	200	149
2	S2 - S5	200	102
3	S3 - S4	200	177
4	S4 - S5	200	36
5	S5 - STP	200	4
6	Block-B	200	11
	Total 200 Dia Pipe		479
	Say		485



As Clerk, Techno Engineering Ltd.  
  
Authorized Signatory



raman sikka  
REGN. No. 93/16497

PROJECT: 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102, GURGAON

SUBJECT: DRAINAGE SYSTEM MATERIAL SHEET

S. No.	Line No.	Pipe dia in mm	Length in m
<b>Block-A</b>			
1	SD-1 TO SD-2	400	80
2	SD-2 TO RWH-1	400	61
3	SD-3 TO RWH-1	400	49
4	RWH-1 TO EXISTING NALLAH	400	5
5	SD-4 TO SD-5	400	68
6	SD-5 TO SD-7	400	55
7	SD-6 TO SD-7	400	69
8	SD-7 TO RWH-2	400	5
9	RWH-2 TO EXISTING NALLAH	400	11
<b>Block-B</b>			
		<del>150-400</del>	45
Total 400 Dia Pipe			403
SAY			448
Total 150 Dia Pipe			<del>45</del>
SAY			<del>50 m</del>

450 m



For Client / Approval / etc.  
  
 Date: 15/08/2019

raman sikka  
 REGN. No. 93/16497

PROJECT: 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102, GURGAON

SUBJECT: MATERIAL SHEET FOR ROAD WORK

S. No.	Node No		Road Length	
			6m wide	9m wide
1	R1	R2	187	
2	R2	R3	57	
3	R3	R4	103	
4	R4	R5	87	
5	R5	R1	111	
TOTAL			544	
SAY			550 m	



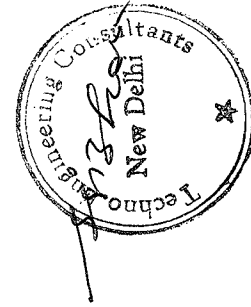
For Client's Properties Ltd.  
Authorized Signatory

raman sikka  
REGN. No. 93/16497

5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102, GURGAON																			
DESIGN STATEMENT OF SEWAGE SYSTEM																			
Sl. No.	Name of Line	Water requirement			Average sewage flow @ 80% of Water requirement	Total load	Sewrage Discharge @ 3 times avg. DWF in Cusec	Size of pipe in mm	Velocity in mt/sec	Design discharge in Cusecs	Length of Pipe in Mts	Slope/ Gradient	Fall In Mts	Ground Level		Invert Level		Depth of line	
		Self	Branch	Total										Upper end	Lower end	Upper end	Lower end	Upper end	Lower end
1	S-1 TO S-2	95250	0	95250	76200	76200	93.44	200	0.778	0.85	149	(1:180)	0.83	217.9	217.9	216.9	216.07	1.00	1.83
2	S-2 TO S-5	31750	95250	127000	101600	101600	124.58	200	0.778	0.85	102	(1:180)	0.57	217.9	217.9	216.07	215.51	1.83	2.39
3	S-3 TO S-4	95250	0	95250	76200	76200	93.44	200	0.778	0.85	177	(1:180)	0.98	217.9	217.9	216.9	215.92	1.00	1.98
4	S-4 TO S-5	31750	95250	127000	101600	101600	124.58	200	0.778	0.85	36	(1:180)	0.20	217.9	217.9	215.9	215.7	1.98	2.18
5	S-5 TO STP	0	254000	254000	203200	203200	249.16	200	0.778	0.85	4	(1:180)	0.02	217.9	217.9	215.5	215.48	2.39	2.42

# NOTES

- 1 REFER ANNEXURE -A FOR VELOCITY & CAPACITY FOR PIPE



For Clarification / Variation Etc.  
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 Authorized Signatory

*[Signature]*

Raman Sikka  
 REGN. No. 93/16497



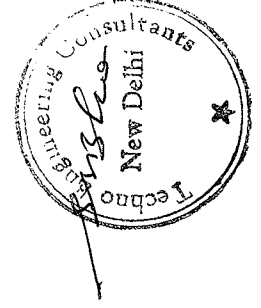
5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102, GURGAON

DESIGN STATEMENT OF STORM WATER DRAINAGE SYSTEM

SL. NO.	Name of line	Area in Acres			Discharge @ 1/4" rain in cusec	Size of pipe in mm	Velocity in ft/sec	Design Discharge in cusecs	Length of line in Mts	Slope/ Gradient	Fall in Mts	Ground Level		Invert Level		Depth of line	
		Self	Branch	Total								Upper end	Lower end	Upper end	Lower end	Upper end	Lower end
1	SD-1 TO SD-2	1.845	0	1.845	0.46	400	2.40	3.21	80	(1:500)	0.16	217.9	217.9	216.9	216.7	1.00	1.16
2	SD-2 TO RWH-1	0.901	1.845	2.746	0.69	400	2.40	3.21	61	(1:500)	0.12	217.9	217.9	216.7	216.6	1.16	1.28
3	SD-3 TO RWH-1	0.163	0	0.163	0.04	400	2.40	3.21	49	(1:500)	0.10	217.9	217.9	216.9	216.8	1.00	1.10
4	RWH-1 TO EXISTING NALLAH	0.000	2.909	2.909	0.73	400	2.40	3.21	5	(1:500)	0.01	217.9	217.9	216.6	216.6	1.28	1.29
5	SD-4 TO SD-5	1.019	0.000	1.019	0.25	400	2.40	3.21	68	(1:500)	0.14	217.9	217.9	216.9	216.8	1.00	1.14
6	SD-5 TO SD-7	1.025	1.019	2.044	0.51	400	2.40	3.21	55	(1:500)	0.11	217.9	217.9	216.8	216.7	1.14	1.25
7	SD-6 TO SD-7	0.198	0	0.198	0.05	400	2.40	3.21	69	(1:500)	0.14	217.9	217.9	216.9	216.8	1.00	1.14
8	SD-7 TO RWH-2	0.000	2.243	2.243	0.56	400	2.40	3.21	5	(1:500)	0.01	217.9	217.9	216.7	216.6	1.2	1.3
9	RWH-2 TO EXISTING NALLAH	0.000	2.243	2.243	0.56	400	2.40	3.21	11	(1:500)	0.02	217.9	217.9	216.6	216.6	1.26	1.28

NOTES

- 1 REFER ANNEXURE -B FOR VELOCITY & CAPACITY OF PIPE

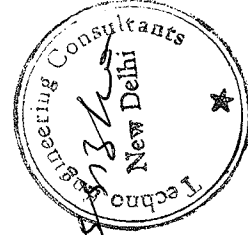


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RAMAN SIKKA  
REGN. No. 93/16497

5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102, GURGAON															
DESIGN STATEMENT OF DOMESTIC WATER SUPPLY SYSTEM (MAIN CWS RING TO BUILDING SHAFTS)															
Sl. No.	Name of Line	Water Requirement s (in KLD)	Self Water requirement (in KLD)	Branch Water requirement (in KLD)	Total Water Requirements (in KLD)	Discharge per Hour considering 12 Hours Pumping	Length of pipe(in meters)	Dia. of Pipe	Head Loss per 1000m	Loss of head as per pipe length	Hydraulic Level		Road Level at Lower End	Terminal Level at Lower End	Remarks
											Upper end	Lower end			
1	UGT-W1	0	0	155	155	13	21	80	13.76	0.29	277.90	277.61	217.9	59.71	HYDRAULIC LEVEL AT UPPER END * ROAD LEVEL AT UGT =217.9 * HEIGHT OF BUILDING= 60 TOTAL 277.9
2	W1-W2	154	154	1	155	13	137	80	13.76	1.89	277.90	276.01	217.9	58.11	
2	W2-W3	1	1	0	1	0	171	50	0.00	0.00	277.90	277.90	217.9	60.00	



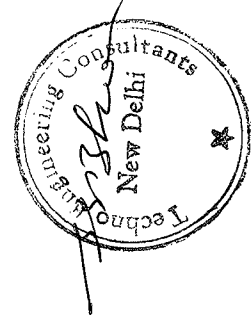
For Client Properties (to)

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Raman Sikka  
REGN. No. 03/16497

5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102, GURGAON																
DESIGN STATEMENT OF FLUSHING WATER SUPPLY SYSTEM (MAIN FWS RING TO BUILDING SHAFTS)																
Sl. No.	Name o' Line	Water Requirement's (in KLD)	Self Water requirement (in KLD)	Branch Water requirement (in KLD)	Total Water Requirements (in KLD)	Discharge per Hour considering 8 Hours Pumping	Length of pipe(in meters)	Dia. of Pipe	Head Loss per 1000m	Loss of head as per pipe length	Hydraulic Level		Road Level at Lower End	Terminal Level at Lower End	Remarks	
											Upper end	Lower end				
1	STP-FL1	0	0	100	100	KL/Hr 13	11	65	35.61	0.39		277.90	277.51	217.9	59.61	HYDRAULIC LEVEL AT UPPER END * ROAD LEVEL AT UGT =217.9 * HEIGHT OF BUILDING= 60 TOTAL 277.9
2	FL1-FL2	100	100	0	100	13	38	65	35.61	1.35		277.90	276.55	217.9	58.65	



For Gandon  
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Raman Sikka  
REGN. No. 03/16497

## 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102, GURGAON

CALCULATIONS FOR SEWAGE PIPE  
DRAIN1.0 CALCULATIONS FOR CAPACITY OF SEWAGE PIPE DRAIN OF 200  
MM DIA PIPE IN 1:180 SLOPE

By using Manning's formula

$$v = (1/n) r^{2/3} s^{1/2}$$

$$Q = A \times v$$

Where

v = velocity of flow in pipe in m/sec.

A = area of cross section of pipe in m<sup>2</sup>

r = Hydraulic depth = D/4 for circular pipes

D = Diameter of pipe=200 MM

s = Slope of Pipe=1:180

n = Manning's coefficient (.013 is adopted)

$$V = \frac{1}{0.013} \times \frac{(.200)^{2/3}}{4} \times \left(\frac{1}{180}\right)^{1/2}$$

$$= \frac{1}{0.013} \times (.05)^{2/3} \times (0.01)^{1/2}$$

$$= \frac{1}{0.013} \times 0.135 \times 0.075$$

$$= 0.778 \text{ m/sec.}$$

Carrying capacity of 200mm dia pipe

$$q = \pi / 4 \times D^2 \times v$$

$$= \pi / 4 \times .200 \times .200 \times .778$$

$$= \frac{(3.14 \times 0.200 \times 0.200)}{4} \times .778$$

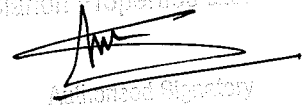
$$= 0.0314 \times .778$$

$$= 0.024 \text{ m}^3/\text{sec}$$


$$= .024 / (.3048)^3 \text{ CUSEC}$$

$$= 0.85 \text{ CUSEC}$$

For Clifton Properties Ltd.



Authorized Signatory

C.E. No. 16176  
Dated 29/12/15

**Annexure-A**

**SUB:- Approval of Service plan estimate for Commercial Colony on the land measuring 5.846875 acres (license No. 93 of 2012 dated 5.9.2012, No. 30 & 31 of 2014 dated 12.6.2014) in Sec-102, Gurgaon Manesar Urban Complex developed by Radhika Polymers & Others in collaboration with Clarion Properties 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.

SF-2



EE (w)

21/12/15

## 5.846875 ACRES COMMERCIAL COLONY AT SECTOR - 102, GURGAON

CALCULATIONS FOR STORM WATER PIPE  
DRAIN1.0 CALCULATIONS FOR CAPACITY OF STORM WATER PIPE DRAIN  
OF 400 MM DIA PIPE IN 1:500 SLOPE

By using Manning's formula

$$v = (1/n) r^{2/3} s^{1/2}$$

$$Q = A \times v$$

Where

v = velocity of flow in pipe in m/sec.

A = area of cross section of pipe in m<sup>2</sup>

r = Hydraulic depth = D/4 for circular pipes

D = Diameter of pipe=400 MM

s = Slope of Pipe=1:570

n = Manning's coefficient (.013 is adopted)

$$V = \frac{1}{0.013} \times \frac{(400)^{2/3}}{4} \times \left(\frac{1}{500}\right)^{1/2}$$

$$= \frac{1}{0.013} \times (.1)^{2/3} \times (0.002)^{1/2}$$

$$= \frac{1}{0.013} \times 0.215 \times 0.044$$

$$= 0.728 \text{ m/sec.}$$

$$= 2.4 \text{ ft/sec}$$

For Clarton Properties Ltd.



Carrying capacity of 400mm dia pipe

$$q = \pi / 4 \times D^2 \times v$$

$$= \pi / 4 \times .400 \times .400 \times .728$$

$$= \frac{(3.14 \times 0.400 \times 0.400)}{4} \times .728$$

$$= 0.1256 \times .728$$

$$= 0.091 \text{ m}^3/\text{sec}$$

$$= .091 / (.3048)^3 \text{ CUSEC}$$

$$= 3.21 \text{ CUSEC}$$