DIRECTORATE OF TOWN & COUNTRY PLANNING, HARYANA
SCO 71-75, Sector 17C, Chandigarh
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To

Alpha Corp Development Pvt. Ltd.
Golf View Corporation Towers, Tower A, Sector-42
Golf Course Road, Gurugram-122002
Haryana.

Memo. No. LC-3236-ATP(B)-2018/ 27984 Dated: 01-10-2018

Subject: **Approval of service plan/estimates for affordable residential plotted colony under DDJAY being developed over an area measuring 14.00 acres (license No. 23 of 2018 dated 18.04.2018) in Sector 28 & 28A, Karnal.**

Kindly refer your application on the subject cited above.

The service plan/estimates for affordable residential plotted colony under DDJAY being developed over an area measuring 14.00 acres (license No. 23 of 2018 dated 18.04.2018) in Sector 28 & 28A, Karnal have been checked and corrected wherever necessary by the Chief Administrator, HSVP & 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, Karnal 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. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. That you shall be solely responsible to lay the services upto the external services laid/to be laid by HSVP or any developing agency on Sector dividing road at respective locations/points.
10. 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) Recycled 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.

11. 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.

12. In case some additional structures are required to be constructed and decided by HSVP/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 HSVP.

13. 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.

14. In case it is decided by Govt. that HSVP/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.

15. 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.

16. 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.

17. 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.

18. 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.

19. That the detailed technical proposal/scheme shall be got approved from CA, HSVP before execution of work at site.

20. The firm will provide solar water heating system as per the guidelines issued by Haryana Govt./Ministry of Environment/Govt. of India.

21. 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.

22. That you shall transfer the land under master plan road as well as service road to Govt./HSVP for construction of road/service road free of cost and proportionate cost for construction of service road shall also be paid by you.

23. That the permission from competent authority shall be obtained prior to boring/drilling of tubewells. Further, the approval of service plan estimates with tubewell provision does not entitle you to drill tubewell.

24. It is clarified that HSVP can make available the water only after HSVP sector, in which licensed area falls, is developed subject to the following:-

(i) Availability of litigation and encroachment free land.

(ii) Permission within reasonable period from Forest & Environment Department, wherever required.

(iii) Till the water supply and other services are made available by HSVP, the licensee will have to make his own arrangement T/Wells can be bored with prior permission from Central Ground Water Board and other concerned authority for the purpose.

(iv) HSVP shall supply the drinking water only to the license granted in the master plan area.

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/s Union of India and Ors, the following instruction issued vide letter No. 2613 dated 5.3.2015 be incorporated for implementation at site as under:-

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/s 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 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 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.

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/sent.

d. Immediately upon receipt of such complaint, the concerned Authority and for Authorities the designed Officers would proceed to take action in accordance with law.

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 afore 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.

h. 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.

i. Hon'ble 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.

j. Each officer under whose jurisdictions the area would fall, would be personally responsible for imposition of compensation and costs.

k. The compositing sites should be provided nearer to the places where there is 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 increase beyond its capacity.

l. Decision 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.

m. No one would permit the building 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, HSVP, Panchkula under intimation to this office.

(Vijender Singh)
District Town Planner (HQ)
For Director, Town & Country Planning
Haryana, Chandigarh

Endst. No. LC-3236-ATP(B)-2018/ Dated :

A copy is forwarded to the Chief Administrator, HSVP, Panchkula with reference to his office Memo No. 161473 dated 09.08.2018 for information and necessary action.

(Vijender Singh)
District Town Planner (HQ)
For Director, Town & Country Planning
Haryana, Chandigarh

LC-3236

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" MEASURING 14.00 ACRES. AT VILLAGE KAILASH SECTOR 28 & 28A, KARNAL BEING DEVELOPED BY M/S ALPHA CORP DEVELOPMENT PRIVATE LIMITED

ESTIMATE SERVICE PLAN

PUBLIC HEALTH ENGINEERING SERVICES

PROVIDING WATER SUPPLY, SEWERAGE, STROM WATER DRAINAGE, RAIN WATER HARVESTING, ROADS HORTICULTURE&STREET LIGHTING ETC.

IN

AFFORDABLE RESIDENTIAL PLOTTED COLONY BEING DEVELOPED

BY

M/S ALPHA CORP DEVELOPMENT PRIVATE LIMITAED

GOLF VIEW CORPORATE TOWER, WING-A GULF COURSE ROAD SECTOR-42 GURGAON-122002

ARCHITECTS

TANUJ KAPOOR, CA/2006/37502

ESTIMATE FOR PROVIDING "AFFORDABLE RESIDENTIALPLOTTED COLONY" MEASURING 14.00 ACRES AT VILLAGE KAILASH, SECTOR 28 & 28A, KARNAL BEING DEVELOPED BY M/S ALPHA CORP DEVELOPED PRIVATE LIMITED.

1 INTRODUCTION

Karnal is an important town of Haryana state. it has been decided by the Haryana Govt. to establish various sectors in Karnal. Keeping in view, the above facts a group housing has been planned in sector-28& 28A Karnal the affordable Residential plotted colony is proposed at village Baldi on planned area measuring 14.00 acres and achieved density i.e total population net planned area is 246PPA against permissible density 240 to 400 PPA. The net planned area is 13.3185 acres.The bench mark assumed as 100.0 at community site

2 WATER SUPPLY

At present the source of water supply in this area is tubewell as the under ground water is potable provision of 2 Nos. tubewell has been made with in the boundary limits of this Group Housing. However tubewells proposed in the surrounding plotted development colony would also act as stand by water source. It has been proposed to construct 1 no. underground tank of capacity 300 KL for domestic purposes . The underground tanks will be filled up form the proposed tubewell and the water will be pumped into the tanks proposed on the terrace of each building.

3 DESIGN

The scheme has been designed for approximately 3281 persons considering 13.50 persons for each apartment . The rate of water supply has been taken as 155.25 liters per capita per day (lpcd) Besides the above, necessary provisions for water requirement for community buildings, commercial complex, Grassy Lawns and Road side plantations, Road washing etc have also been taken into consideration.

4. PUMPING EQUIPMENT

It has been proposed to install a pumping station next to underground tank. At pumping station, there would be two pumping systems each comprising two pumps, one working and one standby. The provision for Diesel Generating set as a stand by source of power in case of any electricity failure has also been made. Provision is also made for chlorination of water before distribution.

5. SEWERAGE SCHEME

The sewerage network of the affordable plotted Housing colony shall be connected to the proposed 450 KLD capacity sewage Treatment plant (STP). The treated effluent will be used for landscape irrigation, surplus effluent will be discharged into the fields.

The sewerage system has been designed for 3times of average DWF. It has been assumed that 75% of domestic water supply shall find its way into the proposed sewer. All the sewer upto 200 mm dia have been designed to run half-full Necessary design statement for the entire sewerage system has been prepared and attached. Sewer lines have been designed for a minimum self cleansing velocity of 0.60 M/sec S.W. pipes will be used for sewer lines. All the manholes and related appurtenances shall be constructed as per standard design.

6. **STORM WATER DRAINAGE**

The design rainfall intensity has been considered as ¼" per hour for the proposed development. The average co-efficient of run-off has been considered as 0.5 for the proposed development. Pipe drains formed of minimum 400 mm dia R.C.C NP3 pipe has been proposed for the storm water drainage. Road Gully chambers will collect the storm water form the surface and discharge into the manholes through 300 mm dia. R.C.C NP3 pipes. The internal storm water drains shall be connected to the proposed rain water harvesting well for recharging the under ground water of the surrounding plotted development , which ultimately gets connected to peripheral departmental storm water drainage system of sector road. The velocity of water in the pipe has been considered as minimum of 0.60 M/sec all the pipes are considered as running full Necessary design statement for the entire storm water drainage system has been prepared and attached.

7. **ROAD AND FOOTPATHS**

The construction of roads of size 9.0M wide with 3.66 M mettalled width as per std. design adopted IRC:42-2018 guide lines for the design of flexible pavements etc.

8. **SPECIFICATIONS**

The work will be carried out in accordance with the standard specification of Public Health Engg, Department as laid down by Haryana Govt. /HUDA

9. **RATE**

The estimate has been based on the present market rates with escalation.

10 **COST**

The total cost of the scheme, including cost of all services works out of Rs. ~~660.65~~ 1060.69 ~~991.35~~ Lacs including 3% contingencies and 49% Departmental charges. price escalation, unforseen Admn.

11 **DEVELOPMENT COST**

The development cost per acre having net planned area is. ~~13.3185~~ 14.00 acres works out to Rs. ~~49.60~~ ~~74.43~~ 75.76 lacs Lacs

For Alpha Corp Development Pvt. Ltd.

Authorised Signatory

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

FINAL ABSTRACT OF COST

SUB WORK NO.I	WATER SUPPLY	RS. ~~148.90~~ ~~182.76~~ 244.95 LACS
SUB WORK NO.II	SEWERAGE	RS. ~~167.27~~ ~~268.65~~ 110.87 LACS
SUB WORK NO.III	STROM WATER DRAINAGE & RAIN HARVESTING	RS. ~~62.97~~ ~~101.35~~ 103.58 LACS
SUB WORK NO.IV	ROAD & FOOTPATHS	RS. ~~79.52~~ ~~107.05~~ 240.75 LACS
SUB WORK NO.V	STREET LIGHTING	RS.30.60 ~~51.10~~ 53.71 LACS
SUB WORK NO.VI	HORTICULTURE	RS. ~~31.55~~ ~~34.71~~ 6.88 LACS
SUB WORK NO.VII	MAINTENANCE CHARGES For 10 years including resurfacing of roads after 1st 5years & 2nd 5years m/c (as per HUDA norms)	RS. ~~139.83~~ ~~245.70~~ 299.95 LACS
		Rs. 660.64 ~~991.32~~ 1060.69 LACS

Say ~~660.65~~ ~~991.35~~ 1060.69 Lacs.

~~The net planned area of~~ residential plotted colony is ~~13.3185~~ 14.00 Acres

Dev. Cost per acre is ~~660.65~~ ~~991.35~~ 1060.69 / ~~13.3185~~ 14.00 = Rs. ~~49.60~~ ~~74.43~~ 75.76 Lacs. Per Gross acre

Checked subject to comments in forwarding letter No. 16143 Dt. 2.9.08 ..... and notes attached with the estimate

Executive Engineer (H.Q.)
for Chief Engineer-II, HSVP
Panchkula

For Alpha Corp Development Pvt. Ltd.

Authorised Signatory

Executive Engineer
H.S.V.P. Division, Karnal

Director
Town & Country Planning
Haryana, Chandigarh

Superintending Engineer
HSVP Circle, KARNAL

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

			Part- I	Part- II
A	**DAILY REQUIREMENT OF WATER**			
I	Total No. of plots	=	153	90
	Population @ 13.50 person per dwelling unit			
	Total population	=	153 X 13.50	90 X 13.50
		=	2066	1215
	Total water requirement			
	@ 135 Lpcd + 15% UAF = 155.25 LPCD	=	2066 X 155.25	1215 X 155.25
		=	321 KL/day	189 KL/day
II	COMMUNITY BUILDING 5394.0 Sqm OR 1.332 Acre @ 25000 Ltr/Acre	=	~~40~~ KL/Day 33.30 KL	say 35 KL
III	SHOPPING (Commercial 1&2) 0.290 + 0.177 acre = 0.467 acre @ 32000 Ltr/Acre	=	~~10~~ KL/ Day 14.94 KL Say	15 KL/day
	TOTAL DOMESTIC WATER REQUIREMENT=		321 + ~~40 + 10~~ 35 + 15	189 + 10
		=	371 KL/day	199 KL/day
		Say	~~400~~ 375 KL/day	200 KL/day
IV	HORTICULTURE REQUIREMENT			
	Total area of parks	=	1.234 Acres	
	Total soft area (approx)	=	1.25 Acres	
	Total water requirement of horticulture			
	Work @ 25 KL/Acre/Day	=	1.25x25	
		=	31.25KL/Day OR 35 KL	
V	ROAD WASHING			
	Total Road area (approx)	=	0.48615 Acres	0.200 Acres
	Water requirement for road washing			
	@ 5KL/Acre	=	0.48615 X 5	0.200 X 5
		=	2.43 KL/day	1.00 KL/day
			Say 3 KL/day	1.00 KL/day
	Hence, total daily requirement	=	~~I+II+III+IV+V~~	
		=	~~371 + 40 + 10 + 3~~	~~189 + 10 + 1~~
		=	~~459 KL/day~~	~~200 KL/day~~
			~~Say 460 KL/day~~	200 KL/day

(a) For Dom use — Part-I 375 KL — Part-II 200 KL

(b) under Park & Foods — 35 KL + 3 KL = 38 KL — 1.0 KL

Total daily requirement

Domestic requirement = $\frac{460 \times 12}{24}$ $\frac{200 \times 12}{24}$

= 230 KL 100 KL

Say = 250 KL 100 KL.

B TUBEWELL

Assumed discharge of each tubewell = 22 Kl/Hour 22 kL/Hr.

Total No. of tubewell required considering

16 hours of pumping every day = $\frac{250}{22 \times 16}$ $\frac{100}{22 \times 16}$

= 0.71 0.28

Add 10% standby = 0.07 0.02

Total = 0.78 0.30

Provide 1 nos of tubewell with a discharge

Capacity of 22 KL/Hour for each Phase/Part.

PUMPING MACHINERY FOR TUBEWELLS

Expected yield of tubewell	;	22 KL / Hour
Total yield per day	:	22 x 1 x 16 = 352 KL
Pumping Machinery	:	
Av spring level	:	35M
Av fall in S.L.	:	3 M
Depression head	:	6 M
Friction loss in mains	:	3 M
Total		47 M
BHP	:	18000 x 47

60 x 60 x 75 x 0.60 = 5.22 BHP

The nearest higher size of motor available is 7.5 BHP for each T/well.

C UNDERGROUND TANK

	Part- I	Part- II
Total daily domestic water requirement =	~~460~~ 375 KL	200 KL
	incl. institutional demand	
Considering ~~half~~ day storage for daily requirement the total storage requirement works out to be	60%. 25+33 = 58%. say 60%.	
for daily requirement =	~~460/2~~ 375 x 0.60	~~200/2~~ 200 x 0.60
=	~~230~~ 225	~~100~~ 120
	Say 250 KL	~~100~~ 125 KL.
	of capacity 375 KL on both side which also includes 200 KL (150 KL + 50 KL for fire fighting as well)	

It is proposed to provide underground storage tank ~~with following capacities~~

Domestic Storage

UGT	250 KL	~~100~~ 125 KL.

D Design of Rising Mains for UG Tanks form Colony Supply Main:

Daily requirement	=	250 KL	~~100~~ 125 KL
Requirement @ 1.5 times assuming the Reservoir will be filled in 16 hrs	=	375 KL	~~150~~ 187.50 KL
Loss of head per 1000 M for 450KL in 150mm i/d pipe	=	1.31 M	1.31 m
Length of rising main	=	100 M	100 m
Total head loss in 100 M	=	0.13 m	0.13 m

E PUMPING MACHINERY FOR BOOSTING WATER TO U.G. TANK

i) FOR FRESH WATER SUPPLY

it is proposed a ring main on the periphery of the plots/ The details of pumping machinery for buildings is given as below

Total Daily domestic water demand	=	~~460000~~ 375000 Lts.	~~100000~~ 125000 Lts.
Fresh water demend for Apartment Buildings = 2/3rd of total domestic water demend			
	=	~~306666~~ 250000 lts.	~~66666~~ 83333 Lts.
i) Pumping rate assuming ~~10~~ 8 hours of pumping per day	=	$\frac{306666}{8 \times 60 \times 60}$	$\frac{66666}{8 \times 60 \times 60}$
	=	~~10.65~~ 8.68 lps	~~2.31~~ 2.89 Lps
	Say.	~~10.65~~ 8.70 Lps	~~2.35~~ 2.90 Lps.

ii) Pumping head

a)	Suction head	=	0.0 M (positive suction)
b)	Static head	=	~~30~~.00 M
c)	Residual head	=	5.0 M
d)	Frictional head loss	=	~~0~~5.0 M
	Total	=	~~62.00~~ M

40.0 8.70 2.90
10.65 & 2.35 Lps (175 lpm)

Hence, provide two pumps (1W+1S) with a discharge of (525 lpm) litres per second at 62.0M head of each pump

BHP of Motor = 40 8.70 / 62 × 10.65 / 0.60×0.9×76.04 ; 40 2.90 / 62 × 2.35 / 0.60×0.9×76.04

= 8.47 / 16.08 ; 2.82 / 3.54

Say = 10.0 / ~~15.00~~ BHP ; 5.00 BHP.

F PUMPING MACHINERY FOR BOOSTING WATER TO U.G. TANK

II)FOR FLUSHING WATER SUPPLY (RECYCLED WATER SUPPLY)

It is proposed a ring main on the periphery of the plots . The details of pumping machinery for buildings is given as below:

Total daily domestic water demand = 375000 / ~~460000~~ lts ; 125000 / ~~100000~~ lts.
3 8000 1000

Flushing water demend for apartment Buildings = 1/3rd of total domestic water demand
Hostel

= 137666 / ~~153333~~ lts ; 42000 / ~~33333~~ lts.

iii) Pumping rate assuming 8 hours of pumping per day

= 137666 / ~~153333~~ / 8×60×60 ; 42000 / ~~33333~~ / 8×60×60

= ~~5.32~~ lps ; ~~1.15~~ lps.
4.78 290 lpm 1.46 (90 lpm)

iv) Pumping head

e)	Suction head	=	0.0 M (positive suction)
f)	Static head	=	~~3~~2.00 M
g)	Residual head	=	5.0 M
h)	Frictional head loss	=	~~0~~5.0 M
	Total	=	~~62.00~~ M for each pump.

40.0
4.78 ~~5.32~~ & ~~1.15~~ 1.46

Hence, provide two pumps (1W+1S) with a discharge of litres per second at 62.0M head of each pump

BHP of Motor = 40 4.78 / 62 × 5.32 / 0.60×0.9×76.04 ; 40 1.46 / 62 × 1.15 / 0.60×0.9×76.04

= 4.66 / ~~8.03~~ ; 1.42 / ~~1.73~~

Say = 5.0 / ~~10.00~~ BHP ; 2.50 BHP.

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

ABSTRACT OF COST OF SUB-WORKNO.I (WATER SUPPLY)

SUB WORK NO.I	HEAD WORKS	RS.	72.87 lacs 4475000 –
SUB WORK NO.II	PUMPING MACHINERY	RS.	24.00 lacs 2860000 –
SUB WORK NO.III	DISTRIBUTION SYSTEM FOR FRESH WATER SUPPLY	RS.	33.44 lacs 3209115 –
SUB WORK NO.IV	DISTRIBUTION SYSTEM FOR FLUSH WATER SUPPLY	RS.	25.07 lacs 1726750 –
SUB WORK NO.V	RECYCLED DISTRIBUTION SYSTEM FOR IRRIGATION	RS.	4.24 lacs 463000 –
			159.62 lacs
		Rs.	12733865 –
ADD 3% contingencies & P.E charges		Rs.	4.78 lacs 382016 –
			164.40 lacs
		Rs.	13115881 –
ADD 49% Departmental charges, price escalation unforseen, Admn.		Rs.	80.55 lacs 6426782
			244.95 lacs
		Rs.	19542663
		Say Rs.	195.43 Lacs.

(TOTAL C.O.TO SUMMARY)

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

SUB WORK NO 1 — WATER SUPPLY

SUB HEAD NO.1 — HEAD WORKS

AMOUNT (RS)

S. No	Desription	Qty.	Unit	Rate	Amount
1	Boring and installing 510 mm i/d tubewells with reverse rotary rig complete with pipe and strainer to depth of about 80 m complete in all respect	2	No	~~800000~~ 10,00,000/-	~~1600000~~ 20,00,000/-
2.	Construction of boundary wall, gate around the tubewells site and water works etc.	2	No	200000	400000/-
3.	Provision of footpath hedges and lawns at water Works/Tubewells site		L.S		200000/-
4.	construction of chowkidar (staff) Quarters, completed with P.H services and electricity fittings etc.		L.S		~~200000~~ 10.00 lacs
~~5.~~	~~Provision for rising mains, connecting tubewells with water main and bye-pass arrangements~~		~~L.S~~		~~100000~~/-
5	Construction of 1 No Boosting arrangement and underground tank of total ~~300~~ 575 kl capacity including 200 kl for fire storage on both sides & 125 kl for flushing water near STP (2 nos)	~~300~~ 575	KL	3500/-	~~1225000~~ 20.12 lacs
6	Boosting Chamber	L.S			10.00 lacs
8.	Boosting Machinery for Fresh water supply i) 2 Nos. ~~12.00~~ 8.70 & 2.90 LPS at ~~62~~ 40 mtrs head-~~20.00~~ 10.0 HP & 5 HP	2+2 (1 W. + 1 S.B. each part)	(L.S) No	~~75000~~	~~150000~~ 3.50 lacs
9	Boosting Machinery for Flushing water Supply (Recycled water supply) i) 2 Nos. ~~6.00~~ 4.78 & 1.42 LPS at ~~62~~ 40 mtrs head-~~10.0~~ 5.0 HP & 2.5 HP	2+2 4 Nos	(L.S) ~~No~~	~~50000~~	~~100000~~ 2.25 lacs
10	Provision for carriage for material and other unforeseen items	L.S			100000/-
				Rs.	~~4475000~~/- 72.87 lacs

(C.O. TO ABSTRACT OF COST SUB WORK NO.I)

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

SUB WORK NO 1 — WATER SUPPLY

SUB HEAD NO.II — PUMPING MACHINERY

S. No	Desription	Qty.	Unit	Rate	Amount
1	Providing and installing electrical driven submersible pumping set capable of delivering about 22 KL water per hour against a total head of 47 mtrs. Complete with motor and other accessories complete in all respects NOTE: The power supply to the submersible Tubewell pumps and booster pumps is to be provided form two sources one form the standby diesel generators being provided in the colony for the essential services.	~~4~~ 2	No	300000	~~1200000~~ ~~600000~~ 4.00 lacs
2.	Providing for chlorination plant complete in all respect	2	No	~~30000~~ 1.00	~~60000~~ ~~300000~~ 2.00
3.	Provision for making foundations and erection for pumping machinery	L.S		~~1,50,000 -~~ ~~100000~~	150000.
4.	Provision for pipes valves and specials inside the pump chamber and boosting chambers (both side)	L.S		~~1,50,000 -~~ ~~100000~~	~~1,50,000 -~~ ~~100000~~ 2,50,000 -
5.	Provision for electric services connection including electric fittings for tubewells chambers and boosting chamber etc (both side)	L.S			600000 -
6.	Provision for carriage of materials and other unforeseen items	L.S			200000 -
7.	~~Prov. for Disel Gen Set. (60 KVA both side) (L.S)~~				~~5,00,000 -~~ 5.00 Lacs
8.	~~Provision for P/F of boosting pumping etc. (L.S)~~				~~2860000 -~~ 24.00 Lacs

(C.O. TO ABSTRACT OF COST SUB WORK NO.I)

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

SUB WORK NO 1 — **WATER SUPPLY**

SUB HEAD NO.III — **DISTRIBUTION SYSTEM**

FOR FRESH WATER SUPPLY

S. No	Desription	Qty.	Unit	Rate	Amount
1	Providing , laying , jointing and testing D.I.pipes including cost of excavation, specials etc, complete in all respect				
	D.I. PIPE				
	100 mm i/d	1115	M	1250/ ~~1300~~/- ~~1136~~	@ 14.06 lacs ~~1449500~~ -
	150mm i/d	465	M	~~1911~~ 1575/-	~~888615~~ - @ 7.32 lacs
2	Providing and fixing sluice valves including cost of surface boxes & masonary chambers etc. complete (~~HSR 28.10~~)				
	100 mm i/d	8	No	12000/- ~~3098+10%CP~~ each =~~Rs.4067.80~~	96000 - ~~16271~~
	150mm i/d	10	No	15000/- ~~5709+10%CP~~ each. = ~~Rs. 6279.90~~	150000 - @ Rs. 3.50 lacs
3.	Prov for fixing main 100mm ϕ from 45 m wide road at turn location at nearest Places (L.S)				
4	Providing and fixing scour valves and including cost of bricks masonary chamber	10	No.	~~5000~~ 10,000/-	100000 -
5	Providing and fixing indicating plates for sluice valves and air svalves	10	No.	1000/ ~~2500~~	0.10 lacs ~~25000~~ -
6	Provision for carriage of material	L.S			100000
7.	Provision for cutting of roads & making good to its original conditions	L.S			200000 -
8	Provision for P/F of fire Hydrant	(L.S)			200000 -
					~~3209115~~ — 33.44 lacs

(C.O. TO ABSTRACT OF COST SUB WORK NO.I)

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

SUB HEAD: WATER SUPPLY DISTRIBUTION FOR FRESH WATER SUPPLY

MATERIAL STATEMENT FOR FRESH WATER SUPPLY PIPE Part-I & II

Sr.No Part-I	Line Referances	150mm (M)	Sluice valve (No)	100 mm (M)	Sluice valve (No)
1.	U.G.R-1	120	3	–	–
2.	1-2	35	–	–	–
3.	2-3	125	–	–	–
4.	3-4	–	–	25	1
5.	4-5	–	–	40	–
6.	5-6	–	–	40	1
7.	6-7	–	–	40	1
8.	7-8	–	–	15	–
9.	2-9	–	–	35	1
10.	8-9	–	–	80	–
11.	3-3.1	–	–	40 ~~30~~	–
12.	4-4.1	–	–	40	–
13.	4.1-4.2	–	–	45	–
14.	4.1-5.1	–	–	40	–
15.	5.1-6.1	–	–	40	–
16.	6.1-7.1	–	–	40	–
17.	5-5.1	–	–	40	–
18.	6-6.1	–	–	35	–

Sr.No	Line Referances	150mm (M)	Sluice valve (No)	100 mm (M)	Sluice valve (No)
19	7 - 7·1	-	-	25	-
20	8 - 7·1	-	-	55	-
21	9 - 9·1	-	-	60	-
22	From T/w No 1	30	2	-	-
PART- II					
1.	UGR - 11	85	3	-	-
2.	11 - 10	-	-	40	1
3.	10 - 10·1	-	-	130	1
4.	11 - 12	40	-	-	-
5.	12 - 12·1	-	-	90	1
6.	12 - 12·2	-	-	130	1
7	From T/w No I	30	2	-	-
	Total:	465 m/r	10 No.	1125 m	8 Nos.

PROPOSED "AFFORDABLE PLOTTED HOUSING COLONY" IN SECTOR-28 & 28A, VILLAGE KAILASH,
TEHSIL & DISTT KARNAL
SUB HEAD : WATER SUPPLY SCHEME FOR FRESH WATER SUPPLY
HYDRAULIC STATEMENT OF FRESH WATER SUPPLY

Sr. No	Line Refer-ance	Nos. of Plots			Total populati-on @ 13.50 persons per dwelling unit	Daily water Require-ment @ 155.25 Ltrs per person per day (KLD)	Require-ment of communi-ty facility and shops (comerci-al) (A+B) (KLD)	TOTAL REQU-IREM-ENT (KLD)	TOTAL FRESH REQUIRE-MENT 2/3RD OF Total water requirem-ent (KLD)	Peak water Require-ment @ 3 Times of Daily Fresh water Demand (KLD)	size of the pipe (mm)	Loss of Head in M.in 1000 M	Length (M)	Loss of Head in Line (M)	Ground Level at Lower End (M)	Hydraulic Level		Head at Lower End (M)
		self (Nos)	branch (Nos)	Total (Nos)												Upper End (M)	Lower End (M)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	HGR-E	44	109	153	2066	320.67	60.00	380.67	253.78	761.34	150	7.43	120	0.89	99.75	129.75	128.86	29.11
2	1-2	-	19	109	1471	228.45	40.00	268.45	178.97	537.90	150	5.00	35	0.18	99.80	128.86	128.68	28.88
3	2-3	31	68	99	1337	207.57	40.00	247.53	165.50	495.15	150	1.32	125	0.17	99.85	128.68	128.51	28.66
4.	3-4	-	68	68	918	142.52	20.00	162.52	108.35	325.05	100	4.72	25	0.12	99.85	128.51	128.39	28.54
5.	4-5	-	22	22	297	46.11	-	46.11	30.74	92.22	100	0.62	40	0.02	99.80	128.39	128.37	28.57
6	5-6	7	3	10	135	20.96	-	20.96	13.98	41.94	100	0.62	40	0.02	99.78	127.37	128.35	28.57
7	6-7	3	-	3	41	6.36	10.00	16.38	10.90	32.70	100	0.62	40	0.02	99.75	128.35	128.33	28.58
8	7-8	-	-	-	-	-	10.00	10.00	6.67	20.01	100	0.62	15	0.01	99.73	128.33	128.32	28.59
9	2-9	-	10	10	41	6.36	10.00	16.36	10.90	32.70	100	0.62	35	0.02	99.85	128.68	128.60	128.64
10	8-9	-	10	10	41	6.36	10.00	16.36	10.90	32.70	100	0.62	80	0.05	99.85	128.32	128.27	28.42
11	3-3.1	-	-	-	-	-	40.00	40.00	26.67	80.01	100	0.62	30	0.02	99.90	128.51	128.49	28.59
12.	4-4.1	11	35	46	621	96.41	-	96.41	64.27	192.81	100	3.30	40	0.13	99.90	128.51	128.26	28.31

PROPOSED "AFFORDABLE PLOTTED HOUSING COLONY" IN SECTOR-28 & 28A, VILLAGE KAILASH,
TEHSIL & DISTT KARNAL
SUB HEAD : WATER SUPPLY SCHEME FOR FRESH WATER SUPPLY
HYDRAULIC STATEMENT OF FRESH WATER SUPPLY

Sr. No	Line Reference	Nos. of Plots			Total population @ 13.50 persons per dwelling unit	Daily water Requirement @ 155.25 Ltrs per person per day (KLD)	Requirement of community facility and shops (comercial) (A+B) (KLD)	TOTAL REQUIREMENT (KLD)	TOTAL FRESH REQUIREMENT 2/3RD OF Total water requirement (KLD)	Peak water Requirement @ 3 Times of Daily Fresh water Demand (KLD)	size of the pipe (mm)	Loss of Head in M.in 1000 M	Length (M)	Loss of Head in Line (M)	Ground Level at Lower End (M)	Hydraulic Level		Head at Lower End (M)
		self (Nos)	branch (Nos)	Total (Nos)												Upper End (M)	Lower End (M)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
13.	4-1-4-2	10	-	10	41	6.36	-	6.36	4.24	12.72	100	0.62	45	0.02	99.95	128.26	128.24	28.39
14.	4-1-5-1	7	18	25	338	52.47	-	52.47	34.98	104.95	100	0.62	40	0.02	99.85	128.26	128.24	28.39
15.	5-1-6-1	6	11	17	230	35.71	-	35.71	23.81	71.43	100	0.62	40	0.02	99.80	128.24	128.22	28.42
16.	6-1-7-1	6	5	11	149	23.13	-	23.13	15.42	46.26	100	0.62	40	0.02	99.78	128.22	128.20	28.42
17.	5-5-1	7	11	18	243	37.72	-	37.72	25.15	75.45	100	0.62	40	0.02	99.85	128.37	128.35	28.50
18.	6-6-1	7	4	11	149	23.13	-	23.13	15.42	46.26	100	0.62	35	0.02	99.80	128.35	128.33	28.53
19.	7-7-1	3	-	3	41	6.36	-	6.36	4.42	13.26	100	0.62	25	0.01	99.70	128.33	128.32	28.62
20	8-7-1	4	-	4	54	8.38	-	8.38	5.59	16.77	100	0.62	55	0.03	99.70	128.32	128.29	28.59
21	9-9-1	10	-	10	41	6.36	10.00	16.36	10.91	32.73	100	0.62	60	0.03	99.90	128.60	128.57	28.67
	PART-II																	
1.	GCR-11	19	71	80	1215	188.62	-	188.62	125.75	377.25	150	0.80	85	0.06	99.91	129.75	129.69	29.78
2.	10-11	28	-	28	378	58.68	-	58.68	39.12	117.36	100	0.94	40	0.04	99.95	129.69	129.65	29.70

Sr. No	Line Reference	Nos. of Plots			Total population @ 13.50 persons per dwelling unit	Daily water Requirement @ 155.25 Ltrs per person per day (KLD)	Requirement of community facility and shops (comercial) (A+B) (KLD)	TOTAL REQUIREMENT (KLD)	TOTAL FRESH REQUIREMENT 2/3RD OF Total water requirement (KLD)	Peak water Requirement @ 3 Times of Daily Fresh water Demand (KLD)	size of the pipe (mm)	Loss of Head in M.in 1000 M	Length (M)	Loss of Head in Line (M)	Ground Level at Lower End (M)	Hydraulic Level		Head Lower End (M)
		self (Nos)	branch (Nos)	Total (Nos)												Upper End (M)	Lower End (M)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
2.	10-10.1	-	28	28	378	58.68	-	58.68	39.12	117.36	100	0.94	130	0.12	99.95	129.65	129.53	28.58
4.	11-12	-	43	43	581	90.20	-	90.20	60.13	180.39	150	0.44	40	0.02	99.90	129.69	129.67	29.77
5.	12-12.1	28	-	28	378	58.68	-	58.68	39.12	117.36	100	0.94	90	0.08	99.00	129.67	129.59	29.69
6.	12.1-12.2	15	-	15	203	31.52	-	31.52	21.42	63.06	100	0.62	130	0.08	99.92	129.59	129.51	29.59

Av.GL at W/Works= 99.75 M

Pump Head = 30.00 M

Hydraulic Level = 129.75 M

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

SUB WORK NO 1 — WATER SUPPLY

SUB HEAD NO.IV — DISTRIBUTION SYSTEM

FOR FLUSHING WATER SUPPLY (Part I & II)

S. No	Desription	Qty.	Unit	Rate	Amount
1	Providing , laying , jointing and testing ~~D~~ DI lines including cost of excavation, specials etc. complete in all respect D.I PIPE ~~100~~ mm i/d	1815	M	~~850~~ 1250/ Mtr.	~~1542750~~ 22.69 lacs
2.	Providing and fixing sluice including cost of surface boxes & masonary chambers etc. complete (HSR 28.10) ~~100~~ mm i/d	6	No	~~2573 + 10%CP = Rs. 2830.30~~ ~~6500~~ 12000/- each.	~~39000~~ 0.72 lacs
3.	Providing and fixing scour valves and including cost of bricks masonary chamber	6	No	~~5000~~ 10000/ Each	~~30000~~ 0.60
4.	Providing and fixing indicating plates for sluice valves and air valves	6	No	~~2500~~ 1000/ Each	~~15000~~ 0.06 lacs
5.	Provision for carriage of material	L.S			50000 -
6.	Provision for cutting of roads & making good to its original conditions	L.S.			50000 -

Rs. ~~1726750~~ 25.07 lacs

(C.O. TO ABSTRACT OF COST SUB WORK NO.I)

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

SUB HEAD: WATER SUPPLY DISTRIBUTION FOR FLUSHING WATER SUPPLY

MATERIAL STATEMENT FOR FLUSHING WATER SUPPLY PIPE

Sr.No	Line Referances	80mm (M)	Sluice valve (No)
Part- I			
1.	STP - 5·8	40	1
2.	5·8 - 5·12	60.	-
3.	5·12 - 5·11	40	1
4.	5·11 - 5·10	40	-
5.	5·10 - 5·8'	40	-
6.	5·8' - 5·9	55	-
7.	5·8 - 5·7	65	-
8.	5·7 - 5·13	6.5	-
9.	5·13 - 5·14	55	-
10.	5·13 - 5	40	-
11.	5 - 5·1	120	-
12.	5 - 4	45	-
13.	4 - 4·1	145	1
14.	5·1 - 5·2	60	-
15.	5·1 - 5·3	20	-
16.	5·3 - 5·4	40	-
17.	5·4 - 5·5	40	-
18.	5·5 - 5·6	40	-
19.	5·6 - 5·7	45	-
20.	5·6 - 5·12	30	-
21.	5·5 - 5·11	35.	-
22.	5·4 - 5·10	45.	-

Sr.No	Line Referances	100mm (M)	Sluice valve (No)
23.	5-3 – 5-8'	50	–
Part- II			
1.	STP- 1	120	1
2.	1 – 2	40	1
3.	2 - 3	40	-
4.	1 – 1·1	135	-
5.	2 - 2·1	75	-
6.	3 - 3·1	190	1
	TOTAL	1815 mtr	6

PROPOSED "AFFORDABLE PLOTTED HOUSING COLONY" IN SECTOR-28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

SUB HEAD : WATER SUPPLY SCHEME FOR FLUSHING

HYDRAULIC STATEMENT OF RECYCLED WATER SUPPLY (FOR FLUSHING)

Sr. No	Line Refe-rance	Nos. of Plots			Total populati-on @ 13.50 persons per dwelling	Daily water Require-ment @ 155.25 Ltrs per person per day	Require-ment of club commun-ity facility and shops (comercl-al) (A+B) (KLD)	TOTAL REQUI-REME-NT (KLD)	TOTAL FRESH REQUIRE-MENT(1/3RD OF Total water requirem-ent (KLD)	Peak water Require-ment @ 3 Times of Daily Flesh water Demand (KLD)	Size of the pipe (mm)	Loss of Head in M.in 1000 M	Length (M)	Loss of Head in Line (M)	Ground Level at Lower End (M)	Hydraulic Level		Head at Lower End (M)
		self (Nos)	branch (Nos)	Total (Nos)												Upper End (M)	Lower End (M)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Part-I 1.	STP-5.8	-	153	153	2066	320.74	60.00	380.74	126.91	380.74	80	25.70	40	1.02	99.90	139.95	138.93	39.03
2	5.8-5.12	15	32	47	635	98.58	-	98.58	32.86	98.58	80	2.50	60	0.15	99.90	138.93	138.78	38.88
3.	5.12-5.17	7	25	32	432	67.07	-	67.07	22.34	67.07	80	1.50	40	0.06	99.78	138.78	138.72	38.94
4.	5.11-5.10	7	18	25	338	52.47	-	52.47	17.49	52.47	80	1.50	40	0.06	99.80	138.72	138.66	38.86
5.	5.10-5.8	8	10	18	243	37.73	-	37.73	12.58	37.73	80	1.50	40	0.06	99.85	138.66	138.60	38.75
6.	5.8'-5.9	10	-	10	135	20.95	-	20.95	6.98	20.95	80	1.50	55	0.08	99.95	138.60	138.52	38.57
7.	5.8-5.7	-	106	106	1431	222.16	60.00	282.16	94.05	282.16	80	19.20	65	0.09	99.90	138.93	138.84	38.94
8.	5.7-5.13	-	106	106	1431	222.16	10.00	232.16	73.39	73.39	80	1.50	65	0.09	99.85	138.84	138.73	38.88
9.	5.13-5.14	10	-	10	135	20.96	-	20.96	6.98	20.96	80	1.50	55	0.08	99.90	138.73	138.65	38.75
10	5.13-5	-	96	96	1296	201.20	10.00	211.20	70.40	70.40	80	1.50	40	0.06	99.80	138.73	138.67	38.87
11.	5-5.1	31	21	52	702	108.98	10.00	148.98	49.66	148.98	80	5.40	120	0.64	99.85	138.67	138.03	38.18

Sr. No	Line Refe-rance	Nos. of Plots			Total populati-on @ 13.50 persons per dwelling	Daily water Require-ment @ 155.25 Ltrs per person per day	Require-ment of club commun-ity facility and shops (comerci-al) (A+B) (KLD)	TOTAL REQUI-REME-NT (KLD)	TOTAL FRESH REQUIRE-MENT(1/3RD OF Total water requirem-ent (KLD)	Peak water Require-ment @ 3 Times of Daily Flesh water Demand (KLD)	Size of the pipe (mm)	Loss of Head in M.in 1000 M	Length (M)	Loss of Head in Line (M)	Ground Level at Lower End (M)	Hydraulic Level		Head a. Lower End (M)
		self (Nos)	branch (Nos)	Total (Nos)												Upper End (M)	Lower End (M)	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
12.	5-4	–	44	44	594	92.22	60.00	152.22	50.74	152.22	80	5.40	45	0.06	99.80	138.67	138.61	38.81
13.	4-4.1	44	–	44	594	92.22	40.00	132.22	44.07	132.22	80	3.81	145	0.55	99.75	138.61	138.05	38.30
14.	5.1-5.2	–	–	–	–	–	40.00	40.00	13.33	40.00	80	1.50	60	0.09	99.90	138.03	137.94	38.04
15.	5.1-5.3	–	21	21	284	44.09	–	44.09	14.70	44.09	80	1.50	20	0.03	99.85	138.03	138.00	38.15
16.	5.3-5.4	9	12	21	284	44.09	–	44.09	14.70	44.09	80	1.50	40	0.06	99.80	138.00	137.94	40.14
17.	5.4-5.5	7	5	12	165	25.62	–	25.62	8.54	25.62	80	1.50	40	0.06	99.70	137.94	137.88	38.18
18.	5.5-5.6	3	2	5	68	10.56	–	10.56	3.51	10.51	80	1.50	40	0.06	99.75	137.88	137.82	38.07
19.	5.6-5.7	2	–	2	27	4.19	–	4.19	1.40	4.19	80	1.50	45	0.06	99.90	137.82	137.76	37.86
20.	5.6-5.12	3	–	3	41	6.36	–	6.36	2.12	6.36	80	1.50	30	0.05	99.90	137.82	137.37	37.47
21.	5.5-5.11	7	–	7	95	14.75	–	14.75	4.92	14.75	80	1.50	35	0.05	99.78	137.88	137.83	38.05
22.	5.4-5.10	9	–	9	121	18.78	–	18.78	6.26	18.78	80	1.50	45	0.07	99.80	137.94	137.87	38.07
23	5.3-5.8	11	–	11	148	22.97	–	22.97	7.65	22.79	80	1.50	50	0.11	99.85	138.00	137.89	38.04
1.	STP-1	28	62	90	1215	188.62	60.00	248.62	82.87	248.62	80	13.80	120	1.66	99.91	139.95	138.29	38.38
2.	1-2	–	43	43	581	90.20	60.00	150.20	50.06	150.20	80	5.40	40	0.21	99.90	138.29	138.08	38.18
3.	2-3	–	28	28	378	52.58	60.00	118.58	39.52	118.58	80	3.81	40	0.15	99.85	138.08	137.93	38.08
4.	1-1.1	15	–	15	203	31.52	–	31.52	10.44	31.52	80	1.10	135	0.15	99.92	138.29	138.14	38.22
5.	2-2.1	19	–	19	257	39.90	40.00	79.90	26.63	79.90	80	1.50	75	0.11	99.95	138.08	137.97	38.02
6.	3-3.1	28	–	28	378	58.68	40.00	98.68	32.89	98.68	80	2.50	190	0.22	99.90	137.93	137.71	37.81

Part-II

Av. GL at STP = 99.95 M.
Pump Head = 40.00 m
Hydraulic level = 139.95 m.

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

SUB WORK NO 1 — RECYCLED WATER SUPPLY

SUB HEAD NO. V — DISTRIBUTION SYSTEM FOR IRRIGATION

S. No	Desription	Qty.	Unit	Rate	Amount
1	Providing , laying , jointing and testing HDPE lines including cost of excavation, specials etc, complete in all respect HDPE PIPE 63 mm (OD)	435	M	675 ~~650~~	Rs 2.94 lacs ~~282750~~
2.	Providing and fixing sluice including cost of surface boxes & masonary chambers etc complete 63 mm i/d	3	No	5000	15000
3.	Providing and fixing QRCV (Quick Release Coupling valves) with chambers	12	No	4000	48000
4.	Providing and fixing scour valves and including cost of bricks masonaary chamber	3	No.	5000	15000
5.	Providing and fixing indicating plates for sluice valves and air valves .	~~2~~ 1	No.	1000/ ~~2500~~	0.02 ~~2500~~
6.	Provision for carriage of material	L.S			~~50000~~ 0.25
7.	Provision for cutting of roads & making good to its original conditions	L.S			0.25 ~~50000~~
					4.24 lacs
				Rs.	~~463250~~

Say 4.63 Lacs

(C.O. TO ABSTRACT OF COST SUB WORK NO.I)

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

SUB HEAD: RECYCLED WATER SUPPLY DISTRIBUTION FOR IRRIGATION OF LAWANS/ PLANTATION

MATERIAL STATEMENT FOR RECYCLED WATER SUPPLY PIPE

Sr.No	Line Referances	63mm (M)	Sluice valve (No)
1	5.2-5.2.1	120.0	1.0
2	5.2-5.2.2	130.0	1.0
3	5.6-5.6.1	185.0	1.0
	TOTAL	**435.0** mtr.	**3.0**

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL (Part I+II)

SUB WORK NO II — **SEWERAGE**

(INTERNAL SEWER)

S. No	Desription	Qty.	Unit	Rate	Amount
1	Providing, lowering, jointing & cutting salt glazed stone ware Pipe and spls into trenches including cost of excavation Bed concrete, cost of manholes, etc complete in all respect				
	i) 200 mm dia i/d S.W pipes Av. Depth upto 1.50M	1190	M	~~1000~~ 1250 ~~800~~	~~11,90,000~~ 14.87 las
	ii) 200 mm dia i/d S.W pipes Av. Depth upto 3.00M	530	M	~~1200~~ 1350/-	~~6,36,000~~ 7.16 las
2.	Provision for providing oblique junction etc	L.S			~~2,00,000~~ ~~25000~~ 0.50
3.	Provision for temporary timbering etc.	L.S.			~~1,50,000~~ ~~25000~~ 0.50
4.	Provision for lighting watching etc.	L.S.			25000
5	Provision for cutting the road and carriage of materials etc And other unforeseen charges	L.S			~~25000~~ 1.50 las
6	Provision for making connection with existing lines on master Road	L.S.			~~25000~~ 1.00 las
7	~~Provision for temporary disposal arrangement~~ Pcon for over flow line from STP to outfall	L.S.			~~150000~~ 0.50 las
8	Provision for ~~500~~ 450 KLD STP 150mmd upto tertiary level Both side (Part I & II)	L.S			~~150,00,000~~ ~~9000000~~ 45.00 las
	ADD 3% contingencies & P.E charges				71.28 las ~~1740000~~ 2.13 las ~~522030~~
	ADD 49% Departmental charges, price escalation, unforseen Admin.				~~17923030~~ 74.41 las ~~8782285~~ 36.46 las
					110.87 las ~~26705315~~

(C.O. TO FINAL ABSTRACT OF COST)

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

SUB HEAD: BASIS FOR STP CAPACIRY

1.0 DAILY DOMESTIC REQUIREMENT OF WATER

			Part- I	Part- II
	DAILY REQUIREMENT OF WATER			
I	Total No. of Plots units	=	153	90
	Population @ 13.50 person per dwelling unit			
	Total population	=	153 X 13.50	90 X 13.50
		=	2066	1215
	Total water requirement@			
	135 Lped + 15% UAF = 155.25 LPCD	=	2066 X 155.25	1215X155.25
		=	321 KLD	189 KLD
II	COMMUNITY BUILDING	=	40 KL/Day	—
III	SHOPPING (Commercial 1&2)	=	10 KLD	10 KLD
	TOTAL DOMESTIC WATER REQUIREMENT	=	321+40+10	
		=	371 KLD	199 KLD
			Say 400 KLD	200 KLD

2.0 PROPOSED CAPACITY OF SEWRAGE TREATMENT PLANT

Quantum of water finding its way into the sewer @ 75% of water consumption

=	400 X 0.75	200 X 0.75
=	300 KLD	150 KLD

It is proposed to provide a sewage treatment plant capable of treating 450 KLD (300+150 KL) sewage per day

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

SUB HEAD: SEWERAGE SCHEME

MATERIAL STATEMENT SEWERAGE

Sr. No	Line Referances	200 mm (m)		250 mm (m)	
		0 to 1.50 M	0 to 3.00 M	0 to 1.50 M	0 to 3.00 M
	Part-I				
1.	$D_1 - D - C$	190	--	--	--
2.	$C_1 - C_2$	25	--	--	--
3.	$C_2 - C_3$	40	--	--	--
4.	$C_{3_1} - C_3$	30	--	--	--
5.	$C_3 - C_4$	40	--	--	--
6.	$C_{4_1} - C_4$	40	--	--	--
7.	$C_4 - C_5$	40	--	--	--
8.	$C_{5_1} - C_5$	50	--	--	--
9.	$C_5 - C_6$	20	--	--	--
10.	$C_{6_1} - C_6$	70	--	--	--
11.	$C_6 - C$	-	125	--	--
12.	$C - B$	-	35	--	--
13.	$B_1 - B$	55	--	--	--
14.	$B - B_2$	-	110	--	--
15.	$A - B_2$	210	--	--	--
16	B_2 - STP-I	-	15	--	--
	PART-II				
1.	$E_1 - E$	170	--	--	--
2.	$E_2 - E$	35	--	--	
3.	$E - F$	-	40	--	--
4.	$F_1 - F$	70	--	--	

Sr. No	Line Referances	200 mm (m)		250 mm (m)	
		0 to 1.50 M	0 to 3.00 M	0 to 1.50 M	0 to 3.00 M
5.	F-G	-	40	--	--
6.	G_1 - G	105	--	--	
7.	G - STP-II	--	165	--	
		--	--	--	
	TOTAL	1190 mtr	530 mtr.	--	

TEHSIL & DISTT KARNAL

DESIGN STATEMENT OF SEWERAGE SYSTEM

Part-I

Sr. No	Name of pipe Line	Nos of plots to be served			Total population @ 13.5 person per plot	water consumption @ 155.25 LPCD or 34.196 gallons	Requirement of community fuility and commercial	Total requirement	Disch. @ 75% 3DWF in cusecs	size of sewer	Length	Gradient
		seff	branch	Total								
1	2	3	4	5	6	7	8	9	10	11	12	13
1.	D_1-D-C	44	-	44	594	20312	-	20312	0.08	200	190	1/340
2.	C_1-C_2	3	-	3	41	1402	-	1402	0.01	200	25	1/340
3.	C_2-C_3	-	3	3	41	1402	-	1402	0.01	200	40	1/340
4.	C_{3_1}-C_3	7	-	7	95	3249	-	3249	0.01	200	30	1/340
5.	C_3-C_4	-	10	10	135	4616	-	4616	0.02	200	40	1/340
6.	C_{4_1}-C_4	9	-	9	122	4172	-	4172	0.02	200	40	1/340
7.	C_4-C_5	-	19	19	257	8788	-	8788	0.04	200	40	1/340
8.	C_{5_1}-C_5	11	-	11	149	5095	-	5095	0.02	200	50	1/340
9.	C_5-C_6	-	30	30	405	13849	-	13849	0.06	200	20	1/340
10	C_{6_1}-C_6	-	-	-	-	-	8810	8810	0.04	200	70	1/340

PROPOSED "AFFORDABLE PLOTTED HOUSING COLONY" IN SECTOR-28 &28A , VILLAGE KAILASH, TEHSIL & DISTT KARNAL

DESIGN STATEMENT OF SEWERAGE SYSTEM

Sr. No	velocity in ft / Sec	Design Disch. In cusecs	Fall in (M)	Ground Level (M)		Bed Level (M)		Depth with GL(M)		Mean depth in (M)	Remarks
				Upper End	Lower End	Upper End	Lower End	Upper End	Lower End		
	14	15	16	17	18	19	20	21	22	23	24
1	2.00	0.36	0.56	99.75	99.80	98.55	97.99	1.20	1.81	1.50	
2	2.00	0.36	0.07	99.78	99.75	98.58	98.51	1.20	1.24	1.22	
3	2.00	0.36	0.12	99.75	99.78	98.55	98.43	1.20	1.34	1.27	
4	2.00	0.36	0.09	99.80	99.70	98.60	98.51 98.43	1.20	1.19	1.20	
5	2.00	0.36	0.12	99.70	99.80	98.43	98.32	1.34	1.48	1.41	
6	2.00	0.36	0.12	99.80	99.80	98.60	98.58 98.32	1.20	1.22	1.21	
7	2.00	0.36	0.12	99.80	99.85	98.32	98.20	1.48	1.65	1.57	
8	2.00	0.36	0.15	99.90	99.85	98.70	98.65 98.20	1.20	1.20	1.20	
9	2.00	0.36	0.09	99.90	99.85	98.20	98.11	1.65	1.74	1.70	
10	2.00	0.36	0.20	99.90	99.85	98.70	98.50 98.11	1.20	1.35	1.27	

Sr. No	Name of pipe Line	Nos of plots to be served			Total population @ 13.5 person per plot	water consumption @ 155.25 LPCD or 34.196 gallons	Requirement of community fuility and commercial	Total requirement	Disch. @ 75% 3DWF in cusecs	size of sewer	Length	Gradient
		seff	branch	Total								
1	2	3	4	5	6	7	8	9	10	11	12	13
11.	C_6 - C	31	30	61	824	28178	8810	36988	0.15	200	125	1/340
12	C - B	-	105	105	1418	48490	8810	57300	0.24	200	35	1/340
13.	B_1 - B	10	-	10	135	4616	2202	6818	0.03	200	55	1/340
14.	B - B_2	-	118	118	1593	54474	2202	56676	0.24	200	110	1/340
15.	A - B_2	35	-	35	472	16141	-	16141	0.07	200	210	1/340
16	B_2 - STP-I	-	153	153	2066	70649	11012	81661	0.34	200	15	1/340
PART- II												
1.	E_1 - E	28	-	28	378	12926	-	12926	0.05	200	170	1/340
2.	E_2 - E	-	-	-	-	-	2203	2203	0.01	200	35	1/340
3.	E - F	-	28	28	378	12926	2203	15129	0.06	200	40	1/340
4.	F_1 - F	19	-	19	257	8788	-	8788	0.04	200	70	1/340
5.	F - G	-	47	47	635	21714	2203	23917	0.10	200	40	1/340
6.	G_1 - G	28	-	28	378	12926	-	12926	0.05	200	105	1/340
7.	G - STP-II	15	75	90	1215	41548	2203	43751	0.18	200	165	1/340

हरियाणा शहरी विकास प्राधिकरण
HARYANA SHEHRI
VIKAS PRADHIKARAN

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

C.E.II-No. 161473.
Dated: 09/08/18

Annexure-A

SUB:- **Approval of service plan estimates of affordable residential plotted colony (Under Deen Dayal Jan Awas Yojna-2016) over an area measuring 14.00 acres falling under license No. 23 of 2018 dated 18.4.2018 being developed by Alpha Corp. development Pvt. Ltd. in the revenue estate of Village Kailash Sec-28 & 28A Karnal, Distt. Karnal.**

Technical note and comments:-

1. All detailed working drawings would have to be prepared by the colonizer for Integrating the internal services proposals with the master proposals of town.
2. The correctness of the levels will be the sole, responsibility of the colonizer for the integration of internal proposals, with the master proposals, of town and will be got confirmed before execution.
3. The material to be used shall the same specifications as are being adopted by HSVP and further shall also confirm to such directions, as issued by Chief Engineer, HSVP from time to time.
4. The work shall be carried out according to Haryana PWD specification or such specifications as are being followed by HSVP. Further it shall also confirm to such other directions, as are issued by Chief Engineer, HSVP from time to time.
5. The colonizer will be fully responsible to meet the demand of water supply and allied services till such time these are made available by State Government/ HSVP. All link connections with the State Government/ HSVP system and services will be done by the colonizer. If necessary extra tube-wells shall also be installed to meet extra demand of water beyond the provision according to EDC deposited.
6. Structural design & drawings of all the structures, such as pump chamber, boosting chamber, RCC OHSR underground tanks quarters, manholes chamber, sections of RCC pipes sewer and SW pipes, sewer, ventilating shafts for sewerage and Masonry Ventilation Chamber for Chamber for storm water drainage, temporary disposal/ arrangement etc. will be as per relevant I.S codes and PWD specifications; colonizer himself will be responsible for structural stability of all structures.

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हरियाणा शहरी विकास प्राधिकरण
HARYANA SHEHRI
VIKAS PRADHIKARAN

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

C.E. No:

Dated:

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

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

9. A minimum 100 i/d C.I/D.I, 200mm i/d SW and 400mm id RCC NP-3 pipes will be used for water supply, sewerage and storm water drainage respectively.

10. Standard X-section for S.W. pipes sewer, RCC pipes sewer etc. will be followed as are being adopted in Haryana Public Health Engineering Deptt. or HSVP.

11. The X-section, width of roads, will be followed as approved by the Chief Town Planner, Haryana, Chandigarh. The kerbs and channels will also be provided as per approved X-section and specifications.

12. The specifications for various roads will be followed as per IRC/MORTH specifications.

13. The wiring system of street lighting and specifications of street lighting fixture will be as per relevant standards.

14. This shall confirm to such other conditions as are incorporated in the approved estimate and the letter of approval.

Executive Engineer (HQ),
For Chief Engineer-II, HSVP,
Panchkula.

5/5/18

Sr. No	velocity in ft / Sec	Design Disch. In cusecs	Fall in (M)	Ground Level (M)		Bed Level (M)		Depth with GL(M)		Mean depth in (M)	Remarks
				Upper End	Lower End	Upper End	Lower End	Upper End	Lower End		
	14	15	16	17	18	19	20	21	22	23	24
11.	2.00	0.36	0·37	99·85	99·80	98·11	97·74 / 97·99	1·35	2·06	1·70	–
12.	2.00	0.36	0.10	99·80	99·85	97·74	97·64	2·06	2·21	2·14	–
13.	2.00	0.36	0·16	99·90	99·85	98·70	98·54 / 97·64	1·20	1·28	1·24.	–
14.	2.00	0.36	0·32	99·85	99·40	97·64	97·32	2·21	2·08	2·15	–
15.	2.00	0.36	0·62	99·95	99·40	98·75	98·13 / 97·33	1·20	1·27	1·24	–
16	2.00	0.36	0·04	99·40	99·40	97·32	97·28	2·28	2·12	2·16.	–
PART- II			–								–
1.	2.00	0·36	0·50	99·90	99·85	98·70	98·20	1·20	1·65	1·43	–
2.	2.00	0.36	0·10	99·70	99·85	98·50	98·40 / 98·29	1·20	1·45	1·33	–
3.	2.00	0·36	0.12	99·85	99·90	98·20	98.08	1·65	1·82	1·73	–
4.	2.00	0.36	0·21	99·95	99·90	98·75	98·54 / 98·08	1·20	1·36	1·28	–
5.	2.00	0·36	0.12	99·90	99·91	98·08	97·96	1·82	1·95	1·89	–
6.	2.00	0·36	0·31	99·90	99·91	98·70	98·39 / 97·96	1·20	1·52	1·36	–
7.	2·0	0·36	0·49	99·91	99·92	97·96	97·47	1·95	2·45	2·20	

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

SUB WORK NO III — **STORM WATER DRAIN**

RCC PIPE DRAIN

S. No	Desription	Qty.	Unit	Rate	Amount
1	Providing, lowering, jointing & cutting salt glazed stone RCC Pipe NP-3 and spls into trenches including cost of excavation Bed concrete, cost of manholes, etc complete in all respect ~~(HSR 29.96)~~				@ 43.50 lacs
	a) 400 mm dia i/d RCC NP-3 pipes Av. Depth upto 1.5 M	1740	M	~~2800~~ ~~1364~~ 2500/-	~~4872000~~ ~~2373360~~
2.	Provision for road gullies with 300 mm ø pipe Connection	L.S			500000
3.	Rain water Harvesting pit ~~for 13.3138 acres and total area~~ at Selected Places of rain harvesting well 24 sqm with size 8.00 x 3.00M ~~(Analysis attached)~~	(L.S) ~~1 No~~	~~Each~~	~~330000~~	10.00 lacs ~~330000~~
4.	Provision for lighting watching and temporary diversion	L.S.			100000
5	Provision for cutting the road and carriage of materials etc and other unforeseen charges	L.S			200000
6	Provision for making connection with existing system on master road	L.S.			100000
7	Provision for ~~construction of pumping station at last M.H.~~ Temporary disposal arrangement till HUDA services are made available	L.S			500000
					@ 67.50 lacs ~~6602000/-~~ Rs. ~~4103360/-~~
	ADD 3% contingencies & P.E charges				@ 2.02 lacs ~~198060~~ Rs. ~~123101/-~~
					@ 69.52 lacs ~~6800060~~ Rs. ~~4226461/-~~
	ADD 49% Departmental charges, price escalation unforseen, Admn.				@ 34.06 lacs ~~3332029~~ Rs. ~~2070966/-~~
					@ 103.58 lacs Rs. ~~6297427/-~~ ~~10132089~~
					Say Rs. ~~62.97~~ LACS 101.35

(C.O. TO FINAL ABSTRACT OF COST)

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

SUB HEAD: STORM WATER DRAINAGE SCHEME

MATERIAL STATEMENT STORM WATER DRAINAGE

Sr. No	Line Referances	400 mm (M)
1	N1-N2	210.0
2	N2-N3	115.0
3	N3.1-N3	55.0
4	N3-N4	40.0
5	N4.5-N4.4	55.0
6	N4.4-N4	25.0
7	N4.4-N4.3	40.0
8	N4.3'-N4.3	35.0
9	N4.3-N4.2	40.0
10	N4.2'-N4.2	40.0
11	N4.2-N4.1	25.0
12	N4.1'-N4.1	40.0
13	N4.1-N4	125.0
14	N4-N5	35.0
15	N5.1-N5	135.0
16	N5-N6	80.0
17	N6.1-N6	135.0
18	N6-N7	50.0

Sr. No	Line Referances	400 mm (M)
19	N7.1-N7	65.0
20	N7-N8	40.0
21	N8.1-N8	95.0
22	N8-N9	35.0
23	N9.1-N9	95.0
24	N9-Out Fall	100.0
25	N9.1-R.W.H	30.0
	TOTAL	**1740.0** mtrs

PROPOSED "AFFORDABLE PLOTTED HOUSING COLONY" IN SECTOR-28 &28A , VILLAGE KAILASH, TEHSIL & DISTT KARNAL

DESIGN STATEMENT FOR STORM WATER DRAINAGE

Sr. No	Name of Line	Catchment area			Design Discharge with C 0.5 and 1/4" rain intensity in cusecs	size of pipe mm	length	Gradient	Fall in M	Design velocity in ft/sec	Design Disch in cusecs
		seff	branch	Total							
1	2	3	4	5	6	7	8	9	10	11	12
1	N1-N2	1.50	.--	1.50	0.38	400	210	.1/1200	0.18	1.72	2.40
2	N2-N3	0.50	1.50	2.00	0.50	400	115	.1/1200	0.10	1.72	2.40
3	N3.1-N3	0.80	.--	0.80	0.20	400	55	.1/1200	0.05	1.72	2.40
4	N3-N4	0.40	2.80	3.20	0.80	400	40	.1/1200	0.03	1.72	2.40
5	N4.5-N4.4	0.60	.--	0.60	0.15	400	55	.1/1200	0.05	1.72	2.40
6	N4.4-N4.4	0.60	3.80	4.40	1.10	400	25	.1/1200	0.02	1.72	2.40
7	N4.4-N4.3	0.80	4.40	5.20	1.30	400	40	.1/1200	0.03	1.72	2.40
8	N4.3'-N4.3	0.70	5.20	5.90	1.48	400	35	.1/1200	0.03	1.72	2.40
9	N4.3-N4.2	0.80	5.90	6.70	1.68	400	40	.1/1200	0.03	1.72	2.40
10	N4.2'-N4.2	0.8	.--	0.80	0.20	400	40	.1/1200	0.03	1.72	2.40
11	N4.2-N4.1	0.7	7.4	8.10	2.02	400	25	.1/1200	0.02	1.72	2.40

PROPOSED "AFFORDABLE PLOTTED HOUSING COLONY" IN SECTOR-28 &28A , VILLAGE KAILASH, TEHSIL & DISTT KARNAL

DESIGN STATEMENT FOR STORM WATER DRAINAGE

Sr. No	Ground Level (M)		Bed Level (M)		Depth with GL(M)		Av Depth with GL (M)	Remarks
	Upper End	Lower End	Upper End	Lower End	Upper End	Lower End		
	13	14	15	16	17	18	19	20
1	99.95	99.75	98.75	98.57	1.20	1.18	1.19	Av. depth 400 mmi/d SWD (RCC Pipe NP3) = 34.16/24=1.42 sSay 1.50 Mtr
2	99.75	99.85	98.55	98.45	1.20	1.40	1.30	
3	99.90	99.85	98.70	98.65 98.45	1.20	1.20	1.20	
4	99.85	99.78	98.45	98.42	1.40	1.36	1.38	
5	99.78	99.78	98.58	98.53 98.42	1.20	1.25	1.23	
6	99.80	99.78	98.60	98.58 98.42	1.20	1.20	1.20	
7	99.78	99.80	98.42	98.39	1.36	1.41	1.39	
8	99.85	99.80	98.65	98.62 98.39	1.20	1.18	1.19	
9	99.80	99.85	98.39	98.36	1.41	1.49	1.45	
10	99.90	99.85	98.70	98.67 98.36	1.20	1.18	1.19	
11	99.85	99.85	98.36	98.34	1.49	1.51	1.50	

Sr. No	Name of Line	Catchment area			Design Discharge with C 0.5 and 1/4" rain intensity in cusecs	size of pipe mm	length	Gradient	Fall in M	Design velocity in ft/sec	Design Disch in cusecs
		seff	branch	Total							
1	2	3	4	5	6	7	8	9	10	11	12
12	N4.1'-N4.1	0.50	.--	0.50	0.12	400	40	.1/1200	0.03	1.72	2.40
13	N4.1-N4	0.40	.--	0.40	0.10	400	125	.1/1200	0.10	1.72	2.40
14	N4-N5	0.40	9.00	9.40	2.35	400	35	.1/1200	0.03	1.72	2.40
15	N5.1-N5	0.80	.--	0.80	0.20	400	135	.1/1200	0.11	1.72	2.40
16	N5-N6	0.40	10.20	10.60	2.65	400	80	.1/600	0.13	2.43	3.40
17	N6.1-N6	0.50	.--	0.50	0.12	400	135	.1/1200	0.11	1.72	2.40
18	N6-N7	0.40	11.10	11.50	2.87	400	50	.1/600	0.08	2.43	3.40
19	N7.1-N7	0.30	.--	0.30	0.08	400	65	.1/1200	0.05	1.72	2.40
20	N7-N8	0.20	11.80	12.00	3.00	400	40	.1/600	0.07	2.43	3.40
21	N8.1-N8	0.80	.--	0.80	0.20	400	95	.1/1200	0.08	1.72	2.40
22	N8-N9	0.30	12.80	13.10	3.27	400	35	.1/600	0.06	2.43	3.40
23	N9.1-N9	0.2138	13.10	13.3138	3.32	400	95	.1/600	0.16	2.43	3.40
24	N9-OUTFALL	.--	13.3138	13.3138	3.32	400	100	.1/600	0.17	2.43	3.40

Sr. No	Ground Level (M)		Bed Level (M)		Depth with GL(M)		Av Depth with GL (M)	Remarks
	Upper End	Lower End	Upper End	Lower End	Upper End	Lower End		
	13	14	15	16	17	18	19	20
12	99.90	99.85	98.70	98.67 98.34	1.20	1.18	1.19	.--
13	99.85	99.80	98.34	98.24	1.51	1.56	1.53	.--
14	99.80	99.80	98.24	98.21	1.56	1.59	1.58	.--
15	99.75	99.80	98.55	98.44 98.21	1.20	1.36	1.28	.--
16	99.80	99.85	98.21	98.09	1.59	1.64	1.61	.--
17	99.90	99.85	98.70	98.59 98.09	1.20	1.26	1.23	.--
18	99.85	99.90	98.09	98.01	1.64	1.89	1.76	.--
19	99.95	99.90	98.75	98.70 98.01	1.20	1.20	1.20	.--
20	99.90	99.91	98.01	97.94	1.89	1.97	1.93	.--
21	99.90	99.91	98.70	98.62 97.94	1.20	1.29	1.24	.--
22	99.91	99.90	97.94	97.88	1.97	2.02	1.99	.--
23	99.92	99.90	98.72	98.56 97.88	1.20	1.34	1.27	.--
24	99.90	99.95	97.88	97.71	2.02	2.24	2.13	.--

DESIGN CALCULATION FOR RAIN WATER HARVESTING

Total Area 1958.423+1495+300+179.300+283.50=4216.22 Sqm

Area of Each Harvesting cum rechargeing well = 4546 sqm

Total quanitity of rain fall 4546 x 0/025 = 105.50 cum or 105500 ltrs

Less 50% seepage or waste 52750 Ltrs

bal 52750 Ltrs or 11619 Gallons

Rate of filteration 50 gallon / sft/day

area of rain water harvesting cum recharging well

11619 / 50 = 235 sft or 21.58 sqm say 22 sqm.

Hence it proposed to construct 1 No. rainwater harvesting cum recharging well of size 8.00 x 3.00 mtr.

ANALAYSIS OF RAIN WATER HARVESTING PIT SIZE (8m X 3m)

S. No	HSR Item No	Description of Item	Qty.	Unit	Rate (In Rs.)	Amount (In Rs.)	C.P.	Amount involed due	Total (In Rs.)
1	6.7	Earth work in excavation in foundations trenches of underground structures sullage drains etc. and other similar works in ordinary soil including dressing and disposal of surplus soil as directed with in alead of 30 mtrs for depth upto 2 meters below natural ground level. 9.06x4.06x2.90=106.67	106.67 cum	100 cum	932	994.16	370%	3678.4	4672.57
2	10.38	Cement concrete 1:4:8 with brick ballast 40mm nominal size in foundation and plinth 9.06x4.06x0.10=3.68 cum	3.68 cum	cum	420	1545.6	450%	6955.2	8500.8
3	10.41	Cement concrete 1:2:4 with stone aggreate 20 mm nominal size in foundation and plinth 8.76x3.76x0.08 = 2.64 cum	2.64 cum	cum	615.6	1625.18	450%	7313.33	8938.51
4	11.3	First class brick work laid in ceent sandmortar 1:5 in foundation and plinth 2(8.23x3.23)x3.05x0.23=17.65	17.65 cum	cum	407.6	7194.14	600%	43164.84	50358.98
5	10.82+ 10.95 (a)	Cement concrete 1:1½:3 with stone aggregate 20mm nominal size for reinforced concrete work in slabs with inclination not exceeding 25 degree with horizontal 1x8.46x3.46x0.15=4.39 cum	4.39 cum	cum	1084.8	4763.07	450%	21433.84	26196.91

S. No	HSR Item No	Description of Item	Qty.	Unit	Rate (In Rs.)	Amount (In Rs.)	C.P.	Amount involed due	Total (In Rs.)
6	15.3+15.75	12mm thick cement plaster 1:2+ cement rendering on ploaster 1mm thick 2(8.46+3.46)x0.45 = 13.17 sqm 2(8.00+3.00) x 3.05 = 146.40 sqm 2x3.00x2.28 = 13.68 sqm =173.25 sqm	173.25 sqm	p sqm	20.85	3612.26	500%	18061.31	21673.58
7	N.S.	Provision for provd. Laying, jointing cutting slloted pipe 10 kg pressure complete in all respect 200 mm i/d	100 Mtr	p Mtr	1400.00	140000.00	.–	.–	140000.00
8	N.S.	Pebble size 6mm - 12mm 1x6.77x3.00x0.75= 15.23 cum	15.23 cum	p cum	2200.00	33512.00	.–	.–	33512.00
9	N.S.	Course Gravel 1x6.77x3.00x0.15 = 3.05 cum	3.05 cum	p cum	2200.00	6710.00	.–	.–	6710.00
10	N.S.	Fine Gravel 1x6.77x3.00x0.15 = 3.05 cum	3.05 cum	p cum	2200.00	6710.00	.–	.–	6710.00
11	N.S.	Core sand 1x6.77 x 3.00x 0.50 = 10.15 cum	10.15 cum	p cum	2200.00	22341.00	.–	.–	22341.00

Rs. 329614.35

SAY RS. 330000.00

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

SUB WORK NO IV **ROADS AND FOOTPATHS**

S. No	Desription	Qty.	Unit	Rate	Amount
1	Providing for leveling and earth filling as per site conditions Net Planned area ~~13.3185~~ Acres @ ~~50000~~/- per acre	L.S			~~665925~~
2.	i) Proposed crust ~~150~~ mm thick GSB ii)Compacted to ~~100~~ mm thick WBM/WMM specification and iii) 50 mm thick ~~DBM~~ BM specification and conforming to MOT specification iv) ~~20mm thick SDBC~~ 25 mm thick P.C with Paver ~~4458~~ Sq.m @ Rs. ~~850~~/- per sq.m				~~3789300~~
3.	providing for kerbs & channels of C.Conc. 1:2½:5 with Base concrete and pointing etc. 1218 M @ Rs. ~~350/-~~ ~~500~~ /.	L.S.			~~426300~~
4.	Provision for cement concrete payment 1:2:4 with base Concrete 1:8:16 complete in all respects in Comm. area i.e. 50% of the area 0.467 x 4047 = 945 sqm @ Rs 600/- sqm	L.S.			~~100000~~
5	Provision for Indicator Board, Guide Map & making parking arrangements	L.S			100000
6	Provision for demarcation burji, carriage of material & unforeseen items				~~100000~~
7.	Provision for traffic arrangement (Lights)	L.S			~~Rs. 5181525/-~~
	ADD 3% contingencies & P.E charges				Rs. ~~154446/-~~
	ADD 49% Departmental charges, price escalation unforseen, Admn.				Rs. ~~5336971/-~~ Rs. ~~2615116/-~~ Rs. 7952087/-
	Say Rs. ~~79.52~~ LACS				

(C.O. TO FINAL ABSTRACT OF COST)

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

SUB HEAD : DETAILS OF LENGTH OF THE ROAD IN MTRS

Road No	14.43 M wide	12 M wide	10.50 M wide	9 M wide
1	--	--	--	90
2	--	--	--	70
3	--	--	--	80
4	--	--	--	35
5	--	--	--	35
6	--	--	--	140
7	--	--	--	115
8	--	--	--	60
9	--	--	--	200
10	--	--	--	20
11	--	--	--	30
12	--	--	--	35
13	--	--	--	40
14	--	--	--	210
TOTAL	--	--	--	1160
Add 5% for curves	--	--	--	58
TOTAL	--	--	--	**1218** mtr

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

Design standard adopted IRC:42-2018 Guide lines for the design of Flexible payements

Sr. No	Road width (M)	Length in M (9M wide)	Mettalled width (M)	Mettalled width (Sq.m)	Kerb & channels fixing one side (M)
1	9 M wide road	1218	~~3.66~~ 5.50	~~4457.88~~ 6699	1218
	TOTAL	--	--	~~4457.88~~ Say ~~4458~~ 6700	1218

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

SUB WORK NO V **STREET LIGHTING**

AMOUNT (RS)

Providing street lighting with underground on roads as per Standard ~~H.S.E.B~~ HVPN Specifications with CFL

Total planned Area :13.3185

~~11.2668~~ acres @ Rs. ~~150000~~/- per acre ~~13.3185~~ 14.00 2.50 lacs

Rs. ~~1997775/-~~ 35.00 lacs ~~3329625~~

ADD 3% contingencies & P.E charges

Rs. ~~59933/-~~ 1.05 lacs ~~99888~~/-

ADD 49% Departmental charges, price escalation, supervision, Admn.

Rs. ~~1997775/-~~ 35.00 lacs ~~3329625~~/-

Rs.~~2057708/-~~ 36.05 lacs ~~3429513~~/-

Rs. ~~108277/-~~ 17.66 lacs ~~1080461~~/-

Rs. ~~3065985/-~~ 53.71 lacs ~~5109974~~/-

Say ~~Rs.30.60~~ LACS 51.10 lacs

(C.O. TO FINAL ABSTRACT OF COST)

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

ESTIMATE FOR DEVELOPMENT OF LAWNS & PLANTATION OF ROAD SIDE TREES

SUB WORK NO VI **AMOUNT (RS)**

HORTICULTURE

Plantation and road side trees

Amount in Rs.

1) Development of lawn areas

a) Trenching of ordinary soil up to a depth of 60 cms i/c removal and stacking of serviceable material and disposing by spreading and leveling with in a lead of 50m and making up the trench area for proper levels by filling with earth or earth mixed with manure before and after flooding trench with water i/c cost of imported earth and manure.

b) Rough dressing of turf area.

c) Grassing with "DOOB GRASS" i/c watering and maintenance of lawns for 30 days till the grass forms a thick lawn,from weeds and fit for moving in row 7.5cm part in either direction.

Net planned area ~~13.3185~~ 1.234 acres organized green @ 150000/ acre ~~1997775/-~~ 1.85 lacs

2. Providing and planting trees along boundary @ 5m interval

Total road length = 1218

No of trees = 1218/12 = ~~102 trees~~ 203 Trees

1218 x 2/12

Cost details:-

Excavation = ~~50~~ 60 -

Manure = ~~80~~ 90 -

Tree planting = ~~440~~ 150 -

Tree guard 1000

Total = ~~570~~ 1300

~~102~~ 103 trees @ ~~570~~/ tree 1300/-

ADD 3% contingencies & P.H charges 2.64 lacs ~~2,63,400/-~~

58140/-

§ 4.49 lacs ~~2261675/-~~ Rs. ~~2055915/-~~

§ 0.13 lacs ~~67850/-~~ Rs. ~~61677/-~~

§ 4.62 ~~2324525~~ Rs. ~~2117592/-~~

Total § 2.26

ADD 49% Departmental charges price ~~1141487/-~~ Rs. ~~1037620/-~~

Escalation and other unforeseen charges 6.88 lacs

Grand Total **Rs. ~~3155212/-~~** ~~3470992/-~~

Say ~~Rs.31.55~~ LACS

~~34.71~~ lacs

(C.O. TO FINAL ABSTRACT OF COST)

PROPOSED "AFFORDABLE RESIDENTIAL PLOTTED COLONY" IN SECTOR 28 & 28A, VILLAGE KAILASH, TEHSIL & DISTT KARNAL

MTC. CHARGES

SUB WORK NO VII **AMOUNT (RS)**

1 Provision for maintenance charges for water supply sewerage, drainage, roads, street light, horticulture etc complete including operation and establishment charges as per HUDA norms after completion
Net planned area ~~13.3185~~ 14.00 acres @ Rs. ~~5~~ 7.50 Lacs per acre Rs. ~~6659250~~/- 105.00 4488875

2 Provision for resurfacing of roads after five years
i.e. 100 mm thick BM and 25 mm thick Premix carpet with mechanical Paver.
of Ist phase
~~4458~~ 6700 sq.m @ ~~200/-~~ 600/- per sq.m Rs. ~~891600~~/- ~~2674800~~/- 40.20 lacs

3. IInd phase after ten years (~~Proposed~~ erust)
i) ~~150mm thick G.S.B~~ 300 Resurfacing of roads after 10 years
ii) ~~100 mm thick WBM/WMM specification and aggregate to MOT~~ 750 qty. by providing 25 mm thick Premix carpet with seal coat with mechanical paver
iii) ~~50 mm thick DBM~~
iv) ~~SDBC 20 mm thick~~ ~~25mm thick PC~~
~~4458~~ 6700 sq.m @ ~~350/-~~ 750/- per sq.m Rs. ~~1560300~~/- ~~3343500~~/- 50.25 lacs

~~Rs. 9111150/-~~ @ 195.45 ~~16007175~~/-

ADD 3% contingencies & P.E charges Rs. ~~273335~~/- @ 5.86 lacs ~~4802215~~/-

~~Rs. 9384485/-~~ @ 201.31 lacs ~~16487390~~/-

ADD 49% Departmental charges Rs. ~~4598397~~/- @ 98.64 ~~8078621~~/-
Price escalation, unforseen adum.

~~Rs. 13982882/-~~ @ 299.95 lacs ~~24566271~~/-

Say Rs.139.83 LACS ~~245.70 lacs~~

(C.O. TO FINAL ABSTRACT OF COST)

For Alpha Corp Development Pvt. Ltd.

Authorised Signatory