

INTERNAL DEVELOPMENT WORKS

DESIGN AND COST ESTIMATES

FOR

REVISED BUILDING PLANS FOR TOWERS
6,7,8,9,10,11,12 & 13 OF ASHIANA ANMOL GROUP
HOUSING COLONY BEING DEVELOPED ON
13.3375 ACRES LAND, SECTOR - 33, SOHNA
(LICENCE NO. 20 OF 2014 DATED 11.06.2014)
DISTRICT-GURGAON (HARYANA)

DEVELOPED BY:

M/s UNIVERSE HEIGHTS (INDIA) PVT. LTD.
AND
ASHIANA HOUSING LTD.



REPORT

DTCP had granted License No. 20 of 2014 dated 11.06.2014 on land measuring 13.3375 acres land situated in Villagen Dhunela, Sector - 33, Sohna for development of a group housing colony in favour of Universe Heights Pvt. Ltd. with Ashiana Housing Ltd. as a joint developer with the approval of DTCF vide Memo No LC/2818-JE(VA)-2015/23127 Dated 26.11.2015. The group housing colony is being developed in a planned manner in phases. Phase - 1 on land measuring approx. 7.69 acres has been fully developed and occupation permission for five number towers namely A-C (1 no.), B-C (1 no.), C-C (3 nos.), community building, nursery school, EWS block and convenient shops has been granted till date. The building plans of the Phase - 2 (current phase whose estimates are being submitted now) have been revised now vide DTCF Memo No ZP-994-11/JD(RD)/2021 / 5557 dated 05.03.2021. It comprises of Towers 6,7,8,9,10,11,12 & 13 with single level basement on land measuring approx 5.6475 acres. The colony level main services e.g. Underground water tank, sewerage treatment plant, Underground Fire Tank etc. are all located in the basement of Phase - 1 and are fully functional. The internal / external services of Phase - 2 will be connected with already functional services.

WATER SUPPLY

At present the source of water supply in this area is municipal / tanker / borewell. As the underground water is potable, provision for 2 number of tubewells has been made in this estimate. It has been proposed to construct the underground tanks of capacity as per attached details and location for domestic purpose and for fire protection. The underground tanks will be fed temporarily by the borewell till the time the HUDA supply is laid. The water supply system has been designed as per Hazen Williams formula.

DESIGN

The scheme has been designed for population of approx. 2520 persons for Housing. The rate of water supply per head / day has been taken as 172.50 liters as per HUDA norms in addition to above necessary provision of water for club and parks etc. have been taken into account for calculating the maximum quantity of water requirement

PUMPING REQUIREMENTS / EQUIPMENTS

It has been proposed to install pumping set as described with standby of equal capacity. The provision for standby diesel generating set has also been provided in case of any electricity failure. Provision of chlorination has been made before distribution of potable water

UNDERGROUND STORAGE TANK

Underground storage tank provision has been made in two compartments, which cater for the domestic as well as for fire fighting requirement. The water for fire water compartment shall overflow to the domestic compartment so that the water in the fire compartment also remain full & fresh and will not contaminate



BOOSTING STATION

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

DISTRIBUTION SYSTEM

The distribution system for this development has been designed to supply @ 172.50 liter per head per day @ 3 times the average rate of flow on Hazen William formula. Necessary provision for laying C/D pipes conforming to relevant IS standard along with valves and special has been made in the project. The minimum terminal head at any point will be more than 70 m so that it can serve the G + 14 floors construction envisaged in the plan. Minimum pipe dia. for distribution is kept as 100/150 mm dia.

RISING MAIN

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

SEWERAGE SCHEME

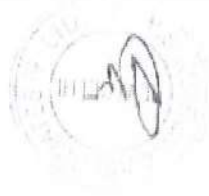
This scheme has been designed for sewer connecting to the existing STP in Phase - 1 & over flow of STP will be connected to HUDA sewer main. The sewerage system has been marked on respective plans

The sewer lines have been designed for three times average D.W.F. in relation to water supply demand. It has been assumed that about 80% of the domestic water supply shall find its way into the proposed sewer. Sewer lines shall be laid to a gradient maintaining minimum 0.75 m/sec self cleaning velocity. Necessary provision for laying S.W./R.C.C. pipe sewer line, construction of required number of manholes etc. has been made in the estimate.

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

STORM WATER DRAINAGE

Since the Master Scheme has been proposed with pipe drain, we proposed to lay pipe drains with required number of catch basins for disposal of storm water. The intensity of rain fall has been taken as 40-50 mm per hour. Avg. Co-efficient of run-off has been considered as 0.5 for the proposed design development. A minimum size of 400 mm dia pipe R.C.C. storm water NP3 pipes will be provided and designed as per Manning's formula.



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FIRE

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

SPECIFICATIONS

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

ROADS

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

The specification of 6M wide roads:

1. GSB-200 mm in one layer.
2. WBM-250 mm in Two layer.
3. DBM-50 mm thick.
4. BC-25 mm thick.

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

STREET LIGHTING

Provision of lighting on surrounding area has been made.

HORTICULTURE

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

RATES

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

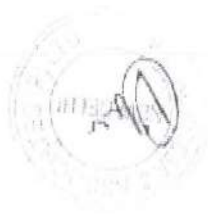
COST PHASE - II

The total cost of the scheme, including cost of all services works out to Rs. ~~643.08~~ ^{879.70} Lacs including 3% contingencies and 49% departmental charges, price escalation & other unforeseen charges. Cost of per Acres Rs. ~~13.87~~ ^{155.77} Lacs.

COST OF PHASE - I ALREADY APPROVED

The total cost of the scheme, including cost of all services works out to Rs. 927.32 Lacs including 3% contingencies and 49% departmental charges, price escalation & other unforeseen charges. Cost of per Acres Rs. 120.59 Lacs.

M/S UNIVERSE HEIGHTS (INDIA) PVT. LTD.
ASHIANA HOUSING LTD.
(AUTHORIZED SIGNATORY)
For ASHIANA HOUSING LIMITED



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SERVICE DESIGN AND ESTIMATES FOR REVISED BUILDING PLANS FOR TOWERS
 6,7,8,9,10,11,12 & 13 OF ASHIANA ANMOL GROUP HOUSING COLONY BEING
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TOTAL WATER REQUIREMENT

(i) DAILY WATER REQUIREMENT (Phase - II)

A Residential blocks	
a) Tower-6 (G+14) (3 BHK)	=
b) Tower-7 (G+14) (3 BHK & 2 BHK)	=
c) Tower-8 (G+14) (3 BHK)	=
d) Tower-9 (G+14) (3 BHK & 2 BHK)	=
e) Tower-10 (G+14) (3 BHK)	=
f) Tower-11 (G+14) (3 BHK)	=
g) Tower-12 (G+14) (2 BHK)	=
h) Tower-13 (G+14) (3 BHK)	=
Total	=
5 person per unit	=
B Service Personnel in tower 8 & 11	=
@ 2 Persons/Unit	=
Total population (A+B)	=
@ 172 50 LPCD (1)	=
Horticulture & Road Work	=
a) Area under park 3592.8 sqmt. @ 0.89 Acre 2.25 KL/Acre = 22250	=
b) Area under road 10% of 5.64/5 acres @ 25 KL/Acre	=
Total	=
Or Say	=
35000	=
35676.00 Liters/day	=
34300	=
35675.55 Liters/day	=
9750 sqm or 2.41 Acre 25 KL/Acre = 12050	=
14118.75 Liters/day	=
21556.80 Liters/day	=
434700 Liters/Day	=
2520 Persons	=
120 Persons	=
60 Units	=
2400 Persons	=
480 Units	=
60 Units	=
60 Units	=
60 Units	=
60 Units	=
60 Units	=
60 Units	=
60 Units	=
60 Units	=



4

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

Total Water demand
Total Water demand (KLD)
Or Say
434.70 KLD
~~437.00 KLD~~
282.55

Domestic water demand
Domestic water demand (KLD)
Or Say
= 282.55
282.30 KLD
= 285
330.00 KLD
152.145
13.400 Liters/day
= 152.15
13.40 KLD
= 155
127.00 KLD

Sewage Treatment Plant Capacity
Average Sewage Contribution Considering 80% of domestic water demand & 80% of Flushing demand
Add 5% margin factor
Sewage Treatment Plant Capacity (KLD)
Or Say
= 359.10 KLD
365 KLD
17 KLD
359.10 Liter / Day
348 KLD

Sewage scheme
Peak discharge @ 3 times of sewage discharge plus sub soil infiltration @ 10% of total water demand
= 348000
359100 Liters
76652
79800 GPD
0.142
0.148 Cusces
0.391 Cusces
= 0.539 Cusces
0.533

Total
Add discharge coming from Phase I
= 0.539 Cusces
0.391 Cusces
0.148 Cusces
= 0.533
Hence 300 mm dia pipe having design capacity 0.948 cuses is sufficient to carry the above discharge



BOREWELLS

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

- (a) Total domestic water demand (KL.D) 985
(b) Number of borewells $\frac{985}{18 \times 16}$ 320

Add 10% extra

Total

Say

$$\begin{array}{rcl}
 & = & 320.00 \\
 & = & 0.98 \\
 & = & 1.15 \\
 & = & 0.10 \\
 & = & 0.11 \\
 & = & 1.08 \\
 & = & 1.20 \\
 & = & 2 \text{ No.}
 \end{array}$$

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



12.50 MPa

2 NS 40 LPM each

285157

Fire Tank Already provided as per N.B.C. in phase I = 200.00 KLD
 Fire Tank provided Ph. II $100 \frac{1350}{1000} = 135.74 \text{ KLD}$ say 200 KLD
 But it is proposed to construct an underground tank of 220 KLD having 135 KLD for
 treated water, 135 KLD as raw water, and 450 KLD for fire lighting already purposed
 on phase I as per location shown on plan i.e. Now Total 720 KLD. & Total 350 KLD.

71.586

95.0 Meters

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b) Flushing water supply requirement

(i) AV water demand

(ii) Flushing water supply demand

Flushing water demand (KLD)

Or Say

Pumping per hour @ 6 hour pumping (L.P.M)

Say
Pump HP = $\frac{355 \times 90 \times 100}{60 \times 75 \times 70}$

Or Say

It is proposed to provide 3 nos. of motors of 7.50 HP sets of 355 LPM discharge at 90 m head (One pump working & one pump stand by & generator set of same capacity in case of electric failure)

(V)

Irrigation Pumping

a) Plot Area for Phase - II

Water Demand of Horticulture + Road Area

8 Hours Pumping

Say
Head
Pump HP = $\frac{100 \times 35 \times 100}{60 \times 75 \times 70}$

Or Say

It is proposed to provide 2 nos. of motors of 5.00 HP sets of 100 LPM discharge at 35 M head (One pump are working and one as standby & generator set of same capacity in case of electric failure)

= 5.6475 Acres
= 22855.43 Sqmt
= 35000
= 35676.90 LPD
= 291.6799 LPM
= 100 LPM
= 35 Mt.
= 3.53 HP
= 5.10 HP



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(VI) PUMPS FOR FIRE PROTECTION

S. No.	Parameters	Location	Pump sets			
			Jockey	Main	Diesel	
1	Discharge in lpm	Pump Room	280 lpm	2850 lpm	2850 lpm	
2	Head in metre		110	110	110	
3	HP		15	120	120	
4	Quantity in nos		2	2	1	

Note - Quantity already taken in (phase I) not required in (phase II)

(VII) GENERATING SETS

S. No	Equipment	QTY	HP	Total HP	
1	Borewell	1	10.00	10.00	
2	Fire Jockey pumps	1	15.00	15.00	
3	Booster Pump (for domestic) + Flushing+ irrigation pump	2 + 2 + 1	30 + 11 + 25 + 25 + 5	105	
	Total		54.0	54.0	
	Or Say				
	Diversity 0.7 & Power factor 0.75				
	$1 \text{ m KVA} = 55 \times 0.746 \times 1.5 = 62$				
	$55 \times 40.28 = 2215.4$				
	KVA				
	KW HP				
	90.00				
	100				

It is proposed to add 100 KVA capacity for above said machinery to the main DG set.



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 ASHIANA ANJOL GROUP HOUSING COLONY BEING DEVELOPED ON 13.3375 ACRES LAND, SECTOR - 23,
 SOHNA II (LICENCE NO. 20 OF 2014 DATED 11.06.2014), DISTRICT-GURGAON (HARYANA)

FINAL ABSTRACT OF COST (Ph-II)

Sub Work	Description	Amount	(Rs.) in Lacs
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I	Water Supply Scheme	182.84	182.84
II	Sewerage Scheme	118.14	118.14
III	Storm Water Drainage	57.14	57.14
IV	Roads	227.58	227.58
V	Street Lighting	21.67	21.67
VI	Horticulture	5.25	5.25
VII	Maintenance Charges for 10 Years including Resurfacing of Roads after 1st 5 year & 11nd 5 years of mtc	267.6	267.6
	Total (in Lacs)	879.61	879.61
	Cost of Per Acre (in Lacs)	113.87	113.87

$\text{Cost/Acre} = 879.70 / 5.6475 = \text{Rs } 155.77 \text{ Lakh}$

Checked subject to comments in forwarding letter No. 112/66 Dt. 28/06/2021 and notes attached with the estimate

Additional Chief Engineer (HQ) for Chief Engineer, HSWP Panchkula
 28.6.2021

Executive Engineer HUDA, Division No. VI Gurgaon

Superintending Engineer HSWP, Circle-II, Gurgaon

Addl. Chief Engineer HSWP, Gurgaon

Director Town & Country Planning, Haryana Chandigarh



Sub Work No.1		Description	Amount (Rs.) in lacs
Sub	Head		
1	Head Works		
2	Pumping Machinery		
3	Distribution System		
4	Fire Fighting		
5	Irrigation		
	Say (in Lacs)		
			68.62 75.14
			21.87 29.39
			22.52 24.18
			36.78 40.96
			11.33 13.19
			161.09 182.86

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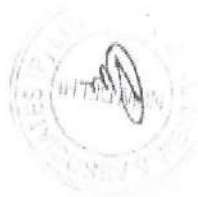
Sub Work No-1
Sub Work No-01
Water Supply Phase II
Head Works

Sl No	DESCRIPTION	Qty	Rate	AMOUNT (In Lacs.)
1	Boring and installing 200 mm i/d tubewell with reverse rotary rig complete with pipe and strainer to depth of about 95 m in all respect 2 Nos. @ Rs. 5,00,000/- each	2	10,00,000	20.00
2	Provision for Rising Main connecting Bore well with water main and by-pass arrangement			
2.1	80 mm dia G.I. Pipe	15	1000	0.15
2.2	100 mm dia G.I. Pipe	85	1200	1.02
3	Providing Boosting arrangement by pumps (HP) (capacity 350 lpm at 95 M head, 2 nos @ Rs. 1,00,000/- each (for Tube Well)	2	1,50,000	3.00
4	HP, capacity 1000 LPM at 90 M head, 3 nos. complete with panel, foundation etc. (For UGT) @ Rs. 1,50,000/- each (For UGT)	3	2,00,000	6.00
5	Provision for carriage of materials and other unforeseen items			
6	Construction of U/G tanks of total cap. 750 KI @ Rs. 2200/- KI (10m ³ + 650)	350	4500	15.75
7	Provision for borewell chamber of size 1.5 x 1.5 x 1.5 m For Housing borewell 2 Nos @ Rs. 15000/- each	2	1,00,000	2.00
TOTAL				
Add 3% contingencies				
TOTAL				
Add 49% Department charges, Price Escalation & other unforeseen Charges.				
TOTAL COST				
Rs.	88.62			

15.14
24.71
50.43
1.47
48.96

Material statement of Borewell Rising Mains

S. No.	Name of line	Length of 80 mm dia. pipe	Length of 100 mm dia pipe
1	Borewell no. 1 to Borewell no. 2	15	
2	Borewell no. 2 to UGT	0	85
Total		15	85



Sub Work No.-1		Sub Work No.-02		Water Supply Phase II	
SI No	DESCRIPTION	Qty	Rate	AMOUNT (in Lacs.)	
1	Providing and installing electricity driven submersible pumping set capable of delivery about 20 KL / Hr of water against a total Head of 95 M complete with motor and other accessories, 2 No @ 2.00,000/-	2	200000	4.00	3.00 Lacs.
2	Provision for diesel engine genset each for standby arrangements for T.W., booster pumps complete with gear head arrangement.	1	550000	5.50	
3	Providing for chlorination plant complete, 1 set @ 50,000/-	1	50000	0.50	10.00
4	Provision for making foundations and erection of Pumping machinery 1 Nos x Rs 70000/-	1	70000	0.70	
5	Provision for pipes, valves and specials inside boosting chamber - 1 Set (L.S.) Rs 55000/-	1	55000	0.55	
6	Provision for electric services connection including electric lifting for tube wells & boosting chamber & cost of transformer etc.	1	215000	2.15	
7	Provision for carriage of material and unforeseen item L.S. Rs. 85000/-	1	85000	0.85	
TOTAL				14.25	
Add 3% contingencies				0.43	
TOTAL				14.68	
Add 49% Department charges, Price Escalation & other unforeseen Charges.				7.19	
TOTAL COST				21.87	



Sub Work No-1		Sub Head No-03		Water Supply Phase II		Distribution system	
SI No	DESCRIPTION	Qty	Rate	AMOUNT	(in Lacs)		
1	Providing, laying, jointing & testing D.I. pipes including cost of excavation complete as per ISI marked	612	12.50	7650	7.65		
	100 mm I/D						
	150 mm I/D	80	1575	12600	12.6		
	200 mm I/D	0					
	Providing, laying, jointing & testing G.I. pipes including cost of excavation complete as per ISI marked						
2	Providing and Fixing sluice valves including cost of brick masonry chamber complete in all respect	160	6.50	1040	1.04		
	65 mm I/D						
	50 mm I/D						
	100 mm I/D						
	150 mm I/D						
3	Providing and Fixing air valves and scour valves including cost of brick masonry chamber complete	8	9000	72000	72		
	50 mm I/D						
	65 mm I/D						
	200 mm I/D						
	150 mm I/D						
4	Providing and Fixing indicating plates for sluice valves	8	6000	48000	48		
	Provision for carriage of material & other foreseen items etc., (L.S.) 1 job including cutting of road and making the same.	15					
	1000						
	Rs.						
	1.00						
TOTAL							
Add 3% contingencies							
TOTAL							
Add 49% Department charges, Price Escalation & other unforeseen Charges.							
TOTAL COST							
	Rs.						
	14.67				15.76		
	0.44				0.47		
	16.11				16.23		
	7.41				7.95		
	22.52				24.18		

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Sub Work No-1

Sub Work No-04

SI No	DESCRIPTION	Qty	Rate	AMOUNT (in Lacs.)
	Water Supply			
	Fire fighting			

1	Providing, laying jointing & testing M.S. pipe lines for rising main including cost of filling, valves, connection etc, complete in all respects.	30	@	1800.00	Rs.	0.54
	200 mm I/D for UGT - Ring Main	1035	@	1575.00	Rs.	16.30
	150 mm I/D for Tanker Inlet	20	@	1250.00	Rs.	0.25
	80 mm I/D for Yard hydrant fire Brigade connection	140	@	1000.00	Rs.	1.40
2	Providing & fixing valve including cost of surface boxes and masonry chambers etc complete in all respects	1	@	2000.00		
	- 200 mm dia	1	@	2000.00		0.20
	- 150 mm dia	6	@	15000.00		0.90
	- 100 mm dia	1	@	12000.00		0.12
3	Providing and fixing fire Hydrant with accessories	23	@	10000.00	Rs.	2.30
4	Providing for carriage of material (L.S.) 1 jobs	1	@	12000.00	Rs.	3.45
5	Providing and fixing Indicating plate	23	@	1000.00	Rs.	23.95
	ADD 3% contingencies				Rs.	0.72
	ADD 49% Department charges, Price Escalation & other unforeseen Charges.				Rs.	24.67
	TOTAL COST				Rs.	40.96

Material Statement of Fire ring - MS - 150mm dia

S. No.	Location	200 mm dia pipe	150 mm dia pipe	100 mm dia pipe	80 mm dia pipe	Fire Hydrant
1	Pump room to fire ring	30	-	-	-	-
2	Ring around the building	-	1015	-	-	-
3	Tanker inlet connection	-	-	20	-	-
4	Fire Brigade 4 way	-	-	-	-	-
5	Yard Hydrants = 23 Nos x 6 Meters	-	20	-	-	-
Total		30	1035	20	140	23

Fire Hydrant System

- 1 Valves 200mm dia
- 2 Valves 150mm dia
- 3 Valves 100mm dia
- 4 Valves 80mm dia
- 5 Fire Hydrants
- 6 Fire Brigade Connections

- 1 No
- 5 Nos.
- 1 No
- 23 Nos
- 23 Nos
- 1 No



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SERVICE DESIGN AND ESTIMATES FOR REVISED BUILDING PLANS FOR TOWERS 6,7,8,9,10,11,12 & 13
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Sub Work No-1

Sub Work No-05

SI No	DESCRIPTION	Qty	Rate	AMOUNT (In Lacs)
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1	Providing, laying, jointing and testing uPVC pipe line conforming to IS 4985 including cost of excavation etc., complete in all respects.			
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20 mm O/D for Garden Hydrants				
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75 mm O/D from STP to Ring Main	20	@	200	350
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110 mm O/D from STP to Ring Main	30	@	800	600
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Providing and fixing Irrigation hydrant valve complete in all respect	10	@	3500	0.35
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Provision for carriage of material & other foreseen items etc. (L.S.) 1 jobs				0.50
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Providing & fixing ball valve 20 mm	10	@	1200	0.12
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chamber				
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- 65 mm dia				
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- 100 mm dia				
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Providing and fixing Irrigation pump 2 nos.	1	@	12000	0.12
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HP, 300 LPM @ 35 Mtr. Head complete with foundation & control panel etc	2	@	100000	2.00
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TOTAL				7.38
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Add 3% contingencies				0.22
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TOTAL				7.60
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Add 49% Department charges, Price Escalation & other unforeseen Charges.				3.72
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TOTAL COST				11.33
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Rs.				
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16

SERVICE DESIGN AND ESTIMATES FOR REVISED BUILDING PLANS FOR TOWERS 6, 7, 8, 9, 10, 11, 12 & 13
OF ASHIANA ANMOL GROUP HOUSING COLONY BEING DEVELOPED ON 13.3375 ACRES LAND,
SECTOR - 33, SOHNA (LICENCE NO. 20 OF 2014 DATED 11.06.2014) DISTRICT-GURGAON (HARYANA)

Sub Work No-II

SI No	DESCRIPTION	Qty	Rate	AMOUNT (in Lacs)
1	Providing, jointing, cutting and testing S.W pipe class 'A' and lowering into trenches including cost of excavation, bed concrete, cost of manhole etc, complete in all respects.			
	200 mm I/D Avg depth upto 0 - 4.00 M (S.W. Pipe)	0	1250/-	0.00
	250 mm I/D Avg depth upto 0 - 4.00 M (S.W. Pipe)	0	1500/-	0.00
	300 mm I/D Avg depth upto 0 - 4.00 M (S.W. Pipe)	0	1400.00	0.00
2	Provision for lighting and watching L.S	590	1800/-	10.62
3	Provision for timbering and shuttering L.S			8.44
4	Provision of 150 mm dia line form STP to HUDA main by pumping (Already taken in phase I)	10		1.00
5	Providing boosting arrangement by 3 nos pump for flushing water supply 10 HP capacity 300 L.P.M, 90 Meter Head	3		3.00
6	Provision for carriage of material (L.S.)	@	100000.00	2.00
7	Provision of cutting road & making it good as same in original condition - 1 job			1.00
	TOTAL			59.20
	Add 3% contingencies			1.78
	TOTAL			60.98
	Add 49% Department charges, price escalation, other for unforeseen charges.			2.31
	TOTAL COST			76.98
	escation, other for unforeseen charges.			118.14
	TOTAL			195.12

Material statement of Sewerage System - As per drawing sheet

S. No.	Name of Pipe Line	Length of Pipe in M	300 mm	250 mm	200 mm
1	S1-S2	47			
2	S2-S3	90			
3	S3-S4	52			
4	S4-S5	40			
5	S5-S6	30			
6	S6-S7	10			
7	S7-S8	8			
8	S8-S9	8			
9	S9-S10	8			
10	S10-S11	62			
11	S11-Continue to Phase - 01	20			
12	S12-S13	20			
13	S13-S14	53			
14	S14-S15	120			
15	S15-Continue to Phase - 01	20			
	Total	590	0	0	0



S. No.	DESCRIPTION	Qty	Rate	AMOUNT (in Lacs)
1	Providing, lowering, laying and jointing R.C.C NP-2 pipes and specials into trenches including manholes, chambers etc, excavation, back filling and disposal of surplus earth complete in all respects			
2	400 mm I/D Avg. depth upto 2.0 M.	657	2500/-	16.43
3	Provision for Road Gullies & pipe connection LS			13.80
4	Provision for lighting and watching			1.00
5	Provision for timbering and shoring L.S.			0.80
6	Provision for carriage of material & other foreseen items etc. L.S.			1.00
7	Provision for Rain water harvesting arrangements for 6 Nos. R.W.H. @ 2.5 Lac / R.W.H.	6	200000	12.00
	Provision for temporary connection with HUDA			1.00
	TOTAL			30.00
	Add 3% contingencies			0.92
	TOTAL			31.51
	Add 49% Department charges, price escalation, other for unforeseen			15.44
	TOTAL			46.96

1002.00

37.93
1.12
38.35
18.79
57.14

Say Rs 57.14 Lakh



SERVICE DESIGN AND ESTIMATES FOR REVISED BUILDING PLANS FOR TOWERS
6,7,8,9,10,11,12 & 13 OF ASHIANA ANMOL GROUP HOUSING COLONY BEING DEVELOPED ON
13.3375 ACRES LAND, SECTOR - 33, SOHNA (LICENCE NO. 20 OF 2014 DATED 11.06.2014)
DISTRICT-GURGAON (HARYANA)

19

SUB WORK NO. - IV				
Sl No	DESCRIPTION	Qty	Rate	AMOUNT (In Lacs)
1	Provision for leveling - earth filling / cutting as per site conditions. (In Acres)	13.3375 Acres	125000	1667.50
2	Provision for Granular sub base 300mm, 250 mm thick stone aggregate, 50 mm thick B.M., 25 mm thick pre-mix carpet with seal coat	5.6475 @ 125000	125000	705.94
3	Provision of Paved path of C.C. 1:2:4	9750 @ 1400	1400	1365.00
4	Provision for Kerbs & channels of CC 1:2:4	2200 @ 750	750	1650.00
5	Provision for making approach to each block for C.C. pavements L.S.	2200 @ 600	600	1320.00
6	Provision of guide maps at selected place (L.S.)			1.00
7	Provision for Traffic Lights arrangement - L.S.			0.80
8	Provision for Demarcating Durgies - L.S.			1.00
9	Provision for Plot Indicator - L.S.			0.50
10	Provision for Parking Arrangement L.S.			1.00
11	Provision of carriage of material and unforeseen items - L.S.			1.00
TOTAL				142.61
Add 3% contingencies				4.28
TOTAL				146.89
Add 49% Department charges, price escalation, other for unforeseen				71.97
TOTAL				218.86
Road Work				227.58



SERVICE DESIGN AND ESTIMATES FOR REVISED BUILDING PLANS FOR TOWERS
6,7,8,9,10,11,12 & 13 OF ASHIANA ANMOL GROUP HOUSING COLONY BEING DEVELOPED ON
13.3375 ACRES LAND, SECTOR - 33, SOHNA (LICENCE NO. 20 OF 2014 DATED 11.06.2014)
DISTRICT-GURGAON (HARYANA)

Sub Work No-V

SI No	DESCRIPTION	Qty	Rate	AMOUNT (in Lacs)
1	Providing street lighting on roads as per standard specifications on HVPN Area = 5.6475 Acre	13.3375 Acres (Qty. I)	5.6475 @ 250000	14.12
	TOTAL			14.12
	Add 3% contingencies			0.42
	TOTAL			14.54
	Add 49% Department charges, price escalation, other for unforeseen			7.13
	TOTAL			21.67



SERVICE DESIGN AND ESTIMATES FOR REVISED BUILDING PLANS FOR TOWERS
6,7,8,9,10,11,12 & 13 OF ASHIANA ANMOL GROUP HOUSING COLONY BEING DEVELOPED ON
13.3375 ACRES LAND, SECTOR - 33, SOHNA (LICENCE NO. 20 OF 2014 DATED 11.06.2014)
DISTRICT-GURGAON (HARYANA)

21

Sub Work No-V1
Plantation & Road
side trees

SI No	DESCRIPTION	Qty	Rate	AMOUNT (in Lacs)
1	Development of Lawn Area :- a) Trenching the ordinary soil upto depth of 60 cm. including removal and packing of serviceable material and disposing at a lead of 50 M. and making up the trenched area to proper level by filling with earth mixed with manure before and after flooding trench with water including cost of imported earth and manure. b) Rough dressing of trenched area c) Grassing with "doob grass" including watering and maintenance of lawns free from weeds and fit for moving in rows 7.50 cm. in either direction including for hedges and grill and barred wire fencing around park and green belts (As per HUDA norms) Area = 5.6475 ^{5.6475} Acre 3592.84 ^{3592.84} sq. ft. 0.89 ^{0.89} Acre @ 150000 Rs			1.34 8.47
2	Providing & Planting of trees with tree guards on roads at 6 m intervals Total Road Length (M) Trees @ 12 M. c/c Say (2x 92) = 184 160 Or Say Cost of One Tree - Excavation (Rs.) 60/- Manure (Rs.) 90/- Tree Plants (Rs.) 150/- Tree Guards (Rs.) 1000/- Total Cost (each) 1300 Cost of Total trees	160 @ 1300		2.08
	TOTAL			10.55 3.42
	Add 3% contingencies			0.32 0.10
	TOTAL			10.87 3.52
	Add 49% Department charges, price escalation, other for unforeseen			5.33 1.73
	TOTAL			16.49 5.25

By 6.5.25 Later



SERVICE DESIGN AND ESTIMATES FOR REVISED BUILDING PLANS FOR TOWERS
6,7,8,9,10,11,12 & 13 OF ASHIANA ANMOL GROUP HOUSING COLONY BEING DEVELOPED ON
13.3375 ACRES LAND, SECTOR - 33, SOHNA (LICENCE NO. 20 OF 2014 DATED 11.06.2014)
DISTRICT-GURGAON (HARYANA)

22

SUB WORK NO. VII:		MTC. CHARGES AND RESURFACING OF ROADS.			
SI No	DESCRIPTION	Qty	Rate	AMOUNT (in Lacs)	
1	Provision for maintenance charges for water supply, sewerage, storm water, drainage, roads, street light, Hort, etc. complete including operation & establishment charges as per HUDA norms after completion	13.3375 Acre	7.69 (H.I.)	49.136	
2	Area = 5.6475 Acre Provision for resurfacing of roads after first five years of maintenance i.e. 100mm thick B.M. with 25mm thick premix carpet with seal coat with mechanical paver. (Sqm)	5.6475	100000	22.59	
3	Provision for resurfacing of roads after 10 years of Mtc. i.e. 25mm thick premix carpet with seal coat with mechanical paver. (Sqm)	9750	60/-	58.50	
	TOTAL			73.13	
	Add 3% contingencies			100.59	
	TOTAL			3.02	
	Add 49% Department charges, price escalation, other for unforeseen			103.61	
	TOTAL			50.77	
				154.38	

Say Rs 267.02 Lacs.



173.99
5.22
179.21
87.81
267.02

SERVICE DESIGN AND ESTIMATES FOR REVISED BUILDING PLANS FOR TOWERS 6, 7, 8, 9, 10, 11, 12 & 13 OF
ASHIANA ANMOL GROUP HOUSING COLONY BEING DEVELOPED ON 13.3375 ACRES LAND, SECTOR - 33,
SOHNA (LICENCE NO. 20 OF 2014 DATED 11.06.2014) DISTRICT-GURGAON (HARYANA)

S. No.	Description	200 mm	150 mm	100 mm	80 mm	65 mm	50 mm
(A)	Domestic						
1	D1 - D2			38			
2	D2 - D3			25			
3	D3 - D4		20				
4	D4 - D5			32			
5	D5 - D6			36			
6	D6 - D7			25			
7	D7 - D8			35			
9	D4 - UG1		20				
10	D3 - D9			40			
11	D9 - D10			40			
12	D10 - D11			36			
14	To fill O.H.T. riser to building shafts					8 Nos. x 20 Mtr. = 160	
	TOTAL	0	40	306	0	160	
(A)	Flushing						
1	F1 - F2			38			
2	F2 - F3			25			
3	F3 - F4		20				
4	F4 - F5			32			
5	F5 - F6			36			
6	F6 - F7			25			
7	F7 - F8			35			
9	STP - F1		20				
10	F3 - F9			40			
11	F9 - F10			40			
12	F10 - F11			36			
13	Risers to building shafts (AV) to fill O.H.T.					8 Nos. x 20 Mtr. = 160	
	TOTAL	0	40	306	0	160	
	GRAND TOTAL	0	80	612	0	160	160



**SERVICE DESIGN AND ESTIMATES FOR REVISED BUILDING PLANS FOR TOWERS 6,7,8,9,10,11,12 & 13 OF ASHIANA ANMOL GROUP
HOUSING COLONY BEING DEVELOPED ON 13.3375 ACRES LAND, SECTOR - 33, SOHNA (LICENCE NO. 20 OF 2014 DATED 11.06.2014)
DISTRICT-GURGAON (HARYANA)**

(Hydraulic Design Domestic)

Sl No	Rat Office	Length in Meter	Population	water requirement as per HUDA 8012.5 LPO	Average Daily Water Demand (lpm)	Peak Demand @ 3 time of A.M/D	Design of Pipe		Loss of Head in 1000 M (5 m Per 1000 m)	Level at Start		
							Size of pipe (dia)	Velocity		HL (Mts)	GL (Mts)	TH (Mts)
1	D-01	38	500	172.50	63750.00	14757	100	2.40	0.19	55.81	0.00	55.80
2	D-02	15	150	172.50	63750.00	20550	100	2.40	0.19	55.83	0.00	55.80
3	D-03	20	500	172.50	114750.00	28850	100	2.40	0.19	55.90	0.00	55.80
4	D-04	32	1100	172.50	140250.00	32465	100	2.40	0.18	55.84	0.00	55.80
5	D-05	15	1250	172.50	159375.00	39890	100	2.40	0.17	55.87	0.00	55.80
6	D-06	19	1400	172.50	179500.00	41910	100	2.40	0.16	55.89	0.00	55.80
7	D-07	35	1550	172.50	197625.00	45747	100	2.40	0.15	55.83	0.00	55.80
8	D-08	20	1700	172.50	218750.00	50774	100	2.40	0.14	55.80	0.00	55.80
9	D-09	40	1850	172.50	238500.00	53128	100	2.40	0.13	55.80	0.00	55.80
10	D-10	40	1850	172.50	238500.00	53128	100	2.40	0.12	55.80	0.00	55.80
11	D-11	35	1470	172.50	208425.00	59791	100	2.40	0.18	55.82	0.00	55.80
12	TOTAL	357	300	172.50	5175	6012	55	0.75	0.68	55.20	0.00	55.00

Ground level = 0.0
UGT Bad level = 5.0 Mtr Add
Building head
G+1 = 14.00 = 45 mts
Add suction head = 3 mts
Add Delivery head = 5 mts
Add positive head = 3 mts
Add friction losses = 4 mtr
Head level = 55.0 mts



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PROPOSED ASHIANA ANMO GROUP HOUSING FOR UNIVERSE HEIGHTS (INDIA) PVT. LTD. IN SECTOR - 33, PHASE-II, (ON 5.6475 ACRES) AT VILLAGE DHUNEJA, SOHNA ROAD, SOHNA, GURGAON (HARYANA)

(Hydraulic Design Flushing)

Sl. No.	Ref of line	Length in Meter	Population	water requirement as per Huds (8/12.5 L LPD)	Average Daily Water Demand (lpm)	Peak Demand @ 3 time of day	Design of Pipe			Level at Start		
							Size of pipe (dia)	Velocity	Loss of Head in 1000 M (5 m)	HL (Mts)	GL (Mts)	TH (Mts)
		m			KLD	Cusecs	mm	m/sec	(m/sec)	Mtr.		Mtr.
1	2-1-2	4	600	172.50	22,500.00	5.205	100	2.40	0.15	55.87	0.00	55.87
2	2-1-3	15	700	172.50	31,500.00	7.292	100	2.40	0.125	55.88	0.00	55.88
3	2-1-4	21	800	172.50	40,500.00	9.375	100	2.40	0.1	55.90	0.00	55.90
4	2-4-5	12	1100	172.50	49,500.00	11.458	100	2.40	0.16	55.94	0.00	55.94
5	2-5-7	8	1200	172.50	56,250.00	13.521	100	2.40	0.175	55.97	0.00	55.97
6	2-6-8	10	1400	172.50	63,000.00	14.583	100	2.40	0.175	55.98	0.00	55.98
7	2-7-9	12	1500	172.50	69,750.00	16.146	100	2.40	0.175	55.99	0.00	55.99
8	2-8-10	12	1700	172.50	78,500.00	17.108	100	2.40	0.1	55.99	0.00	55.99
9	2-9-11	45	1800	172.50	81,000.00	18.750	100	2.40	0.2	56.00	0.00	56.00
10	2-10-12	45	1845	172.50	82,800.00	19.187	100	2.40	0.2	56.00	0.00	56.00
11	2-11-13	25	1870	172.50	84,150.00	19.673	100	2.40	0.19	56.02	0.00	56.02
12	2-12-14	60	3000	172.50	51,750	0.000	80	0.75	0.8	55.90	0.00	55.90

Remarks

Ground level = 0.0
 Building head
 G+14 = 14.00 = 45 mts
 Add suction head = 3 mts
 Add Delivery head = 5 mts
 Add positive head = 3 mts
 Add friction losses = 4 mtr
 Head level = 65.0 mts



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SERVICE DESIGN AND ESTIMATES FOR REVISED BUILDING PLANS FOR TOWERS 6,7,8,9,10,11,12 & 13 OF ASHIANA ANMOL GROUP HOUSING COLONY BEING DEVELOPED ON 13.3375 ACRES LAND, SECTOR - 33, SOHNA (LICENCE NO. 20 OF 2014 DATED 11.06.2014) DISTRICT-GURGAON (HARYANA)

(Hydraulic Design Sewerage Scheme)

Sl. No.	Name of Lane	Length in Meter	Population	water requirement as per Huda @172.5 L	Average Daily Water Demand	Average Discharge 80% of Domestic + 20% of flushing	Sub Soil Infiltration @ 10% of AV/WD	Peak Discharge @ 3 Times of AV Discharge including Sub Soil infiltration	Design of Pipe		Gradient	Drop	Level at Start		Level at End
									Size of pipe (dia)	Capacity in cusec	Velocity		G.L.	I.L.	
1	S1-S2	47	500	172.50	86.25	73.31	8.63	0.053	300	0.200	0.75	1.250	Mtr.	Mtr.	G.L.(Mtr) I.L.(Mtr)
2	S2-S3	90	1000	172.50	120.75	102.64	12.08	0.074	300	0.200	0.75	1.250	0.36	0.00	-1.09
3	S3-S4	52	900	172.50	155.25	131.96	15.53	0.085	300	0.200	0.75	1.250	0.21	0.00	-1.45
4	S4-S5	40	1100	172.50	189.75	161.29	18.98	0.116	300	0.200	0.75	1.250	0.16	0.00	-1.66
5	S5-S6	30	1250	172.50	215.63	183.26	21.56	0.132	300	0.200	0.75	1.250	0.12	0.00	-1.82
6	S6-S7	10	1400	172.50	241.50	205.28	24.15	0.148	300	0.200	0.75	1.250	0.04	0.00	-1.94
7	S7-S8	8	1550	172.50	267.35	227.27	26.74	0.164	300	0.200	0.75	1.250	0.03	0.00	-1.98
8	S8-S9	8	1700	172.50	293.25	249.26	29.33	0.180	300	0.200	0.75	1.250	0.03	0.00	-2.01
9	S9-S10	62	1800	172.50	310.50	263.93	31.05	0.190	300	0.200	0.75	1.250	0.25	0.00	-2.04
10	S10-S11	20	1640	172.50	312.40	269.75	31.74	0.195	300	0.200	0.75	1.250	0.08	0.00	-2.29
11	S11-Continue to Phase - 01	20	1870	172.50	322.58	274.15	32.26	0.198	300	0.200	0.75	1.250	0.08	0.00	-2.37
12	S12-S13	57	300	172.50	51.75	45.28	5.18	0.033	300	0.200	0.75	1.250	0.21	0.00	-0.50
13	S13-S14	120	800	172.50	103.50	90.55	10.35	0.095	300	0.200	0.75	1.250	0.48	0.00	-1.11
14	S14-S15	20	800	172.50	138.00	120.75	13.80	0.087	300	0.200	0.75	1.250	0.08	0.00	-1.59
15	S15-Continue to Phase - 01	10	950	172.50	163.88	143.39	16.39	0.103	300	0.200	0.75	1.250	0.04	0.00	-1.67

Note - 1) The man holes shall be constructed as per HUDA/ N.B.C Norms
2) All the levels have been taken with reference to level = 0.00



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SERVICE DESIGN AND ESTIMATES FOR REVISED BUILDING PLANS FOR TOWERS
6, 7, 8, 9, 10, 11, 12 & 13 OF ASHIANA ANMOL GROUP HOUSING COLONY BEING DEVELOPED
ON 13.3375 ACRES LAND, SECTOR - 33, SOHNA (LICENCE NO. 20 OF 2014 DATED
11.06.2014) DISTRICT-GURGAON (HARYANA)

STORM WATER DRAIN

S. No	Name of Drain	400mm dia RCC pipe
-------	---------------	-----------------------

Phase - 2		
1	D1-D2	55
2	D2-RWH-01	15
3	Overflow pipe	2
4	D3-D4	50
5	D4-D5	16
6	D5-RWH-02	30
7	Overflow pipe	2
8	D6-D7	40
9	D7-D8	57
10	D8-RWH-03	10
11	Overflow pipe	2
12	D9-D10	25
13	D10-D11	11
14	D11-D12	6
15	D12-D13	9
16	D13-RWH-04	15
17	Overflow pipe	2
18	D14-D15	47
19	D15-D16	20
20	D16-D17 (Continue to Phase -01)	27
21	D18-D19	65
22	D19-D20	10
23	D20-RWH-05	11
24	Overflow pipe	2
25	D21-D22	101
26	D22-RWH-06	15
27	Overflow pipe	2
28	D23- (Continue to Phase -01)	10
Total		657



**SERVICE DESIGN AND ESTIMATES FOR REVISED BUILDING PLANS FOR TOWERS 6,7,8,9,10,11,12 & 13 OF ASHIANA ANMOL GROUP HOUSING COLONY
BEING DEVELOPED ON 13.3375 ACRES LAND, SECTOR - 33, SOHNA (LICENCE NO. 20 OF 2014 DATED 11.06.2014) DISTRICT-GURGAON (HARYANA)**

Hydraulic Design Chart

Storm Water Drain

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

Sl. No.	Name of Line	Length in Meter	Catchment Area in sqmt		Total Area (Sqmt)	Cusec (l/cusec)	dia of pipe (mm)	Velocity (m/sec)	Design Capacity of Drain (Cusec)	Gradient (1/100)	Drop (mtr.)		Level at Start		Level at End	
			Self	Additional							G.L. (mtr.)	L.L. (mtr.)	Depth (mtr.)	G.L. (mtr.)	L.L. (mtr.)	Depth (mtr.)
Rain Water Harvesting - 1																
1	Drain-1	25	1500	0	1500	0.371	400	0.75	2.50	1.550	0.10	0.00	-0.90	0.500	0.00	-1.00
2	Drain-2	15	1000	1500	2500	0.616	400	0.75	3.50	1.550	0.03	0.00	-1.00	1.000	0.00	-1.03
3	Overflow pipe	2	800	2500	3300	0.815	400	0.75	3.50	1.250	0.00	0.00	-1.00	1.027	0.00	-1.03
Rain Water Harvesting - 2																
4	Drain-4	50	2000	0	2000	0.454	400	0.75	3.50	1.550	0.03	0.00	-0.90	0.500	0.00	-0.93
5	Drain-5	15	1200	2000	3200	0.781	400	0.75	3.50	1.550	0.03	0.00	-0.90	0.500	0.00	-1.02
6	Drain-6	30	800	3200	4000	0.934	400	0.75	3.50	1.550	0.03	0.00	-1.02	1.020	0.00	-1.07
7	Overflow pipe	2	300	3800	4100	1.013	400	0.75	3.50	1.550	0.00	0.00	-1.07	1.075	0.00	-1.08
Rain Water Harvesting - 3																
8	Drain-7	40	1200	0	1200	0.297	400	0.75	3.50	1.550	0.07	0.00	-0.90	0.500	0.00	-0.97
9	Drain-8	37	500	1200	1700	0.400	400	0.75	3.50	1.550	0.10	0.00	-0.97	0.570	0.00	-1.08
10	Drain-9	10	400	1700	2100	0.519	400	0.75	3.50	1.550	0.02	0.00	-1.00	1.016	0.00	-1.09
11	Overflow pipe	2	200	2100	2300	0.558	400	0.75	3.50	1.550	0.00	0.00	-1.03	1.055	0.00	-1.10



Hydraulic Design Chart

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

12	0.4-0.8	47	600	0	600	0.148	410	0.18	580	1.590	0.09	0.06	-0.50	0.900	0.00	-0.98	0.860
7	0.5-0.9	10	800	0	800	0.222	490	0.17	720	1.990	0.09	0.06	-0.99	0.995	0.00	-1.02	1.020
18	0.9-0.17	2*	1000	1000	0.347	630	0.78	7.60	1.990	0.05	0.00	-1.02	1.020	0.00	-1.07	1.27*	
	0.999-0.01																

	10%	20%	0.24"	4.20"	0.75"	0.50"	1.50"	0.10"	0.00"	-0.50"	0.00"	0.00"	-1.00"	1.00"
23	021-022		0	2000	0.24"	4.20"	0.75"	0.50"	1.50"	0.10"	0.00"	-0.50"	0.00"	-1.00"
24	002-004-008	15	1200	3000	4000	1.00"	4.00	0.75"	0.50"	0.00"	-1.00"	1.00"	0.00"	-1.11"
25	006-007-008	2	500	4200	4500	1.11"	4.00	0.75"	0.50"	0.00"	-1.11"	0.00"	-0.71"	-1.11"
26	023-000-008	10	400	4750	5150	1.22"	4.00	0.75"	0.50"	0.00"	-1.11"	0.00"	-1.13"	1.13"

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(30)

SERVICE DESIGN AND ESTIMATES FOR REVISED BUILDING PLANS FOR TOWERS
6,7,8,9,10,11,12 & 13 OF ASHIANA ANMOL GROUP HOUSING COLONY BEING DEVELOPED ON
13.3375 ACRES LAND, SECTOR - 33, SOHNA (LICENCE NO. 20 OF 2014 DATED 11.06.2014)
DISTRICT-GURGAON (HARYANA)

Road Work

S. No.	Name of Road	A	B	C	B x C
		Length of Road (in	Mettled Width		Area in Sqm.
1	Road No.1-2	96	6		576.00
2	Road No. 2-3	125	6		750.00
3	Road No.3-4	50	6		300.00
4	Road No.4-5	90	6		540.00
5	Road No.5-6	30	6		180.00
6	Road No.6-7	125	6		750.00
7	Road No.8-9	85	6		510.00
8	Road No.9-10	80	6		480.00
9	Road No.8-11	150	6		900.00
10	Road No.5-9	40	6		240.00
Total		871			5226.00
Add 10 % for curves					522.60
Total					5,748.60
Add for surface plaza/ parking					4,000.00
Total					9,748.60
Say					9,750.00
Total Length of road		871			
Add 10% curves		87.1			
Total Length		958.1			
Say		960			
			Mtrs.		

No. of Car Parking (open) =

Area = $5.0 \times 176 = 872$

2.50 x 742 =

18550 Sqmts

9275

742 Nos.

2200 Sqmts.

Pave Path on single side of Road =

