

SERVICE ESTIMATES & PLANS
FOR
EDGE TOWER
RAMPRASTHA CITY
LIC. NO. 33 OF 08 DT. 19.02.2008
(60.511 ACRES)
SECTOR-37 D, GURGAON, HARYANA

60.511 Acres - 3.50 Acre = 57.011 Acres
(For future expansion)

Client

M/s S.A INFRATECH PVT. LTD.
C-10, "C" BLOCK, VASANT VIHAR MARKET
NEW DELHI

Architects:

N+U Design Studio

Architects, Project Management, Urban Planning, Inter Design

A-243, Okhla Industrial Area, Ph-1, New Delhi-110020

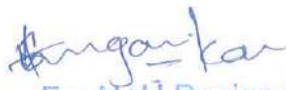
Email: info@nplusu.in, nuparch@nupc.net

Website: www.nplusu.in

Tel : +91-11-26816414/15, 26816014

Fax: +91-11-26818013

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020



For N+U Design Studio
Ketan Hinganikar
Architect
CA/2006/37536

PROJECT REPORT / ESTIMATES FOR PROVIDING INTERNAL DEVELOPMENT WORKS FOR EDGE TOWER RAMPRASTHA CITY IN SECTOR -37 D, GURGAON, (HARYANA)

Gurgaon town of Haryana is situated on Delhi – Jaipur National Highway No. 8 at a distance of 30 Km. From Delhi, Gurgaon town falls in the National Capital Region. The town has fast developing tendency and potential. In order to relieve the growing pressure of population in the national capital of Delhi it has been decided by the Haryana Govt. To establish various residential sectors along with infrastructure facilities in Gurgaon. It is proposed to develop a residential colony in an area of 60.511 Acres in sector 37-D. This colony is being developed by M/s SA Infratech Pvt. Ltd. and OTHERS LIC. NO - 33 OF 2008

1. WATER SUPPLY SYSTEM

(i) SOURCE

The licenced area falls in Sector -37 D of Development Plan of Gurgaon town issued by Govt. of Haryana. The ultimate source of water supply will be from HUDA water supply system for which EDC have been /are being paid to HUDA. As a temporary measure till we get water from HUDA we may drill some tube wells as per requirement subject to approval of CGWA. Source of water supply in this area is tubewells as the underground water is sweet and fit for human consumption; moreover and the water is available at reasonable depth. The average yield of tubewell with 60-80' strainer will be about 15000 lph per hour. The number of tubewells required for the above area has been worked out to 10 Nos and the tubewells will be drilled in tune with growth of population. The ultimate requirement of tubewells includes provision of 10% standby.

(ii) DESIGN

The water supply system has been designed as per Hazen William Formula. The necessary distribution system has been designed & design statement is attached with the estimate. The Scheme has been designed considering 5 persons per general flat and 5 persons EWS & 2 persons service personnel respectively. The rate of water supply per head per day has been taken as 172.5 litres.

Water from HUDA water main / Tubewell shall be collected in 2 nos underground water tanks as per location as shown on the drawing. This water will initially be collected in Fire Fighting tank and then will overflow in to domestic water tank. This water shall be transferred in to overhead tanks on each tower through boosting pumps. Water supply mains from pump house are running along basement ceiling.

(iii) PUMPING EQUIPMENT

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

(iv) FIRE FIGHTING SYSTEM

The design & planning of fire fighting system has been done keeping in view the NBC & consultation with local Fire Officer.

2 Nos static fire water storage tank (Cap. 250 & 150 KL each) (have been provided in edge tower & atrium) Electric fire pumps, Diesel engine driven fire pumps and jockey pumps are proposed to be installed as per design.

2. SEWERAGE SCHEME

This scheme is designed for sewer connecting to the proposed sewage treatment plant. The sewerage system has been marked on the respective plans.


Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

Page 1




For M/s. Ketan Bhatnagar
Ketan Bhatnagar
Architect
CA/2006/37536

The sewer lines have been designed for 3 times average DWF in relation to the water supply demand assuming that 80% for the domestic water supply shall find its way into the proposed sewer SW pipe sewers have been proposed designed to run half full. The sewers have been designed on 0.8 m/sec. velocity i.e. Self-cleansing velocity. Necessary provisions for laying of SW pipes, construction of manholes & erection of vent shafts etc. has been made in this estimate. Necessary design statement for entire sewerage system has been prepared as per Manning's Formula and is attached with the estimate.

3. STORM WATER DRAINAGE

The storm water drain has been designed to carry 6.25 mm rain fall as per HUDA guidelines. Since the SSWL at this project site is very high, hence construction of Rain water Harvesting Pits is not feasible at present. It is proposed that RWH Pits will be provided only after SSWL is more than 10M BGL. RCC NP3 pipes drain with minimum 400 mm dia. is proposed in this area. Necessary design statement for entire sewerage system has been prepared and is attached with the estimate.

4. ROADS

Roads have been proposed all around the area and the estimate has been prepared as per revised specifications approved by HUDA.

5. STREET LIGHTING

Provision for street lighting In the GH area has been made as per guidelines of HUDA.

6. HORTICULTURE

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

7. SPECIFICATIONS

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

8. RATES

The estimates has been prepared on the rates as per recently approved estimates.

9. COST

The total cost of internal development in this Project including all the services works out to Rs. ~~2754.53~~ ^{3820.10} lacs which includes 3% contingency and PE charges and ~~14%~~ ^{14.9%} administrative charges also.

The cost per gross acre for this phase works out to Rs. ~~45.52~~ ^{46.59} lacs/acre which covers the provision of services like water supply, sewerage, storm water drainage, roads, street lighting and plantations including maintenance thereof.



M/s S.A INFRATECH PVT. LTD.

Authorised Signatory


Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

Page 2


For N+U Design Studio
Ketan Hinganikar
Architect
CA/2006/37536

EDGE TOWER RAMPRASTHA CITY AT SECTOR 37-D, GURGAON					
DESIGN CALCULATION					
1	Daily Domestic Water Requirement				
Nos. of Blocks					
Population Calculation		No. of Units	No. of Persons Per Unit	Total	
Apartment -Population @ 5 person per unit		2886 ✓	5	14430	Person
EWS-Population @ 5 person per unit		528 ✓	5	2640	Person
Service Personnel-Population @ 2 person per unit		292 ✓	2	584	Person
Total No. of Population				17654	Person.
1.1	Daily Water Requirement				
		No. of Persons	Rate @172.5 LPCD	Total in LPD	
1.2	Water Requirement For Appartments	14430 ✓	172.5	2489175	Ltrs
			LPCD		
1.3	Water Requirement For EWS	2640 ✓	172.5	455400	Ltrs
			LPCD		
1.4	Water Requirement For SERVICE PERSONNEL	584 ✓	172.5	100740	Ltrs
			LPCD		
				3045315	Ltrs (i) ✓
1.5	Water Requirement For Nursery School @ 10,000 Litre/Day- For 3 Nos. School		sqm	Total (Litres)	
			1309.994	10000	✓ L
			816.075	10000	✓ L
			812.35	10000	✓ L
		Total		30000	Ltrs. L
1.6	Water Requirement For Primary School @ 50,000 Litre/Day- For 3 Nos. School		sqm	Total (Litres)	
			4050.879	50000	L
			4050.46	50000	L
			4049.32	50000	L
		Total		150000	Ltrs L
1.7	Water Requirement For Crche @ 10,000Litre/Day- For 1 No. Creche		sqm	Total (Litres)	
			812.628	10000	L
		Total		10000	Ltrs L

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

Shil

Ketan Hingorani
For N+U Design Studio
Ketan Hingorani
Architect
CA/2006/375

1.8	Water Requirement For Religious Building @ 25,000 Litre/Day		sqm	Total (Litres)		
			809.4	25000	✓	
		Total		25000	Ltr ✓	
1.9	Water Requirement For Dispensary @ 50,000 Litre/Day- For 1 No. Dispansary		sqm	Total (Litres)		
			5060.984	50000	✓	✓
		Total		50000	Ltr ✓	
1.1	Water Requirement For High School @ 1,00,000 Litre/Day		sqm	Total (Litres)		
			20432.539	100000	✓	
		Total		100000	Ltr ✓	
1.12	Water Requirement For Community building @ 50000 Litre/Day		sqm	Total (Litres)		
			8099.064	50000	✓	✓
		Total		50000	✓	✓
				415000		(ii)
	Total Daily Water Requirement ((i) + (ii))		TOTAL (i+ii)	3460315	✓	(iii) Ltr
				0		
	Domestic Water requirement @ 65 % of (iii)			2249205	✓	LPD
		Say		2249	✓	KLD
	Flushing Water requirement @ 35 % of (iii)			1211110		LPD
		Say		1211	✓	KLD (A)
2	Capacity Of STP					
	80% of Domestic Water requirement			1799	✓	(a) KLD
	100% of Flushing Water requirement			1211	✓	(b) KLD
	Total of (a) + (b)			3010		(c) KLD
	Provide Capacity of STP =	=	Say	3010	✓	KLD
	Total treated water available(@ 90% of Total water (= 3010 kLD) available from STP)	90%	3010	2709	✓	KLD
2.1	Water Usage From STP					
a	Area Under Parks = 36060.908sqm = 8.919 Acres	8.919	25000	222975	✓	LPD (i)
		Acres	Litres/Acre/Day			
b	Area Under Roads = 41161.78 = 10.172 Acres	10.172	5000	50860	✓	LPD (ii)

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

Shil

Hinganikar
For N+U Design Studio
Ketan Hinganikar
Architect
CA/2006/37536

		Acres	Litres/Acre/ Day Litres		
c	Flushing Water Requirement			12111 10	LPD (iii)
d	Total Water Usage From STP = (i) + (ii) + (iii)			1484945	LPD
				1484.9453	KLD
e	Total Treated water Requirement From STP		SAY	1485	KLD
I	Tubewell				
	Assuming working hours of tubewells			16	hours
	Assuming discharge/hour of each tubewell			15	KL/hours
	Total fresh water demand			2249	KLD
	No. of tubewells required	2249	/16/15	9.372	Nos.
	Add 10% standby			0.937	Nos.
			Total	10.309	Nos.
			SAY	10	Nos.
	It is proposed to provide (i.e. 9 Nos.) to cater the initial present requirement ⁵⁰⁷ i.e. 5 Nos after approval from CGWA.				
II	Pumping machinery for tubewell				
	Gross working head		=	65	m
	Average fall in SL		=	5	m
	Depression head		=	5	m
	Friction loss in main		=	5	m
	Total			80	m
	BHP = 15000x80x1/60x60x75x0.6			7.407	BHP
	With 60% efficiency		SAY	7.5	BHP
	UNDER GROUND TANKS				
	As/ NBC cap. Of under ground tank shall be 66% of Daily fresh water requirement(2249 kLd)= 2249 kL * 66%= 1484kL Provide kL				1484
III	Underground Tank (No. 1) Near Edge Tower for Whole complex (MAIN TANK/CENTRAL TANK)				
	Daily fresh water requirement for domestic use			2249	KLD
	66% storage			1484	KL
	Fire Tank Capacity Proposed As / FIRE AUTHORITY BRIEF			2500	KL
				TOTAL	3984
	CAPACITY OF TANK :			SAY	3985
IV	Underground Tank (No. 2) Near VIEW				
	Daily fresh water requirement for domestic use			161	KLD
	For 12 hours storage			14	KL
	Daily flushing water requirement			635	KL
	For 12 hours storage			52	KL
	CAPACITY OF TANK :			TOTAL	66
					KL
V	Underground Tank (No. 3) Near Skys & Atrium				

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

Ketan Hinganikar
For N+U Design Studio
Architect
CA/2006/37536

	Daily fresh water requirement for domestic use				1268	KLD
	For 1/2 hours storage				105	KL
	Fire Tank Capacity Proposed As / FIRE AUTHORITY BRIEF				125	KL
			TOTAL		230	
	CAPACITY OF TANK :		SAY		230	KL
	Tanks will have compartments for fire & domestic tanks. The water first enters the fire compartment, then over flows to the domestic compartment so that the water in the fire compartment shall remain fresh.					
3	DOMESTIC WATER PUMPS - LOCATED NEAR EDGE TOWERS					
a.)	For "EDGE TOWER-ABCDEF&G"					
	Domestic Water Boosting Pumps					
	Discharge as/ calculation sheet				61	KL/hr
	Head of pump					
	i) Suction lifts		=		0	m
	ii) Friction loss in M<main & specials		=		4.84	m
	iii) Residual head		=		5	m
	iv) Clear head		=		68.8	m
			Total		78.64	m
			SAY		80	m
	BHP of motor (61KL/hrx1000x50/(4500x60x0.60))		=		30.123	HP
			SAY	=	30	HP
b.)	Flushing Water Boosting Pumps					
	Discharge as/ calculation sheet				31	KL/hr
	Head of pump					
	i) Suction lifts		=		0	m
	ii) Friction loss in M<main & specials		=		6.2	m
	iii) Residual head		=		5	m
	iv) Clear head		=		68.8	m
			Total		80	m
			SAY		80	m
	BHP of motor (31KL/hrx1000x68/(4500x60x0.60))		=		15.309	HP
			SAY	=	15	HP
	For "EDGE TOWER-HIJKLMN&O"					
c.)	Domestic Water Boosting Pumps					
	Discharge as/ calculation sheet				61	KL/hr
	Head of pump					
	i) Suction lifts		=		0	m
	ii) Friction loss in M<main & specials		=		4.45	m
	iii) Residual head		=		5	m

Amil

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

Page 6

Kanganika
For N+U Design Studio
Ketan Hingarika
Architect
CA/2006/37536

iv) Clear head			=	68.8	m
		Total	=	78.25	m
			SAY	80	m
BHP of motor (61KL/hrx1000x ⁸⁰ 50/(4500x60x0.60))			=	30.123	HP
		SAY	=	30	HP
d.) Flushing Water Boosting Pumps					
Discharge as/ calculation sheet				31	KL/hr
Head of pump					
i) Suction lifts			=	0	m
ii) Friction loss in M<main & specials			=	3.688	m
iii) Residual head			=	5	m
iv) Clear head			=	68.8	m
		Total	=	77.488	m
			SAY	80	m
BHP of motor (31KL/hrx1000x ⁸⁰ 68/(4500x60x0.60))			=	15.309	HP
		SAY	=	15	HP
For "VIEW TOWER - PQRS &T"					
e.) Domestic Water Boosting Pumps					
Discharge as/ calculation sheet				27	KL/hr
Head of pump					
i) Suction lifts			=	0	m
ii) Friction loss in M<main & specials			=	3	m
iii) Residual head			=	5	m
iv) Clear head			=	51.04	m
		Total	=	59.04	m
			SAY	65	m
BHP of motor (27KL/hrx1000x ⁶⁵ 50/(4500x60x0.60))			=	10.833	HP
		SAY	=	12.5	HP
For "VIEW TOWER - PQRS &T"					
f.) Flushing Water Boosting Pumps					
Discharge as/ calculation sheet				13	KL/hr
Head of pump					
i) Suction lifts			=	0	m
ii) Friction loss in M<main & specials			=	1.36	m
iii) Residual head			=	5	m
iv) Clear head			=	51.04	m
		Total	=	57.4	m
			SAY	65	m
BHP of motor (13KL/hrx1000x ²²⁰ 50/(4500x60x0.60))			=	5.216	HP
		SAY	=	7.5	HP

Shut

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

Page 7

Hinganika

For N+U Design Studio
Ketan Hinganika
Architect
CIN 28037533

	For "ATRIUM TOWER "					
g.)	Domestic Water Boosting Pumps					
	Discharge as/ calculation sheet			32	KL/hr	30
	Head of pump					
	i) Suction lifts		=	0	m	
	ii) Friction loss in M<main & specials		=	3.3	m	
	iii) Residual head		=	5	m	
	iv) Clear head	535 Lpm	=	51.04	m	
			Total	=	59.34	m
			SAY	=	65	m
	BHP of motor (32KL/hrx1000x ⁶⁵ 50/(4500x60x0.60))		=	12.840	HP	
			SAY	=	12.5	HP
	For "ATRIUM TOWER " (UVWXYZ)					
h.)	Flushing Water Boosting Pumps					
	Discharge as/ calculation sheet			16	KL/hr	
	Head of pump					
	i) Suction lifts		=	0	m	
	ii) Friction loss in M<main & specials		=	1.7	m	
	iii) Residual head		=	5	m	
	iv) Clear head		=	51.04	m	
			Total	=	57.74	m
		270 Lpm	SAY	=	65	m
	BHP of motor (16KL/hrx1000x ⁶⁵ 50/(4500x60x0.60))		=	6.420	HP	
			SAY	=	7.5	HP
	For "EWS "					
i.)	Domestic Water Boosting Pumps					
	Discharge as/ calculation sheet			25	KL/hr	30
	Head of pump					
	i) Suction lifts		=	0	m	
	ii) Friction loss in M<main & specials		=	5.19	m	
	iii) Residual head		=	5	m	
	iv) Clear head	420 Lpm	=	45	m	
			Total	=	55.19	m
			SAY	=	55	m
	BHP of motor (25KL/hrx1000x55/(4500x60x0.60))		=	8.488	HP	
			SAY	=	8.5	HP
	For "SKYZ TOWER " (A1 to A9)					
j.)	Domestic Water Boosting Pumps					
	Discharge as/ calculation sheet			66	KL/hr	
	Head of pump					
	i) Suction lifts		=	0	m	
	ii) Friction loss in M<main & specials		=	3.759	m	
	iii) Residual head		=	5	m	
	iv) Clear head		=	68.9	m	


 Uma Shanker Sanoria
 Plumbing & Fire Consultant
 (N+U DESIGN STUDIO)
 A-243, Okhla Phase-I
 New Delhi-110020

Amir


 Ketan Hinganikar
 Architect
 CA/2006/37536

For N+U Design Studio
 Ketan Hinganikar
 Architect
 CA/2006/37536

	1100 Lpm	Total	=	77.659	m
		SAY	=	78	m
	78		=	31.778	HP
	BHP of motor (66KL/hrx1000x50/(4500x60x0.60))		=	31.778	HP
		SAY	=	30.35	HP
	For "SKYZ TOWER "				
k.)	Flushing Water Boosting Pumps				
	Discharge as/ calculation sheet			33	KL/hr
	Head of pump				
	i) Suction lifts		=	0	m
	ii) Friction loss in M<main & specials		=	3	m
	iii) Residual head		=	5.37	m
	iv) Clear head		=	68.9	m
	500 Lpm	Total	=	77.27	m
		SAY	=	78	m
	78		=	15.889	HP
	BHP of motor (33KL/hrx1000x50/(4500x60x0.60))		=	15.889	HP
		SAY	=	15	HP
	For "RISE TOWER " (A+E)				
l.)	Domestic Water Boosting Pumps				
	Discharge as/ calculation sheet			31	KL/hr
	Head of pump				
	i) Suction lifts		=	0	m
	ii) Friction loss in M<main & specials		=	3	m
	iii) Residual head		=	2.5	m
	iv) Clear head		=	89.6	m
	520 Lpm	Total	=	95.1	m
		SAY	=	98	m
	98		=	18.753	HP
	BHP of motor (31KL/hrx1000x50/(4500x60x0.60))		=	18.753	HP
		SAY	=	20	HP
	For "RISE TOWER "				
m.)	Flushing Water Boosting Pumps				
	Discharge as/ calculation sheet			15	KL/hr
	Head of pump				
	i) Suction lifts		=	0	m
	ii) Friction loss in M<main & specials		=	3	m
	iii) Residual head		=	5	m
	iv) Clear head		=	89.6	m
	270 Lpm	Total	=	97.6	m
		SAY	=	98	m
	98		=	9.074	HP
	BHP of motor (15KL/hrx1000x50/(4500x60x0.60))		=	9.074	HP
		SAY	=	10	HP

Aut

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

Page 9

Hingankar
For N+U Design Studio
Ketan Hingankar
Architect
CA/2006/37536

	For "View , Schools & Community Building					
n.)	Domestic Water Transfer Pumps from Main UGT to satellite tank No 1					
	Discharge as/ calculation sheet				99	KL/hr
	Head of pump					
	i) Suction lifts		=	0		m
	ii) Friction loss in M<main & specials		=	7.2		m
	iii) Residual head		=	5		m
	iv) Clear head		=	5		m
		Total	=	17.2		m
			SAY	20		m
	BHP of motor (99KL/hrx1000x ²⁰ 68/(4500x60x0.60))		=	12.222	✓	HP
		SAY	=	12.5	✓	HP
	For "View , Atrium, Skyz & Rise & other buildings					
o.)	Flushing Water Transfer Pumps from STP					
	Discharge as/ calculation sheet				90.9	KL/hr
	Head of pump					
	i) Suction lifts		=	0		m
	ii) Friction loss in M<main & specials		=	7.2		m
	iii) Residual head		=	5		m
	iv) Clear head		=	5		m
		Total	=	5		m
			SAY	20		m
	BHP of motor (90.9KL/hrx1000x ²⁰ 68/(4500x60x0.60))		=	11.222	✓	HP
		SAY	=	12.5	✓	HP
	For " Atrium, Skyz & Rise "					
p.)	Domestic Water Transfer Pumps from Main UGT to satellite tank No 2					
	Discharge as/ calculation sheet				142.5	KL/hr
	Head of pump					
	i) Suction lifts		=	0		m
	ii) Friction loss in M<main & specials		=	3.18		m
	iii) Residual head		=	5		m
	iv) Clear head		=	5		m
		Total	=	13.18		m
			SAY	20		m
	BHP of motor (142.5KL/hrx1000x ²⁰ 50/(4500x60x0.60))		=	17.593	✓	HP
		SAY	=	20	✓	HP

Shankar

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

Page 10

Hinganika
For N+U Design Studio
Ketan Hinganika
Architect
CA/2006/37533

4	PUMPS FOR FIRE PROECTION					
	Pump Description					
i)	Diesel Driven Pump ; Cap=2850 LPM; Head=130m	1	Nos			
ii)	Hydrant Pump; Cap=2850 LPM; Head=115 m	1	Nos			
iii)	Sprinkler Pump; Cap=2850 LPM; Head=115 m	1	Nos			
iv)	Jockey Pump; Cap=180 LPM; Head=115 m	1	Nos			
	Pump Description					
i)	Diesel Driven Pump ; Cap=2850 LPM; Head=130m	1	Nos			
ii)	Hydrant Pump; Cap=2850 LPM; Head=125 m	1	Nos			
iii)	Sprinkler Pump; Cap=2850 LPM; Head=125 m	1	Nos			
iv)	Jockey Pump; Cap=180 LPM; Head=125 m	1	Nos			
	Capacity of Gen Set					
		Set	HP			
1 ✓	Domestic Water Boosting Pumps for Edge tower - ABCDEF&G (1 working +1 standby)	1	30 ✓	=	30 ✓	HP
✓	Flushing Water Boosting Pumps for Edge tower - ABCDEF&G (1 working +1 standby)	1	15 ✓	=	15 ✓	HP
2	Domestic Water Boosting Pumps for Edge tower - HIJKLMN&O (1 working +1 standby)	1	30 ✓	=	30 ✓	HP
✓	Flushing Water Boosting Pumps for Edge tower - HIJKLMN&O (1 working +1 standby)	1	15 ✓	=	15 ✓	HP
3	Domestic Water Boosting Pumps for View Tower - PQRS&T(1 working +1 standby)	1	12.5 ✓	=	12.5 ✓	HP
✓	Flushing Water Boosting Pumps for View Towers- PQRS &T (1 working +1 standby)	1	7.5 ✓	=	7.5 ✓	HP
4	Domestic Water Boosting Pumps for Atrium Tower - UVWXY & Z(1 working +1 standby)	1	12.5 ✓	=	12.5 ✓	HP
✓	Flushing Water Boosting Pumps for Atrium Towers- UVWXY & Z (1 working +1 standby)	1	7.5 ✓	=	7.5 ✓	HP
5	Domestic Water Boosting Pumps for Skyz Tower - (1 working +1 standby)	1	30 30 35	=	30 30 35	HP
✓	Flushing Water Boosting Pumps for Skyz Towers-(1 working +1 standby)	1	15 ✓	=	15 ✓	HP
6	Domestic Water Boosting Pumps for Rise Tower - (1 working +1 standby)	1	20 ✓	=	20 ✓	HP
✓	Flushing Water Boosting Pumps for Rise Towers-(1 working +1 standby)	1	10 ✓	=	10 ✓	HP
7	Domestic Water Boosting Pumps for EWS (1 working +1 standby)	1	8.5 ✓	=	8.5 ✓	HP
8	Domestic Water Transfer Pumps for View, Schools, & Other Building (1 working +1 standby)	1	12.5 ✓	=	12.5 ✓	HP
9	Domestic Water Transfer Pumps for Atrium, Skyz, Rise (1 working +1 standby)	1	20 ✓	=	20 ✓	HP

Flushing Water Transfer Pumps for View, Atrium, Skyz, & Rise -(1 working +1 standby)	1	12.5	=	12.5	HP
Fire Pump (Jockey)	2	25	=	50	HP
Tubewell	10	7.5	=	75	HP
Lighting	1	100	=	100	HP
				483.5	HP
				488.50	
or $473.5 \times 0.746 \times 1.25 = \text{KVA}$				450.86375	KVA
			Say	450	KVA
				550	
Requirement of 450-KVA capacity will be added in to the main D.G. set to provide standby supply.					


Uma Shanker Sanoria
 Plumbing & Fire Consultant
 (N+U DESIGN STUDIO)
 A-243, Okhla Phase-I
 New Delhi-110020

Arul


For N+U Design Studio
Ketan Hinganikar
 Architect
 CA/2006/37536

Estimate for Providing in Internal Development					
M/s S.A. INFRATECH PVT.LTD				Amount (Lacs.)	
Sub Work-I Water Supply			916.22	1096.89	las
Sub Work - II Sewerage			550.38	448.15	las
Sub Work - III Storm Water Drainage			46	140.96	las
Sub Work - IV Roads & Footpath			46	267.39	las
Sub Work - V Street Lighting			46	502.00	las
Sub Work - VI - Horticulture			46	73.08	las
Sub Work - VII - Maintenance of Services for 10 years including resurfacing of roads after 1st 5 years & II phase i.e. 10 years of maintenance (as per HUDA norms)			46	582.16	las
				947.77	las
				2819.60	
		Total		2717.46	Lacs
				3820.10	las

Dev. Cost Rs. 3820.10
57.011 Acres Las Rs. 67.00

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

Amil

Ketan Hinganikar
For N+U Design Studio
Ketan Hinganikar
Architect
CA/2006/37536

Executive Engineer
HUDA, Division No.4,
Gurgaon

Checked subject to comments
in for. 15.1.17
Dt. 13/11/17
with the est. bed

Executive Engineer (W)
for Chief Engineer
HUDA Panchkula

Superintending Engineer
HUDA Circle-II, Gurgaon

M/s S.A. INFRATECH PVT.LTD					
Authorized Signatory					
FINAL ABSTRACT OF REVISED COST OF Sub Work-I					
				Amount (Lacs)	
Sub Head - (I) Tubewell Head works			₹ 281.98	206.96	
Sub Head - (II) Plumbing Machinery			₹ 203.15	242.15	
Sub Head - (III) Distribution System (Dorm + Plumbing)			₹ 154.65	148.38	
Sub Head - (IV) Irrigation Scheme			₹ 10.46	27.84	
Sub Head - (V) Fire Scheme			₹ 60.58	54.98	
Total			₹ 710.82	780.31	
Add 3% Contingencies eq PE charges			₹ 21.32	23.40	
			732.14		
Add 49% Departmental Chages , undersum, price escalation			358.75	803.50	
			1090.89	1112.49	
(CO to final abstract of cost)			TOTAL	915.99	Lacs
				916.22	


Uma Shanker Sanoria
 Plumbing & Fire Consultant
 (N+U DESIGN STUDIO)
 A-243, Okhla Phase-I
 New Delhi-110020


Ketan Hinganikar
 Architect
 CA/2006/37536

Head works

S. No.	Description	Unit	Qty	Rate in Rs	Amount (in Rs)	
1	Boring and installing 510 mm i/d tubewells with reverse/direct rotary rig complete with pipe strainer to a depth of about 80 m. complete	Nos.	100 5	700000 12,50,000	2000000 6250000	
2	Constructing pump chambers as per standard design of PWD PH/HUDA of size 1.50 x 1.50 x 1.50	Nos	10 5	200000 1.00	2000000 5.00	
3	Construction of boosting chambers of suitable size along with under ground tank of capacity KL pumping machinery and generating set etc. complete in all respects.					
	Details of boosting station					
i)	Construction of boosting chamber			LS	1000000	
ii)	UG tank 2249 KL capacity incl. 461 & 1268 KL (ATB Nos. locations) for fire fighting @ 4000/KL	KL	2249 4750 + 461 5360	4000 3500	8996000 188.48 Lacs	
4	Provision for carriage of material and other unforeseen items	No	(L15)	100000	100000	
5	Provision for facilities staff for Maintenance		(L15)	800000	1600000	
	(C.O. to abstract of cost of Sub-work No. 1)			Total	206.96	Lacs
					281.98	

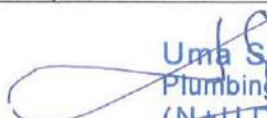
Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

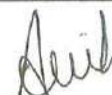
Alieil

Ketan Hingani
For N+U Design Studio
Ketan Hingani
Architect
CA/2008/37536

166.25

	Sub Work 1				
	Sub Head No.II				
	Pumping Machinery Water Supply				
S. No.	Description	Unit	Qty	Rate in Rs	Amount (in Rs)
1					
1.1	UGT -1				
	FOR DOMESTIC				
i	Providing and installing electricity driven electro or submersible pumping set capable of delivering about 15 KLH water per hour against a total head of 90M) complete with motor and other accessories (For Tubewell - 10 HP), <i>bipes valves & specials</i>	Nos	10 5	4000000 2.00	20000000 10.00
ii	Providing and installing electricity driven pumping set capable of delivering 61 KLH of water against a total head of 80M complete with motor and other accessories (For Edge Tower - ABCDEF & G - 30 HP)	Nos	2	250000 3.00 1.00	500000 6.00
iii	Providing and installing electricity driven pumping set capable of delivering 61 KLH of water against a total head of 80M complete with motor and other accessories (For Edge Tower- HIJKLMN& O- 30 HP)	Nos	2	250000 3.00	500000 6.00
iv	Providing and installing electricity driven pumping set capable of delivering 27 KLH of water against a total head of 65M complete with motor and other accessories (For View Tower - PQRS & T - 12.5 HP)	Nos	2	135000	270000 ✓
v	Providing and installing electricity driven pumping set capable of delivering 32 KLH of water against a total head of 65M complete with motor and other accessories (For Atrium Tower- 12.5 HP)	Nos	2	135000	270000 ✓
vi	Providing and installing electricity driven pumping set capable of delivering 25 KLH of water against a total head of 55M complete with motor and other accessories (For EWS- 8.5 HP)	Nos	2	65000 1.00	130000 2.00
vii	Providing and installing electricity driven pumping set capable of delivering 66 KLH of water against a total head of 78 M complete with motor and other accessories (For Skyz Tower- 30 HP) <i>35</i>	Nos	2	250000 3.50	500000 7.00
viii	Providing and installing electricity driven pumping set capable of delivering 31 KLH of water against a total head of 98 M complete with motor and other accessories (For Rise Tower- 20 HP)	Nos	2	135000 2.00	270000 4.00


Uma Shanker Sanoria
 Plumbing & Fire Consultant
 (N+U DESIGN STUDIO)
 A-243, Okhla Phase-I
 New Delhi-110020


Ketan Hinganikar
 Architect
 CA/2006/37536

ix	Providing and installing electricity driven pumping set capable of delivering 99 KLH of water against a total head of 5 M complete with motor and other accessories (For View, schools & others building- 12.5 HP)	Nos	2	300000 1.50	600000 3.00	
x	Providing and installing electricity driven pumping set capable of delivering 142.5 KLH of water against a total head of 5 M complete with motor and other accessories (For Atrium, Skyz, & Rise Tower- 20 HP)	Nos	2	175000 2.00	350000 4.00	
FOR FLUSHING						
i	Providing and installing electricity driven pumping set capable of delivering 31 KLH of water against a total head of 80M complete with motor and other accessories (For Edge Tower - ABCDEF & G - 15HP)	Nos	2	40000 1.50	80000 3.00	
ii	Providing and installing electricity driven pumping set capable of delivering 31 KLH of water against a total head of 80M complete with motor and other accessories (For Edge Tower- HIJKLMN& O- 15HP)	Nos	2	40000 1.50	80000 3.00	
iii	Providing and installing electricity driven pumping set capable of delivering 13 KLH of water against a total head of 65 M complete with motor and other accessories (For View Tower - 7.5 HP)	Nos	2	30000 75000/-	60000 1.50 Lacs	
iv	Providing and installing electricity driven pumping set capable of delivering 16 KLH of water against a total head of 65M complete with motor and other accessories (For Atrium Tower - 7.5HP)	Nos	2	35000 75000/-	70000 1.50 Lacs	
v	Providing and installing electricity driven pumping set capable of delivering 33 KLH of water against a total head of 78M complete with motor and other accessories (For Skyz Tower- 15HP)	Nos	2	35000 1.50	70000 3.00 Lacs	
vi	Providing and installing electricity driven pumping set capable of delivering 15 KLH of water against a total head of 98 M complete with motor and other accessories (For Rise Tower - 10 HP)	Nos	2	35000 1.00	70000 2.00 Lacs	
vi	Providing and installing electricity driven pumping set capable of delivering 90.9 KLH of water against a total head of 50 M complete with motor and other accessories (For View, Atrium, Skyz, & Rise Tower - 12.5 HP)	Nos	2	135000 1.50	270000 3.00 Lacs	

Amil

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

Page 17

Hingankar
For N+U Design Studio
Ketan Hingankar
Architect
CAD: 137429

2	Provision for diesel engine generator set each for standby Arrangemnets for booster pump complete with gear head arrangements of following capacities.					
	200 ⁵⁵⁰					
(i)	1 No. - 200 KVA	Nos.	1	1800000 ^(L.S)	1800000 ⁴⁰⁻⁰⁰	
3	Providing & installing pumping set of following capacities for fire protection:					
i)	180 LPM @115 M Head (25 HP) Jockey	Nos.	1	325000	325000 ✓	
ii)	2850 LPM @115 M Head (120 HP) Hydrant	Nos.	1	825000	825000 ✓	
iii)	2850 LPM @115 M Head (120 HP) Sprinkler	Nos.	1	825000	825000 ✓	
iv)	2850 LPM @115 M Head (DG Pump)	Nos.	1	950000	950000 ✓	
v)	180 LPM @125 M Head (25 HP) Jockey	Nos.	1	350000	350000 ✓	
vi)	2850 LPM @125 M Head (120 HP) Hydrant	Nos.	1	875000	875000 ✓	
vii)	2850 LPM @125 M Head (120 HP) Sprinkler	Nos.	1	875000	875000 ✓	
viii)	2850 LPM @125 M Head (DG Pump)	Nos.	1	1000000	1000000 ✓	
4	Provision for diesel engine genset stand bye arrangements for Tubewells.	Nos.	2	150000	300000 ✓	
5	Provision for pressuer type chlorination plant complete	Nos. ^(L.S)	2	100000	200000 ⁴⁻⁰⁰	
6	Provision for making foundations & erection of pumping machinery	Ls	2 ^(L.S)	200000	400000 ¹⁰⁻⁰⁰	
7	Provision for pipes, valves & specials inside the pump chamber	Ls	2 ^(L.S)	200000	400000 ^{7.50 lacs}	
8	Provision for electric services connection including electric fittings for tubewells chambers complete <i>including cost of Transformer</i>	Ls	2 ^(L.S)	300000	600000 ¹⁰⁻⁰⁰	
9	Provision for carriage for materials and other unforeseen items	LS	2	200000	400000	
	(C.O. to abstract of cost of Sub-work No. 1)			Total	342.15 ^{203.15}	Lacs


Uma Shanker Sanoria
 Plumbing & Fire Consultant
 (N+U DESIGN STUDIO)
 A-243, Okhla Phase-I
 New Delhi-110020

Amil


Ketan Hinganikar
 Architect
 CA/2006/37536

WATER SUPPLY DISTRIBUTION
Dom. + Flushing

Sub Work 1					
Sub Head No.III Water Supply Distribution System / Rising Main					
S. No.	Description	Unit	Qty	Rate in Rs	Amount (in Rs)
1	Providing laying, jointing & testing G.I. 26" class pipes including cost of excavation complete as per ISI, marked. <i>(Dom. + Flushing)</i>		1882	12501	23.53 Lacs
i)	100mm dia	M	743	2200	1656600
ii)	150mm dia	M	3692	1645	6075000
ii)	200mm dia	M	880	3800	3344000
			835	2150	17.95 Lacs
2	Providing laying, jointing & testing D.I. (K9) pipe line & specials including cost of excavation complete in all respect.				
iv)	100 mm dia	M	383	1200	459600
v)	150 mm dia	M	149	1575	234675
v)	200 mm dia	M	236	2100	495600
4	Providing fixing & testing ball valves with lever including cost of complete in all respects.				
i)	50 mm dia	Nos.	16	2450	39200
i)	65 mm dia	Nos.	16	3500	56000
ii)	80 mm dia	Nos.	8	10000	80000
3	Providing, fixing & Testing Sluice valves including cost of complete in all respects.				
iii)	100 mm dia	Nos.	18	12000	216000
iv)	150 mm dia	Nos.	18	15000	270000
v)	200 mm dia	Nos.	1	18000	18000
v)	250 mm dia	Nos.	1	18000	18000
				24000	24000
5	Providing, fixing & Testing Non Return valves (NRV) including cost of complete in all respects.				
i)	100 mm i/d	Nos.	0	12000	0
6	Providing and fixing air valves and scour valves including cost of complete in all respects.	Nos.	5	10000	50000
7	Providing and fixing indicating plates for sluice valve, air valve etc.	Nos.	38	1000	38000
8	Provision for carriage of material	LS	-	-	5.00 100000
9	Provision for cutting the roads and making to its original conditions.	LS	-	-	100000
10	Making water supply connection with HUDA main <i>on master road</i>	LS	-	-	100000
11	Provision for rising main from tubewells (D.I. (K-9) pipe line) to UG Tank				
i)	100 mm i/d	M	326	1250	407500
ii)	150 mm i/d	M	442	1575	696150
			549		8.65 Lacs

Shil

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

Page 19

Hanganika

For N+U Design Studio
Ketan Himanikar
Architect
Chhatrapati Shivaji Maharaj

iii)	200 mm i/d	(including Rising main)	M	147	2150/-	3.16 lacs	
iii)	250 mm i/d		M	57	2400	119700	
iii)	300 mm i/d		M	500 + 350	2900	1015000	4.48 lacs 24.32
				251	3500	878500	0.53 lacs
				15			
	(C.O. to abstract of cost of Sub-work No. 1)				Total	148.38	Lacs

R 154.65 lacs

Hinganikar

Avil

For N+U Design Studio
Ketan Hinganikar
Architect
CA/2006/37536

Uma Shanker Sanoria

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

	Sub Work 1					
	Sub Head No.IV Water Supply Irrigation					
S. No.	Description	Unit	Qty	Rate in Rs	Amount (in Rs)	
1	Providing, laying, jointing & testing uPVC pipe line confirming to IS 4985 including cost of Excavation etc. complet in all respect.					
ii)	65 mm dia <i>connected to the Flushing Lin</i>	M	825	500	412500	
ii)	80 mm dia <i>32/25/20 mm GH Lin</i>	M	1000	700	700000	
ii)	100 mm dia <i>(C.S)</i>	M	1119	950	1063050	<i>5-00</i>
2	Providing and fixing 20 mm dia Irrigation hydrant valve complete in all respect.	Nos.	88	1000 <i>3500</i>	88000 <i>3.08 lacs</i>	
3	Providing, fixing & Testing ball valves including cost of complete in all respects.					
i)	50 mm dia <i>32/25/20 mm (C.S)</i>	Nos.	0	4500	0	
i)	65 mm dia	Nos.	15	5500	82500	
ii)	80 mm dia	Nos.	15	10000	150000	<i>1.00 lacs</i>
4	Providing and fixing indicating plates for valves ..	Nos.	88	1000	88000	
5	Provision for carriage of materials etc. and other unforeseen charges	LS			100000 <i>0.50 lacs</i>	
6	Provision for cutting of roads & making good to its in original conditions	LS			100000 <i>10.46 lacs</i>	
	(C.O. to abstract of cost of Sub-work No. 1)			Total	27.84	Lacs

Swat

Shankar
For N+U Design Studio
Ketan Shankar

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

	Sub Work I					
	Sub Head No. V Fire Scheme					
S. No.	Description	Unit	Qty	Rate in Rs	Amount (in Rs)	
1	Providing, laying, jointing & testing M.S. pipes for fire ring main including cost of Fittings, Valves & excavation complete (as per ISI marked) in all respect.					
a)	200 mm dia	M	40 ✓	2150 1800	86000 72000	
b)	150 mm dia	M	2781 3153	1575 ✓	4380075 49.66 Lacs	
2	Providing and fixing External Fire Hydrants complete with masonry chambers.	Nos.	68	10000	680000 ✓	
3	Providing & fixing valve					
a)	150 mm dia	Nos.	12	14000 ✓	168000 ✓	
b)	100 mm dia	Nos.	0	12000 ✓	0	
c)	80 mm dia	Nos.	0	10000	0	
4	Providing, fixing & Testing Non Return valves (NRV) including cost of complete in all respects.					
i)	80 mm i/d	Nos.	0	5000	0	
ii)	150 mm i/d	Nos.	3	10000	30000 ✓	
5	Provision for cutting of roads and carriage of materials etc. and other unforeseen charges	LS		-	100000 ✓	
6	Provision for indication plates	Nos.	68	1000	68000 ✓	
7	Provision for carriage of material	LS	-	-	50000 ✓	
	(C.O. to abstract of cost of Sub-work No. 1)			Total	54.78 54.98	Lacs

60.58 Lacs

Seal

Ketan Hinganikar

For N+U Design Studio
Ketan Hinganikar
Architect
CA/201/337523

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

Sub Work II Sewerage Scheme						
S. No	Description	Unit	Qty	Rate in Rs	Amount (in Rs)	
1	Providing, lowering, jointing, cutting salt glazed stone ware pipes and specials into trenches including cost of excavation, bed concrete lot of manholes complete.					
i)	200 mm i/d		516		6.45	
a)	Average depth 1.5 m	M	346	1250	395000	
b)	Average depth 1.5 m to 3.0 m	M	689	1400	964600	10.85 lacs
c)	Average depth 3.0 m to 4.5 m	M		1600	0	
ii)	250 mm i/d					
a)	Average depth 1.5 m	M			0	
b)	Average depth 1.5 m to 3.0 m	M	532	1700	904400	
c)	Average depth 3.0 m to 4.5 m	M	268	1800	797400	4.82 lacs
iii)	300 mm i/d					
a)	Average depth 1.5 m	M			0	
b)	Average depth 1.5 m to 3.0 m	M	162	2000	0	3.24 lacs
c)	Average depth 3.0 m to 4.5 m	M	304	2200	668800	
iii)	450 mm i/d					
a)	Average depth 1.5 m	M			0	
b)	Average depth 1.5 m to 3.0 m	M	229	3000	0	2.82 lacs
c)	Average depth 3.0 m to 4.5 m	M	321	3100	995100	
iii)	500 mm i/d					
a)	Average depth 1.5 m	M			0	
b)	Average depth 1.5 m to 3.0 m	M			0	
c)	Average depth 3.0 m to 4.5 m	M	18	3500	63000	
2	Provision for lighting, watching and temporary diversion of traffic	LS			100000	5-00
3	Provision for cutting of roads and carriage of materials etc. and other unforeseen charges	LS			300000	10-00
4	Provision for connection with HUDA on master roads				50000	
5	Cost of Sewage Treatment Plant. 2709klld	KLD	2709	12000	32508000	227.50 lacs
6	Provision for uPVC pipe 300 mm dia pipe from STP. To Huda Main Line,	M	280	1500	420000	9.80 lacs
7	Provision for vent pipe at suitable places			3500	980000	5.00 lacs
8	Provision for timbering & shoring				38166300	432.11 lacs
	as per P.H. requirement					
	Add 3% contingencies & PE charges				1144989	12.98 lacs
					39311289	445.59 lacs
	Add 14% Deptt. Charges, price escalation, unforeseen				5503580.46	218.34 lacs
	Admin. charges					663.93

(CO. to abstract of cost of Sub-work No. 1)				Total	550.86 448.15	Lacs
---	--	--	--	-------	--	------


 Uma Sharma Sanoria
 Plumbing & Sanitary Consultant
 (N+U DESIGN STUDIO)
 A-243, Okhla Phase-I
 New Delhi-110020

Final


 For N+U Design Studio
 Ketan Hinganikar
 Architect
 CA/2006/37536

Sub Work -III Storm Water Drain						
S. No	Description	Unit	Qty	Rate in Rs	Amount (in Rs)	
1	Providing, lowering, jointing, cutting RCC NP3 pipes and specials into trenches including cost of excavation cost of manholes, ventilating chambers etc. complete in all respects.					
i)	400 mm i/d		2450	2500/-	61.25 Lacs	
a)	Average depth upto 1.5 m	M	2724	1750	4767000	
ii)	400 mm i/d			2700/-	4.19 Lacs	
a)	Average depth 1.5 m to 3 m	M	155	4850	286750	
iii)	500 mm i/d					
a)	Average depth upto 1.5 m	M	500	3400/-	17.00 Lacs	
b)	Average depth 1.5 m to 4.5 m	M	20	2550	51000	
iv)	600 mm i/d					
a)	Average depth upto 1.5 m	M	130 mtr	4070/-	5.29 Lacs	
b)	Average depth 1.5 m to 4.5 m	M	-	-	10.00 Lacs	
2	Provision for Road Gully & Drain with 300 mm dia pipe connection	LS	-	-	500000	
3	Provision for cutting of roads and carriage of materials etc. and other unforeseen items	LS	-	-	450000	5.00 Lacs
4	Provision for disposal arrangements i.e. Recharge Pit	Nos	40	150000	6000000	
5	Provision for lighting, watching and temporary diversion of traffic	LS	-	-	100000	5.00
6	Provision for connection with HUDA	LS	-	-	150000	
7	Provision for trussing & shoring (L.S.)				5.00	
				Total	12004750	174.23
	Add 3% contingencies & P.E. charges				360142.5	5.23
					12364892.5	
	Add 14% Deptt. Charges, price escalation, unforeseen Admin. charges				1731084.95	179.46
					14095977.5	87.93
	(C.O. to abstract of cost of Sub-work No. 1			Total	140.96	267.39

Amid

For N+U Design Studio
Ketan Hinganikar
Architect
CA/2005/37533

Uma Shankar Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

Sub Work IV Road Work					
S. No	Description	Unit	Qty	Rate in Rs	Amount (in Rs)
1	Provision for leveling & earth filling : including providing good earth transportation from source to site, laying in layer, rolling & watering & compaction to the desired specification for road & bridge works Clause-305 for all leads and lift as per site conditions. <i>60.511 - 3.50 = 57.011 Acres.</i>	Sq. mtr.	41170	102 <i>@ Rs. 1.00 Lac per acre</i>	4199340 <i>57.01 Lac</i>
2	Construction of road by:-				
i)a	Providing GSB 150 thick as per MORT & H specifications conforming to Clause 401 grading -11	Sq. mtr.	41170 <i>33250</i>	800 <i>850/-</i>	32936000 <i>282.63 Lac</i>
ii)a	Preparation of sub grade by excavation to an average depth upto 10", dressing to camber and consolidation with road roller.				
ii)b	Laying of G.S.B, 0.15 m thick.				
ii)c	Wetmix Macadam 0.15 m thick surface.				
ii)d	Dressing 0.25 m thick Premix Carpet.				
ii)e	Cement Pavers complete in all respect and dressed by				
3	Providing & Fixing kerbs & channels of C.C. M-20 grade as per standard size including back filling etc. complete in all respect. 10536/6 (length of Kerb considered (Road Length x 2)	mtr.	8430	400 <i>600/-</i>	3372000 <i>50.58 Lac</i>
4	Provision for making Paved Pathways (External Roads)	Sq.M.	9727.39	80	778191.2
5	Provision for making Paved Pathways (Internal Pockets)	Sq.M.	6041.64	80	483331.2
6	Provision for making approach to each block and pavements. <i>(L.S)</i>	Sq.M.	2000	80	160000 <i>30.00 Lac</i>
7	Provision of paved Areas for Parking	Sq.M.	6025	80	482000
8	Provision for Guide Maps, Indicating Boards & Road Marking Strips 7 Post Delinators.	LS.		250000	250000 <i>5.00 Lac</i>
9	Provision for Carriage of Material and other foreseen items.	LS.		150000	150000 <i>5.00 Lac</i>
7	<i>Provision for Traffic Light Control (2.57)</i>				<i>2.57 Lac</i>
8	<i>Provision for Culverts on 30m wide Nallah. (2 Nos)</i>				<i>50.00 Lac</i>
	Add 3% contingencies <i>94 p.e. charges</i>				1284325.87 <i>482.72</i>
					44095188.3 <i>14.48 Lac</i>
	<i>49%</i>				6173326.36 <i>497.20 Lac</i>
	Add 14 % department charges <i>price escalation, unproven return charges.</i>				6173326.36 <i>243.62</i>
				Total	502.69 Lacs <i>740.82</i>

C.O. to final abstract of cost

Amil

Uma Sharma Page 26
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243 Qkhla Phase-I
New

Ketan Hinganikar
For N+U Design Studio
Ketan Hinganikar

Sub Work V Street Lighting					
S. No	Description	Unit	Qty	Rate in Rs	Amount (in Rs)
1	Supply, installation, testing and commissioning of Street Lighting GL Poles , Light Fixtures, Feeder Pillars, Cables & Wires including cable end terminations and Earthing Station etc. for Street Lighting	per acre	45.637	100000	4563700
			60.511 3.50		57.01 Lacs
		(-)	57.011		1.71 Lacs
	Add 3% contingencies & P.C. charges				136911
					58.72 Lacs
	Total				4700611
	49% Add 14% Deptt. Charges, price escalation				28.73 Lacs
	unforseen, Admin. charges				658085.54
					87.49 Lacs
				Total	53.59 Lacs

Devil

Kinganka

For N+U Design Studio

Ketan Hinganikar

Architect

CA/2000/17536

C.C. to final abstract of cost

Uma Shanker Sanoria

Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

Sub Work VI Horticulture					
S. No	Description	Unit	Qty	Rate in Rs	Amount (in Rs)
1	Development of lawn area				
a)	Trenching the ordinary soil upto depth of 60 cm. Including removal & packing of serviceable material & disposing at a lead of 50 M and making up the trenched area to proper level by filling with earth mixed with manure before & after flooding trench with water including cost of imported earth & manure.				
b)	Rough dressing of trenched area.				
c)	Grassing including watering & maintenance of lawns free from weeds & fit for moving in rows including hedges, shrubs & green belts (as per HUDA Norms)				
	Lawn Area Development of for average of site of 15.025 acres @ Rs. 0.90 lacs. 1.00 lacs	Acres	45.637 8.92	90000 1.00 lacs	4107330 8.92 lacs
	Total Green Area in Entire Site	Sq.M.	36060.908		
	Tree Plantation Area (60% of total Green Area)	Sq.M.	21636.545		
	Plantation of Trees (1 Tree for every 15 sq.M. of Plantation Area at the cost of Rs. 1500/- each	No of Trees	1442.4363	1500	2163654.48
		705 Tree		1500/- each	5.29 lacs
	Add 3% contingency charges 49% PE. Charges				6270984.48
					188129.53
	Add 14% Deptt. Charges major work, Admin. Charges price escalation			Total	6459114.01
				Total	904275.96
				Total	73.63 Lacs
					21.84 lacs

Cost details

Excavation = Rs. 30/-

Manure = Rs. 60/-

Tree plant = Rs. 60/-

Tree Guard = Rs. 600/-

Rs. 750/-

C.O. to final abstract of cost

Road length = 8430 mtr/12
702 nos Sag 705 nos

Hingani
For N+U Design Studio
Ketan Hingani
Architect
CA/2008/37833

Uma
Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

Sub Work VII Maintenance Charges & Resurfacing of Roads						
S. No	Description	Unit	Qty	Rate in Rs	Amount (in Rs)	
1	Provision for maintenance charges for water supply, sewerage, storm water drainage, roads, street light, horticulture etc. complete including operation & establishments charges as per HUDA norms after completion & resurfacing of roads after 10 years or 1st phase.		60.511 3.50 Future Expansion 57.011			
	15.025 acres @ 5 lacs per acre	acre	46.637	500000	22818500	
2	Provision for resurfacing & strengthening of road @ Rs. 350/- per sqm	Sq.M.	41170 33250	350 400/-	14409500 133.00	Lacs
3	Provision for resurfacing of road after 5 year @ Rs. 300/- per sqm	Sq.M.	41170 33250	300 600/-	42351000 199.50	Lacs
					617.56	Lacs
					49579000	
					18.52	Lacs
	Add 3% contingency & PE charges				1487370	
					636.09	Lacs
	49%.					
	Add 14% Departmental charges				Total 51066370	
	unforeseen, Admin. Charges				311.68	Lacs
					7149291.8	
					967.77	Lacs
					Total 582.16	Lacs

Seal

Hinganikar

For N+U Design Studio
Ketan Hinganikar
Architect
CA/2006/37536

C.O. to final abstract of cost

Uma Shanker Sanoria

Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

PROJECT :- SECTOR 37-D			
DOMESTIC WATER SUPPLY QUANTITY SHEET			
S.No.	Line No.	Length of Pipe	Dia of Pipe
	From	MTR.	MM.
LINE No. A			
1	A1-A2	194 ✓	150Ø
2	A2-A3	67 ✓	150Ø
3	A3-A5	58 ✓	150Ø
4	A2-A4	53 ✓	150Ø
5	A4-A5	62 ✓	150Ø
		434 mtr	
LINE No. B			
1	B1-B2	120 ✓	150Ø
2	B2-B3	61 ✓	150Ø
3	B3-B5	73 ✓	150Ø
4	B2-B4	74 ✓	150Ø
5	B4-B5	61 ✓	150Ø
		390 387	
LINE No. C			
1	C1-C2	85	100Ø
2	C2-C3	51 ✓	100Ø
3	C3-C5	22 28	100Ø
4	C2-C4	12 ✓	100Ø
5	C4-C5	53	100Ø
		223 mtr	
LINE No. D			
1	D1-D2	72 ✓	100Ø
2	D2-D3	27 ✓	100Ø
4	D3-D6	11 ✓	100Ø
5	D2-D4	10 ✓	100Ø
6	D4-D5	11 ✓	100Ø
6	D5-D6	37 ✓	100Ø
		168 ✓	
LINE No. E			
1	E1-E2	74 ✓	150Ø
2	E2-E3	40 ✓	150Ø
3	E3-E5	84 ✓	150Ø
4	E2-E4	78 ✓	150Ø
5	E4-E5	35 ✓	150Ø
		311 mtr	
LINE No. F			
1	F1-F2	210 ✓	150Ø
2	F2-F3	12 ✓	150Ø
3	F3-F5	68 ✓	150Ø
4	F2-F4	80 ✓	150Ø
5	F4-F5	25 ✓	150Ø
		395 mtr	Ø
LINE No. G (To satellite Tank No. 2)			
1	G1-G2	735 ✓	200Ø
		735 ✓	
LINE No. H (To Satellite Tank No.)			
1	H1-H2	250 ✓	150Ø
2	H2-H3	322 ✓	100Ø
		572 ✓	

Sail

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

Hangamkar
For N+U Design Studio
Keto & Hangamkar

FLUSHING WATER SUPPLY QUANTITY SHEET			
S.No.	Line No.	Length of Pipe	Dia of Pipe
	From	MTR.	MM.
To Edge Towers (ABCDEF&G)			
1	1--2	98 ✓	150Ø
2	2--3	49 ✓	150Ø
3	3--5	64 ✓	150Ø
4	2--4	83 ✓	150Ø
5	4--5	68 ✓	150Ø
		362 mtr	
To Edge Towers (HIJKLMN&O)			
1	6--7	156 ✓	150Ø
2	7--8	86 ✓	150Ø
3	8--10	69 ✓	150Ø
4	7--9	64 ✓	150Ø
5	9--10	82 ✓	150Ø
		457 ✓	
To View Towers (PQRS &T)			
1	11--12	93 ✓	100Ø
2	12--13	37 ✓	100Ø
3	13--15	20 ✓	100Ø
4	12--14	16 ✓	100Ø
5	14--15	41 ✓	100Ø
		207 mtr	
To Atrium Towers (UVWXY&Z)			
1	16--17	128 114 ✓	100Ø
2	17--18	5 ✓	100Ø
4	18--21	36 ✓	100Ø
5	18--19	18 ✓	100Ø
6	19--20	36 ✓	100Ø
6	20--21	8 10 ✓	100Ø
		220 211	
To Skyz Towers			
1	22--23	135 ✓	150Ø
2	23--24	33 ✓	150Ø
3	24--26	82 ✓	150Ø
4	23--25	51 82 ✓	150Ø
5	25--26	32 ✓	150Ø
		333 365	
To Rise Towers			
1	27 A-28	210 104 ✓	150Ø
2	28--29	12 20 ✓	150Ø
3	29--30	68 ✓	150Ø
4	30--31	80 23 ✓	150Ø
5	28--31	25 68 ✓	150Ø
	27-27A	395 274	Ø
		557 mtr	
		Length in (M)	Pipe Dia (MM)
Domestic Water Supply line GI Heavy Class			
Extra for school 280 + 150 + 719 mtr = 1150 mtr			100Ø
Domestic Water Supply line GI Heavy Class		1776	150Ø
		1645	150Ø
Domestic Water Supply line GI Heavy Class		735	200Ø
		680	200Ø

$1150 + 105 = 1255 \text{ mtr}$
 (N's) 200 mtr for school
 Total = 1455 mtr

Handwritten signature

Uma Shanker Sanoria
 Plumbing & Fire Consultant
 (N+U DESIGN STUDIO)
 A-243, Okhla Phase-I
 New Delhi-110020

Page 31

Handwritten signature

For N+U Design Studio
 Ketan Hinganikar

C/

3

150Ø Domestic Water Supply D.I. pipe from UGT to basement	135 ✓	150Ø
200Ø Domestic Water Supply D.I. pipe from UGT to basement	55 ✓	200Ø
250Ø Domestic Water Supply D.I. pipe from HUDA water Main to UGT	500 45 ✓	200Ø
Flushing Water Supply line GI Heavy Class	427 1459	100Ø
Flushing Water Supply line GI Heavy Class	1876 515	150Ø
100 Dia Valve	18	Nos.
150 Dia Valve	18	Nos.
200 Dia Valve	1	Nos.
250 Dia Valve	1	Nos.

Amil

Ketan Hinganikar

For N+U Design Studio
Ketan Hinganikar
Architect
CA/2006/37535

Uma Shanker Sanoria

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

<u>Grand total</u> <u>CI/DI Pipeline</u>	<u>Domestic</u>	<u>Flushing</u>	<u>Total</u>
100 mm Ø =	1455 mtr +	427 mtr =	1882 mtr
150 mm Ø =	1776 mtr +	1876 mtr =	3652 mtr
200 mm Ø =	735 mtr +	100 mtr =	835 mtr
250 mm Ø Rising main	500 mtr		

TUBE WELL WATER SUPPLY QUANTITY SHEET			
S.No.	Line No.	Length of Pipe	Dia of Pipe
	From	MTR.	MM.
1	T1 -- T3 A	185 536 ✓	100Ø 150
2	T2 -- T3 A	102 152 ✓	100Ø
3	T3 -- T4 B	142 174 ✓	150Ø 100Ø
4	T4 -- T5A-B	209 13 ✓	150Ø ✓
5	B T5 -- T7 T4	44 143 ✓	200Ø ✓
6	T6 -- T8 C	152 439	100Ø 250
7	C T8 -- T9 UGT	174 15	100Ø 300
8	T9 -- 10	91	150Ø
9	T7 -- T10	13	200Ø
10	T10 -- T11	147	250Ø
11	T11 -- T12	203	250Ø
11	T12 -- T13	236	300Ø
12	T13 -- UGT	15	300Ø
100 Dia Valve		1	Nos.
100 Dia NoN Return Valve (NRV)		1	Nos.
150 Dia Valve		2	Nos.
150 Dia NoN Return Valve (NRV)		2	Nos.
Tube Well Water Suplly line DI PIPE		613 326	100Ø
Tube Well Water Suplly line DI PIPE		442 549	150Ø
Tube Well Water Suplly line DI PIPE		57 143	200Ø
Tube Well Water Suplly line DI PIPE		350 439	250Ø
Tube Well Water Suplly line DI PIPE		251 15	300Ø

Shit

Hinganika

For N+U Design Studio
Ketan Hinganika
Architect
CA/20/2011

Uma

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

PROJECT :- SECTOR - 37 D GURGAON				
IRRIGATION WATER SUPPLY QUANTITY SHEET				
S.No.	Line No.		Length of Pipe mtr.	Dia of Pipe mm.
	From	TO		
Near Edge Tower				
1	S.T.P (A)	B	14	100Ø
2	B	C	74	100Ø
3	C	C1	75	80Ø
4	C1	C3	25	80Ø
5	C	D	65	100Ø
6	D	D1	86	80Ø
7	D1	D2	35	65Ø
8	D	E	7	100Ø
9	E	F	155	100Ø
10	F	F1	54	65Ø
11	F	G	108	100Ø
12	G	H	215	100Ø
13	H	H1	17	65Ø
Near View Tower				
1	H2	J	172	65Ø
2	I	H	214	100Ø
3	J	I	62	100Ø
4	K	J	42	100Ø
5	K	L	81	100Ø
6	L	B	65	100Ø
7	M	N	17	100Ø
8	N	O	75	80Ø
Near Skyz, Atrium & Rise Tower				
1	O	P	148	80Ø
2	P	Q	83	65Ø
3	Q	R	270	65Ø
4	R	S	25	80Ø
5	S	N	348	80Ø
6	P	T	20	80Ø
7	T	U	80	80Ø
8	U	V	118	80Ø
9	V	V2	194	65Ø
			Length in (mtr.)	Pipe Dia
Irrigation Water Supply Line			825	65Ø
Irrigation Water Supply Line			1000	80Ø
Irrigation Water Supply Line			1119	100Ø
Garden Hydrant (20 mm)			88	Nos.
65 Dia Valve				Nos.
80 Dia Valve				Nos.
100 Dia Valve				Nos.
PROJECT :- SECTOR - 37 D GURGAON				
FIRE QUANTITY SHEET				
S.No.	Line No.		Length of Pipe mtr.	Dia of Pipe mm.
	From	TO		

37-D SEWER WATER LINE							
S.N.	LINE NO.	LENGTH OF PIPE	PIPE SIZE	SLOPE	FALL	G.L.	I.L.
		M	MM	1 IN	M	M	M
Line No. A1-A2							
	a1	0	200	200	0	214	212.6
	a2	21.5	200	200	0.1075	214	212.493
	a3	17	200	200	0.085	214	212.408
	a4	17.5	200	200	0.0875	214	212.32
	a5	16	200	200	0.08	214	212.24
		<u>72</u>					
Line No. A2-A3							
	a6	22.00	200	200	0.11	214	212.13
	a7	17	200	200	0.085	214	212.045
	a8	15.5	200	200	0.0775	214	211.968
	a9	23.5	200	200	0.1175	214	211.85
	a10	23	200	200	0.115	214	211.735
	a11	23.5	200	200	0.1175	214	211.618
	a12	15	200	200	0.075	214	211.543
		<u>142</u>					
Line No. B1-B2							
	b1	0.00	200	200	0	214	212.6
	b2	30.00	200	200	0.15	214	212.45
	b3	30.00	200	200	0.15	214	212.3
	b4	22.00	200	200	0.11	214	212.19
	b5	25.00	200	200	0.125	214	212.065
		<u>107</u>					
Line No. B2-B3							
	b6	17.5	200	200	0.0875	214	211.978
	b7	15.5	200	200	0.0775	214	211.9
	b8	22.5	200	200	0.1125	214	211.788
	b9	14	200	200	0.07	214	211.718
	b10	26.5	200	200	0.1325	214	211.585
	b11	22	200	200	0.11	214	211.475
	b12	20.5	250	250	0.082	214	211.393
	b13	30	250	250	0.12	214	211.273
	b14	20	250	250	0.08	214	211.193
		<u>10 V88 47.80</u>					
Line No. B3-B4							
	b15	21.5	250	250	0.086	214	211.107
	b16	22	250	250	0.088	214	211.019
	b17	18	250	250	0.072	214	210.947
	b18	17.5	250	250	0.07	214	210.877
	b19	17.50	250	250	0.07	214	210.807
	b20	18	250	250	0.072	214	210.735
		<u>114</u>					
Line No. B4-D3							
	b21	20.5	300	340	0.0603	214	210.675
	b22	10.5	300	340	0.0309	214	210.644
	b23	11	300	340	0.0324	214	210.611
	b24	22	300	340	0.0647	214	210.547

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I

Page 46

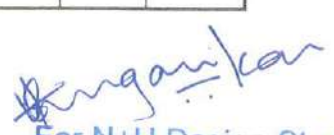
For N+U Design Studio
Ketan Hinganikar
Architect
CA/2006/37536

37-D SEWER WATER LINE							
S.N.	LINE NO.	LENGTH OF PIPE	PIPE SIZE	SLOPE	FALL	G.L.	I.L.
		M	MM	1 IN	M	M	M
	b25	26	300	340	0.0765	214	210.47
	b26	27	300	340	0.0794	214	210.391
	b27	30	300	340	0.0882	214	210.303
	b28	28.5	300	340	0.0838	214	210.219
	b28-d15	5	300	340	0.0147	214	209.36
		<u>180.50</u>					
Line No. C1-C2 ✓							
	c1	0.00	200	200	0	214	212.6
	c2	27.50 ✓	200	200	0.1375	214	212.463
	c3	27.00 ✓	200	200	0.135	214	212.328
	c4	27.00 ✓	200	200	0.135	214	212.193
		<u>81</u>					
Line No. C2-C3							
	c5	21	200	200	0.105	214	212.088
	c6	26	200	200	0.13	214	211.958
	c7	26.5	200	200	0.1325	214	211.825
	c8	26	200	200	0.13	214	211.695
		<u>99</u>					
Line No. C3-C4							
	c9	13.00	300	250	0.052	214	211.643
	c10	14.00	300	250	0.056	214	211.587
	c11	21.50	300	250	0.086	214	211.501
	c12	29.00	300	250	0.116	214	211.385
	c13	17.50	300	250	0.07	214	211.315
	c14	16.50	300	250	0.066	214	211.249
		<u>111.50</u>					
Line No. C4-C5							
	c15	20	450	350	0.0571	214	211.192
	c16	29.00	450	350	0.0829	214	211.109
	c17	22	450	350	0.0629	214	211.046
	c18	29.5	450	350	0.0843	214	210.962
	c25	8	450	350	0.0229	214	210.94
		<u>109</u>					
Line No. C6-C5							
	c19	0	250	250	0	214	212.6
	c20	32	250	250	0.128	214	212.472
	c21	30	250	250	0.12	214	212.352
	c22	31	250	250	0.124	214	212.228
	c23	30	250	250	0.12	214	212.108
	c24	30	250	250	0.12	214	211.988
	c25	19.5	250	250	0.078	214	210.815
		<u>181</u>					
Line No. D1-D2							
	d1, sump	0	450.00	575.00	0.00	214.00	212.60
	d2	21.50	450.00	575.00	0.04	214.00	212.56
	d3	27.50	450.00	575.00	0.05	214.00	212.51
	d4	23.00	450.00	575.00	0.04	214.00	212.47

37-D SEWER WATER LINE							
S.N.	LINE NO.	LENGTH OF PIPE	PIPE SIZE	SLOPE	FALL	G.L.	I.L.
		M	MM	1 IN	M	M	M
	d5	23.00	450.00	575.00	0.04	214.00	212.43
	d6	14.50	450.00	575.00	0.03	214.00	212.41
	d7	8.00	450.00	575.00	0.01	214.00	212.40
	d8	14.50	450.00	575.00	0.03	214.00	212.37
	d9	20.50	450.00	575.00	0.04	214.00	212.33
	d10	29.00	450.00	575.00	0.05	214.00	209.57
		<u>182</u>					
Line No. D2-D3							
	d11	24.5	450	575.00	0.0426	214	209.53
	d12	25	450	575.00	0.0435	214	209.48
	d13	25	450	575.00	0.0435	214	209.44
	d14	29	450	575.00	0.0504	214	209.39
	d15	20.00	450	575.00	0.0348	214	209.36
		<u>123.50</u>					
Line No. E1-C3 ✓							
	e1	0	250	200	0	214	212.6
	e2	8.5	250	200	0.0425	214	212.558
	e3	12.5	250	200	0.0625	214	212.495
	e4	9	250	200	0.045	214	212.45
	e5	8.5	250	200	0.0425	214	212.408
	e6	8.5	250	200	0.0425	214	212.365
	e7	12.5	250	200	0.0625	214	212.303
	e8	8.5	250	200	0.0425	214	212.26
	e9	8.5	250	200	0.0425	214	212.218
	e10	9	250	200	0.045	214	212.173
	e11	12.5	250	200	0.0625	214	212.11
	e12	8.5	250	200	0.0425	214	212.068
	e13	6	250	200	0.03	214	212.038
	e14	13	250	200	0.065	214	211.973
	e15	20.5	250	200	0.1025	214	211.87
	c8	23.5	250	200	0.1175	214	211.69
		<u>170</u>					
Line No. G1-G3							
	g1	0.00	200	200	0	214	212.6
	g2	25.00	200	200	0.125	214	212.475
	g3	25.00	200	200	0.125	214	212.35
	g4	25.00	200	200	0.125	214	212.225
	g5	25.00	200	200	0.125	214	212.1
	g6	25.00	200	200	0.125	214	211.975
	g7	25.00	200	200	0.125	214	211.85
	g14	17.50	200	200	0.0875	214	211.763
		<u>167</u>					
Line No. G2-G3							
	g8	0	200	200	0	214	212.6
	g9	25.5	200	200	0.1275	214	212.473
	g10	25.50	200	200	0.1275	214	212.345

37-D SEWER WATER LINE							
S.N.	LINE NO.	LENGTH OF PIPE	PIPE SIZE	SLOPE	FALL	G.L.	I.L.
		M	MM	1 IN	M	M	M
	g11	30.00	200	200	0.15	214	212.195
	g12	26.00	200	200	0.13	214	212.065
	g13	25.00	200	200	0.125	214	211.94
	g14	25.00	200	200	0.125	214	211.763
		<u>157</u>					
Line No. G3-G4							
	g15	30	250	200	0.15	214	211.613
	g16	29.5	250	200	0.1475	214	211.466
	h1	30	250	200	0.15	214	211.316
		<u>89.50</u>					
Line No. G4-G5							
	h2	25.00	250	200	0.125	214	211.191
	h3	25.00	250	200	0.125	214	211.066
	h4	25.00	250	200	0.125	214	210.941
	h5	25.00	250	200	0.125	214	210.816
	h6	25.00	250	200	0.125	214	210.691
	h7	25.00	250	200	0.125	214	210.566
	h8	25.00	250	200	0.125	214	210.441
		<u>175</u>					
Line No. G5-G7							
	h9	25.00	300	200	0.125	214	210.316
	h10	25.00	300	200	0.125	214	210.191
	h11	25.00	300	200	0.125	214	210.066
	h12	25.00	300	200	0.125	214	209.941
	h13	25.00	300	200	0.125	214	209.816
	h14	25.00	300	200	0.125	214	209.691
	h21	23.5	300	200	0.1175	214	209.573
		<u>173</u>					
Line No. G7-D2							
	d10	16	500	675	0.0237	214	209.549
Line No. G6-G7							
	h15	0.00	200	200	0	214	212.6
	h16	25.00	200	200	0.125	214	212.475
	h17	25.00	200	200	0.125	214	212.35
	h18	25.00	200	200	0.125	214	212.225
	h19	25.00	200	200	0.125	214	212.1
	h20	25.00	200	200	0.125	214	211.975
	h21	22.50	200	200	0.1125	214	211.863
		<u>147.50</u>					


 Uma Shanker Sanoria
 Plumbing & Fire Consultant
 (N+U DESIGN STUDIO)
 A-243, Okhla Phase-I
 New Delhi-110020


 Ketan Hinganikar
 Architect
 CA/2006/37536

37-D STORM WATER LINE							
S.No.	LINE NO.	LENGTH OF PIPE	PIPE SIZE	SLOPE	FALL	G.L.	I.L.
		M	MM	1 IN	M	M	M
LINE NO. "A"							
Line No. A1-A2							
	a1	0	400	500	0	214	213
	a2	12	400	500	0.024	214	212.98
	a3	15	400	500	0.03	214	212.95
	a4	15	400	500	0.03	214	212.92
	a5	15	400	500	0.03	214	212.89
	a6	15	400	500	0.03	214	212.86
	a7	15	400	500	0.03	214	212.83
	a8	5	400	500	0.01	214	212.82
	HP	2	400	500	0.004	214	212.77
Line No. A3-A5							
	b1					214	213
	b2	15	400	500	0.03	214	212.97
	b3	15	400	500	0.03	214	212.94
	b4	15	400	500	0.03	214	212.91
	b5	15	400	500	0.03	214	212.88
	b6	15	400	500	0.03	214	212.85
	b7	14.5	400	500	0.029	214	212.821
	b8	14.5	400	500	0.029	214	212.792
	b9	10.5	400	500	0.021	214	212.771
	HP, b10	2	400	500	0.004	214	212.721
	b11	15.5	400	500	0.031	214	212.69
	c10	17	400	500	0.034	214	212.656
Line No. A4-A5							
	c1					214	213
	c2	15.00	400	500	0.03	214	212.97
	c3	15.50	400	500	0.031	214	212.939
	c4	9.50	400	500	0.019	214	212.92
	, HP, c5		400	500	0	214	212.87
	c6	15.00	400	500	0.03	214	212.84
	c7	14.50	400	500	0.029	214	212.811
	c8	14.50	400	500	0.029	214	212.782
	c9	16.00	400	500	0.032	214	212.75
	c10	15.00		500	0.03	214	212.656
Line No. A5-A2							
	c10					214	212.656
	c11	22		500	0.044	214	212.612
	d1	22		500	0.044	214	212.568
Line No. A2-A6							
	d1					214	212.568

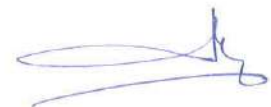
Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase I

Page 50

For N+U Design Studio
Ketan Hinganikar
Architect
CA/2006/37536

37-D STORM WATER LINE							
S.No.	LINE NO.	LENGTH OF PIPE	PIPE SIZE	SLOPE	FALL	G.L.	I.L.
		M	MM	1 IN	M	M	M
	d2	16	400	500	0.032	214	212.536
	d3	16	400	500	0.032	214	212.504
	d4	17	400	500	0.034	214	212.47
	d5	15	400	500	0.03	214	212.44
	d6	16	400	500	0.032	214	212.408
	HP,d7		400	500	0	214	212.358
	d8	11.5	400	500	0.023	214	212.335
	e1	17.5	400	500	0.035	214	212.3
Line No. A6-A7							
	e1					214	212.3
	e2	13.5	400	500	0.027	214	212.273
	e3	11.5	400	500	0.023	214	212.25
	e4	13.5	400	500	0.027	214	212.223
	e5	10.5	400	500	0.021	214	212.202
	HP,e6		400	500	0	214	212.152
	e7	13.5	400	500	0.027	214	212.125
	e8	20.5	400	500	0.041	214	212.084
	e9	19	400	500	0.038	214	212.046
Line No. A6-B2							
	e9					214	212.046
	a8	10	400	500	0.02	214	212.026


 For N+U Design Studio
 Ketan Hinganikar
 Architect
 CA/2006/37536


 Uma Shanker Sanoria
 Plumbing & Fire Consultant
 (N+U DESIGN STUDIO)
 A-242, Gurgaon, India



37-D STORM WATER LINE							
S.No.	LINE NO.	LENGTH OF PIPE	PIPE SIZE	SLOPE	FALL	G.L.	I.L.
		M	MM	1 IN	M	M	M
LINE NO. "B"							
Line No. B1-B2							
	a1					214	213
	a2	18.5	400	500	0.037	214	212.963
	a3	17.5	400	500	0.035	214	212.928
	a4	14	400	500	0.028	214	212.9
	HP,a5		400	500	0	214	212.85
	a6	21	400	500	0.042	214	212.808
	a7	15	400	500	0.03	214	212.778
	a8	19	400	500	0.038	214	212.026
Line No. B2-B3							
	a8					214	212.026
	a9	6.00	400	500	0.012	214	212.014
	HP, a10		400	500	0	214	211.964
	a11	15.00	400	500	0.03	214	211.934
	a12	15.00	400	500	0.03	214	211.904
	a13	15.00	400	500	0.03	214	211.874
	a14	15.00	400	500	0.03	214	211.844
	a15	17.00	400	500	0.034	214	211.81
	a16	5.00	400	500	0.01	214	211.8
	HP,a17		400	500	0	214	211.75
Line No. B3-B4							
	HP, b1					214	211.7
	b2	8.5	400	500	0.017	214	211.683
	b3	16	400	500	0.032	214	211.651
	b4	18.5	400	500	0.037	214	211.614
	b5	9	400	500	0.018	214	211.596
Line No. B4-B5							
	HP,b6					214	211.546
	b7	18.50	400	500	0.037	214	211.509
	b8	14.50	400	500	0.029	214	211.48
	b9	16.50	400	500	0.033	214	211.447
	b10	16.50	400	500	0.033	214	211.414
Line No. B5-B7							
	HP,c1					214	211.364
	c2	9	400	500	0.018	214	211.346
	c3	16	400	500	0.032	214	211.314
	c4	11.5	400	500	0.023	214	211.291
	c5	13	400	500	0.026	214	211.265
	c6	12.5	400	500	0.025	214	211.24

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243 Okhla Phase-I

[Signature]

[Signature]

[Signature]

For N+U Design Studio
Ketan Hinganikar
Architect
CA/2006/37

37-D STORM WATER LINE							
S.No.	LINE NO.	LENGTH OF PIPE	PIPE SIZE	SLOPE	FALL	G.L.	I.L.
		M	MM	1 IN	M	M	M
	c7	11.5	400	500	0.023	214	211.217
	c8	10.5	400	500	0.021	214	211.196
	c9	13	400	500	0.026	214	211.17
	HP, c10			500	0	214	211.12
	c11	10	400	500	0.02	214	211.1
	c12	11	400	500	0.022	214	211.078
	c12, HP, d9	2	400	500	0.004	214	211.074
	TO HUDA DRAIN	10	400	500	0.02	214	211.054
Line No. B6-B7							
	d1					214	213
	d2	18.50	400	500	0.037	214	212.963
	d3	16.00	400	500	0.032	214	212.931
	d3 HP, d4			500	0	214	212.881
	d5	12.00	400	500	0.024	214	212.857
	d6	19.50	400	500	0.039	214	212.818
	d7	12.00	400	500	0.024	214	212.794
	d8	12.00	400	500	0.024	214	212.77
	d8, HP, d9	2.00	400	500	0.004	214	211.074

Amil

Ketan Hinganikar
 For N+U Design Studio
 Ketan Hinganikar
 Architect
 CA/2006/37536

Uma Shanker Sanoria

Uma Shanker Sanoria
 Plumbing & Fire Consultant
 (N+U DESIGN STUDIO)
 A-243, Okhla Phase-I
 New Delhi-110020

37-D STORM WATER LINE							
S.No.	LINE NO.	LENGTH OF PIPE	PIPE SIZE	SLOPE	FALL	G.L.	I.L.
		M	MM	1 IN	M	M	M
LINE NO. "C"							
Line No. C1-C2							
	a1					214	213
	a2	13	400	500	0.026	214	212.974
	a3	15	400	500	0.03	214	212.944
	a4	19.5	400	500	0.039	214	212.905
	a4,HP, a5	2	400	500	0.004	214	212.901
	a6	18.5	400	500	0.037	214	212.851
	a7	17.5	400	500	0.035	214	212.816
	a8	15.5	400	500	0.031	214	212.785
	a9	15	400	500	0.03	214	212.755
	a10	15	400	500	0.03	214	212.725
	a11	15.5	400	500	0.031	214	212.694
	a12	13.50	400	500	0.027	214	212.667
	a12,HP,b1	2.00	400	500	0.004	214	212.617
Line No. C2-C3							
	a12,HP,b1	2				214	212.617
	b2	14.5	400	500	0.029	214	212.588
	b3	15	400	500	0.03	214	212.558
	b4	15.5	400	500	0.031	214	212.527
	b5	15	400	500	0.03	214	212.497
	b6	15	400	500	0.03	214	212.467
	b7	12.5	400	500	0.025	214	212.442
	b7,HP,b8	2	400	500	0.004	214	212.392
	b8,HP,b9	2	400	500	0.004	214	212.342
	b10	9.5	400	500	0.019	214	212.323
	b11	15	400	500	0.03	214	212.293
	b12	12	400	500	0.024	214	212.269
	b13	5	400	500	0.01	214	212.259
	b13,HP,b14	2	400	500	0.004	214	212.209
	b14,c1	7	400	500	0.014	214	212.195
Line No. C4-C5							
	d1					214	213
	d2	15	400	500	0.03	214	212.97
	d3	15	400	500	0.03	214	212.94
	d3,HP,d4	2	400	500	0.004	214	212.89
	d5	8.50	400	500	0.017	214	212.873
	d6	15.00	400	500	0.03	214	212.843
	d7	15.00	400	500	0.03	214	212.813
	d8	14.50	400	500	0.029	214	212.784
	d9	9.00	400	500	0.018	214	212.766
	d9,HP,d10	2.00	400	500	0.004	214	212.716
	c13	10.00	400	500	0.02	214	211.753

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi

Page 54

Archi Hinganikar

For N+U Design Studio
Ketan Hinganikar
Architect
CA/2006/37533

37-D STORM WATER LINE							
S.No.	LINE NO.	LENGTH OF PIPE	PIPE SIZE	SLOPE	FALL	G.L.	I.L.
		M	MM	1 IN	M	M	M
Line No. C3-C5							
	c1,HP,c2	2.00				214	212.195
	c3	8.00	400	500	0.016	214	212.179
	c4	13.50	400	500	0.027	214	212.152
	c5	15.50	400	500	0.031	214	212.121
	c6	9.00	400	500	0.018	214	212.103
	c6,HP,c7	2.00	400	500	0.004	214	212.053
	c8	15.00	400	500	0.03	214	212.003
	c9	16.00	400	500	0.032	214	211.953
	c10	15.50	400	500	0.031	214	211.903
	c11	15.00	400	500	0.03	214	211.853
	c12	12.50	400	500	0.025	214	211.803
	c12,HP,c13	2.00	400	500	0.004	214	211.753
	TO HUDA DRAIN	10.00	400	500	0.02	214	211.703

Shil

Hinganikar

For N+U Design Studio
Ketan Hinganikar
Architect
CA/2006/37536

Uma Shanker Sanoria

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi 110020

37-D STORM WATER LINE							
S.No.	LINE NO.	LENGTH OF PIPE	PIPE SIZE	SLOPE	FALL	G.L.	I.L.
		M	MM	1 IN	M	M	M
LINE NO. "D"							
Line No. D1-D2							
	a1					214	213
	a2	12	400	500	0.024	214	212.976
	a3	13.5	400	500	0.027	214	212.949
	a4	12.5	400	500	0.025	214	212.924
	a5	12.5	400	500	0.025	214	212.899
	a6	15.5	400	500	0.031	214	212.868
	a7	10	400	500	0.02	214	212.848
	a7,HP,b1		400	500	0	214	212.798
Line No. D2-D3							
	b1					214	212.798
	b2	15	400	500	0.03	214	212.768
	b3	19	400	500	0.038	214	212.73
	b4	15	400	500	0.03	214	212.7
	b5	20	400	500	0.04	214	212.66
	b6	20	400	500	0.04	214	212.62
	b6,HP,c1		400	500	0	214	212.62
Line No. D3-D4							
	c1					214	212.62
	c2	12.50	400	500	0.025	214	212.595
	c3	14.50	400	500	0.029	214	212.566
	c4	15.00	400	500	0.03	214	212.536
	c5	15.00	400	500	0.03	214	212.506
	c6	15.00	400	500	0.03	214	212.476
	c7	15.00	400	500	0.03	214	212.446
	c8	14.00	400	500	0.028	214	212.418
	c8,HP,d1		400	500	0	214	212.418
Line No. D4-E5							
	d1					214	212.418
	d2	13.00	400	500	0.026	214	212.392
	d3	15.50	400	500	0.031	214	212.361
	d4	14.50	400	500	0.029	214	212.332
	d5	15.00	400	500	0.03	214	212.302
	d6	15.00	400	500	0.03	214	212.272
	d7	15.00	400	500	0.03	214	212.242
	c7,HP		400	500	0	214	212.242

Amil

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-27

Hinganikar

For N+U Design Studio
Ketan Hinganikar
Architect
CA/2006/37635

[Signature]

37-D STORM WATER LINE							
S.No.	LINE NO.	LENGTH OF PIPE	PIPE SIZE	SLOPE	FALL	G.L.	I.L.
		M	MM	1 IN	M	M	M
LINE NO. "E"							
Line No. E1-E2							
	a1					214	213
	a2	16.00	400	500	0.032	214	212.968
	a3	15.50	400	500	0.031	214	212.937
	a4	15.50	400	500	0.031	214	212.906
	a5	12.50	400	500	0.025	214	212.881
	a6	14.00	400	500	0.028	214	212.853
	a7	12.50	400	500	0.025	214	212.828
	a7,HP,a8			500	0	214	212.778
	a9	16.00	400	500	0.032	214	212.746
	a10	15.00	400	500	0.03	214	212.716
	a11	16.00	400	500	0.032	214	212.684
	a12	16.50	400	500	0.033	214	212.651
	a13	15.50	400	500	0.031	214	212.62
	a13,HP,b1		400	500	0	214	212.57
Line No. E2-E3							
	a13,HP,b1					214	212.57
	b2	15.00	400	500	0.03	214	212.54
	b3	15.00	400	500	0.03	214	212.51
	b4	15.00	400	500	0.03	214	212.48
	b5	15.00	400	500	0.03	214	212.45
	b6	8.00	400	500	0.016	214	212.434
	b6,HP,b7			500	0	214	212.384
	b8	15.00	400	500	0.03	214	212.354
	b9	15.00	400	500	0.03	214	212.324
	b10	15.00	400	500	0.03	214	212.294
	b11	15.00	400	500	0.03	214	212.264
	b12	8.00	400	500	0.016	214	212.248
	b12,HP,c1		400	500	0	214	212.198
Line No. E3-E4							
	b12,HP,c1					214	212.198
	c2	16	400	500	0.032	214	212.166
	c3	15	400	500	0.03	214	212.136
	c4	15	400	500	0.03	214	212.106
	c5	15.5	400	500	0.031	214	212.075
	c6	15	400	500	0.03	214	212.045
	c7,HP,e1	9.5	400	500	0.019	214	211.995
Line No. E4-E5							
	e1					214	211.995
	e2	15.5	400	500	0.031	214	211.964
	e3	15.5	400	500	0.031	214	211.933

Uma Shanker Samra
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

Ketan Hinganikar
For N+U Design Studio
Ketan Hinganikar
Architect
CA/2006/37533

37-D STORM WATER LINE							
S.No.	LINE NO.	LENGTH OF PIPE	PIPE SIZE	SLOPE	FALL	G.L.	I.L.
		M	MM	1 IN	M	M	M
	e4	15	400	500	0.03	214	211.903
	e5	15	400	500	0.03	214	211.873
	e6	15	400	500	0.03	214	211.843
	e7	15.5	400	500	0.031	214	211.812
	e8	17.5	400	500	0.035	214	211.777
	HP,e9		400			214	211.727
LINE NO. "F"							
Line No. F1-F2							
	a1					214	213.4
	a2	15	400	500	0.03	214	213.37
	a3	15	400	500	0.03	214	213.34
	a4	15	400	500	0.03	214	213.31
	a5	15	400	500	0.03	214	213.28
	a6	15	400	500	0.03	214	213.25
	a7	15	400	500	0.03	214	213.22
	a8	15	400	500	0.03	214	213.19
	a9	15	400	500	0.03	214	213.16
	a9,HP,b1	2	400	500	0.004	214	213.11
Line No. F2-F3							
	b1					214	213.11
	b2	15	400	500	0.03	214	213.08
	b3	15	400	500	0.03	214	213.05
	b4	15	400	500	0.03	214	213.02
	b5	15	400	500	0.03	214	212.99
	b6	15	400	500	0.03	214	212.96
	b7	15	400	500	0.03	214	212.93
	b8	15	400	500	0.03	214	212.926
	b9	15	400	500	0.03	214	212.896
	b9,HP,c1	2	400	500	0.004	214	212.846
Line No.F3-D4							
	c1					214	212.846
	c2	16	400	500	0.032	214	212.814
	c3	18	400	500	0.036	214	212.778
	c4	15	400	500	0.03	214	212.748
	c5	15	400	500	0.03	214	212.718
	c6	15	400	500	0.03	214	212.688
	c7	15	400	500	0.03	214	212.658
	c8	15	400	500	0.03	214	212.628
	c9	15	400	500	0.03	214	212.598
	c10	15	400	500	0.03	214	212.568
	c11	15	400	500	0.03	214	212.538
	c12	15	400	500	0.03	214	212.508
	c13	15	400	500	0.03	214	212.478
	HP, d1		400			214	212.418

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110024

Page 58

For N+U Design Studio
Ketan Hinganikar
Architect
CA/2006/37533

37-D STORM WATER LINE							
S.No.	LINE NO.	LENGTH OF PIPE	PIPE SIZE	SLOPE	FALL	G.L.	I.L.
		M	MM	1 IN	M	M	M
LINE NO. "G"							
Line No.G1-G2							
	a1					214	213
	a2	15	400	500	0.03	214	212.97
	a3	15	400	500	0.03	214	212.94
	a4	15	400	500	0.03	214	212.91
	HP,a5	2	400	500	0.004	214	212.86
	a6	16	400	500	0.032	214	212.828
	a7	21	400	500	0.042	214	212.786
	a8	15	400	500	0.03	214	212.756
	a9	16	400	500	0.032	214	212.724
	a10	15	400	500	0.03	214	212.694
	HP,b7	2	400	500	0.004	214	212.644
	HP,c1	2	400	500	0.004	214	212.594
Line No.G3-G2							
	b1					214	213
	b2	15	400	500	0.03	214	212.97
	b3	15	400	500	0.03	214	212.94
	b4	15	400	500	0.03	214	212.91
	b5	15	400	500	0.03	214	212.88
	b6	15	400	500	0.03	214	212.85
	b7	16	400	500	0.032	214	212.818
	HP,a10	2	400	500	0.004	214	212.694
	HP,c1	2	400	500	0.004	214	212.594
Line No.G2-G4							
	c1					214	212.594
	c2	15	400	500	0.03	214	212.564
	c3	15	400	500	0.03	214	212.534
	c4	15	400	500	0.03	214	212.504
	c5	15	400	500	0.03	214	212.474
	c6	15	400	500	0.03	214	212.444

Amil

Hinganikar

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase I

For N+U Design Studio
Ketan Hinganikar
Architect
CA/2006/37533

[Signature]

DETAIL OF ROAD AREAS, KERBS & PAVED AREAS

ABSTRACT OF ROAD AREAS

INTERNAL ROADS

SR. NO.	NAME OF ROAD	WIDTH OF ROAD (Meters)	WIDTH OF METALLED PORTION (Meters)	LENGTH OF ROAD (Meters)	AREA UNDER METALLED ROAD (Sq. Meters)
1	AR1 - AR2	12.0 ✓	7.5	21.00 ✓	157.50
2	AR2 - AR19 - AR20 - AR3	12.0 ✓	7.5	28.52 ✓	213.9
3	AR3 - AR4	12.0 ✓	7.5	22.47 ✓	168.53
4	AR5 - AR6	18.0 ✓	17.0	44.71 ✓	760.07
5	AR6 - AR7	13.5 ✓	9.0	77.61 ✓	698.49
6	AR7 - AR8	13.5 ✓	9.0	44.59 ✓	401.31
7	AR8 - AR9	13.5 ✓	9.0	110.41 ✓	993.69
8	AR9 - AR10	9.0	7.5	69.50 ✓	521.25
9	AR10 - AR11	9.0	7.5	141.61 ✓	1062.075
10	AR11 - AR12	9.0	7.5	73.34 ✓	550.05
11	AR12 - AR13	9.0	7.5	53.85 ✓	403.88
12	AR13 - AR14	13.5 ✓	9.0	78.91 ✓	710.19
13	AR14 - AR15	13.5 ✓	9.0	30.22 ✓	271.98
14	AR15 - AR16	18.0 ✓	17.0	119.94 ✓	2038.98
15	AR16 - AR17	18.0 ✓	17.0	35.50 ✓	603.50
16	AR17 - AR18	18.0 ✓	17.0	153.69 ✓	2612.73
17	AR19 - AR6 - AR18 - AR20	18.0 ✓	17.0	86.38 ✓	1468.46
18	AR21 - AR22	7.5	6.0	136.59 ✓	819.54
19	AR22 - AR23	7.5	6.0	92.00 ✓	552.00
20	AR23 - AR24	7.5	6.0	186.93 ✓	1121.58
21	AR25 - AR26	13.5 ✓	9.0	94.04 ✓	846.36
22	AR27 - AR28	15.0 ✓	13.5	33.50 ✓	452.25
23	AR29 - AR30	6.0	6.0	41.51 ✓	249.06
24	AR31 - AR32	6.0	6.0	41.70 ✓	250.20
25	AR 33 - AR34	6.0	6.0	8.95 ✓	53.70
26	AR34 - AR35	6.0	6.0	51.50 ✓	309.00
27	AR35 - AR36	6.0	6.0	8.95 ✓	53.70
28	AR37 - AR38	7.5	6.0	9.25 ✓	55.50
29	AR38 - AR39	7.5	6.0	92.00 ✓	552.00
30	AR39 - AR40	7.5	6.0	9.25 ✓	55.50
31	SR1 - SR2	13.5 ✓	9.0	6.86 ✓	61.74
32	SR2 - SR3	13.5 ✓	9.0	43.56 ✓	392.04
33	SR3 - SR4	13.5 ✓	9.0	13.75 ✓	123.75
34	SR4 - SR32 - SR33 - SR5	13.5 ✓	9.0	190.38 ✓	1713.42
35	SR5 - SR6	13.5 ✓	9.0	83.28 ✓	749.52
36	SR6 - SR7	13.5 ✓	9.0	145.88 ✓	1312.92
37	SR7 - SR8	13.5 ✓	9.0	23.68 ✓	213.12
38	SR8 - SR37 - SR43 - SR4 - SR9	13.5 ✓	9.0	250.22 ✓	2251.98
39	SR9 - SR10	13.5 ✓	9.0	93.70 ✓	843.30
40	SR10 - SR11	15.0 ✓	13.5	25.47 ✓	343.85
41	SR11 - SR12	9.0	7.5	13.34 ✓	100.05
42	SR12 - SR13	9.0	7.5	32.26 ✓	241.95
43	SR13 - SR14	9.0	7.5	1.89 ✓	14.18
44	SR14 - SR15	9.0	7.5	23.31 ✓	174.83
45	SR15 - SR16	9.0	7.5	10.02 ✓	75.15
46	SR16 - SR17	9.0	7.5	9.69 ✓	72.68
47	SR17 - SR18	9.0	7.5	39.24 ✓	294.30
48	SR18 - SR19	9.0	7.5	19.54 ✓	146.55
49	SR19 - SR20	9.0	7.5	12.16 ✓	91.20
50	SR20 - SR21	9.0	7.5	8.68 ✓	65.10
51	SR22 - SR52	13.5 ✓	9.0	247.28 ✓	2225.52
52	SR22 - SR23 - SR1	18.0 ✓	17.0	338.98 ✓	5762.66

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi-110020

Page 60

Ketan Hinganikar
For N+U Design Studio
Ketan Hinganikar
Architect
CA/2006/37536

53	SR23 - SR24	15.0 ✓	13.5	47.51 ✓	641.39
54	SR24 - SR25	15.0 ✓	13.5	42.07 ✓	567.95
55	SR25 - SR26	15.0 ✓	13.5	35.56 ✓	480.06
56	SR26 - SR11	15.0 ✓	13.5	16.14 ✓	217.89
57	SR27 - SR28	13.5	9.0	110.66 ✓	995.94
58	SR29 - SR30	6.0	6.0	27.52 ✓	165.12
59	SR30 - SR31	6.0	6.0	11.78 ✓	70.68
60	SR31 - SR32	6.0	6.0	9.72 ✓	58.32
61	SR33 - SR34	6.0	6.0	10.13 ✓	60.78
62	SR34 - SR35	6.0	6.0	11.75 ✓	70.50
63	SR35 - SR36	6.0	6.0	19.49 ✓	116.94
64	SR37 - SR38	6.0	6.0	9.95 ✓	59.70
65	SR38 - SR39	6.0	6.0	10.39 ✓	62.34
66	SR39 - SR40	6.0	6.0	24.23 ✓	145.38
67	SR40 - SR41	6.0	6.0	9.42 ✓	56.52
68	SR41 - SR42	6.0	6.0	3.24 ✓	19.44
69	SR42 - SR43	6.0	6.0	10.17 ✓	61.02
70	SR44 - SR45	6.0	6.0	14.97 ✓	89.82
71	SR45 - SR46	6.0	6.0	9.42 ✓	56.52
72	SR46 - SR47	6.0	6.0	15.62 ✓	93.72
73	SR47 - SR48	6.0	6.0	9.84 ✓	59.04
74	SR48 - SR9	6.0	6.0	16.94 ✓	101.64
75	SR49 - SR50	7.5	6.0	94.26 ✓	565.56
76	SR51 - SR52	7.5	6.0	11.46 ✓	68.76
TOTAL				4213.83	41161.78

SUMMARY OF ROAD AREAS

	WIDTH OF ROAD (Meters)	WIDTH OF METALLED PORTION (Meters)	LENGTH OF ROAD (Meters)	AREA UNDER METALLED ROAD (Sq. Meters)
TOTAL OF 18.0 M WIDE ROAD	18.0	17.0 10	779.20 ✓	13246.40
TOTAL OF 15.0 M WIDE ROAD	15.0	13.5 10	200.25 ✓	2703.38
TOTAL OF 13.5 M WIDE ROAD	13.5	9.0 10	1645.03 ✓	14805.27
TOTAL OF 12 M WIDE ROAD	12.0	7.5 5.50	71.99 ✓	539.93
TOTAL OF 9.0 M WIDE ROAD	9.0	7.5 3.67	508.43 ✓	3813.23
TOTAL OF 7.5 M WIDE ROAD	7.5	6.0 3.67	631.74 ✓	3790.44
TOTAL OF 6.0 M WIDE ROAD	6.0	6.0 ✓	377.19 ✓	2263.14
GRAND TOTAL ALL ROAD	-	-	4213.83 ✓	41161.78
SAY			4220.00 ✓	41170.00

7792.59m.
2002.50 59m
16450.30 59m
395.94 59m
1865.93 59m
4738.05 59m
33244.72 59m
Say 33250 59m

ABSTRACT OF ROAD KERBS

	ROAD LENGTH	KERB LENGTH
TOTAL LENGTH OF KERB (KERB LENGTH= TWICE OF LENGTH OF ROAD)	4213.83	8427.66 ✓
Say	4220	8430 ✓

Shankar

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)

Hinganikar

For N+U Design Studio
Ketan Hinganikar
Architect
CA/2006/37536

ABSTRACT OF PAVED AREAS

PAVED PATHWAYS (EXTERNAL POCKETS)

SR. NO.	NAME OF PATHWAY	WIDTH OF PATHWAY (Meters)	WIDTH OF PAVED PORTION (Meters)	LENGTH OF PATHWAY (Meters)	AREA UNDER PATHWAY (Sq. Meters)
1	AR1 - AR2	12.0	4.5	21.00	94.50
2	AR2 - AR19 - AR20 - AR3	12.0	4.5	28.52	128.34
3	AR3 - AR4	12.0	4.5	22.47	101.115
4	AR5 - AR6	18.0	1.0	44.71	44.71
5	AR6 - AR7	13.5	4.5	77.61	349.245
6	AR7 - AR8	13.5	4.5	44.59	200.655
7	AR8 - AR9	13.5	4.5	110.41	496.845
8	AR9 - AR10	9.0	1.5	69.50	104.25
9	AR10 - AR11	9.0	1.5	141.61	212.415
10	AR11 - AR12	9.0	1.5	73.34	110.01
11	AR12 - AR13	9.0	1.5	53.85	80.775
12	AR13 - AR14	13.5	4.5	78.91	355.095
13	AR14 - AR15	13.5	4.5	30.22	135.99
14	AR15 - AR16	18.0	1.0	119.94	119.94
15	AR16 - AR17	18.0	1.0	35.50	35.5
16	AR17 - AR18	18.0	1.0	153.69	153.69
17	AR19 - AR6 - AR18 - AR20	18.0	1.0	86.38	86.38
18	AR25 - AR26	13.5	4.5	94.04	423.18
19	AR27 - AR28	15.0	1.5	33.50	50.25
20	SR1 - SR2	13.5	4.5	6.86	30.87
21	SR2 - SR3	13.5	4.5	43.56	196.02
22	SR3 - SR4	13.5	4.5	13.75	61.875
23	SR4 - SR32 - SR33 - SR5	13.5	4.5	190.38	856.71
24	SR5 - SR6	13.5	4.5	83.28	374.76
25	SR6 - SR7	13.5	4.5	145.88	656.46
26	SR7 - SR8	13.5	4.5	23.68	106.56

Shil

Hinganika
For N+U Design Studio
Ketan Hinganika
Architect
CA/2006/37536

Sh
New Delhi-110020
A-243, Okhla Phase-I
(N+U DESIGN STUDIO)
Plumbing & Fire Consultant
Uma Shanker Sanoria

27	SR8 - SR37 - SR43 - SR4 - SR9	13.5	4.5	250.22	1125.99
28	SR9 - SR10	13.5	4.5	93.70	421.65
29	SR10 - SR11	15.0	1.5	25.47	38.205
30	SR11 - SR12	9.0	1.5	13.34	20.01
31	SR12 - SR13	9.0	1.5	32.26	48.39
32	SR13 - SR14	9.0	1.5	1.89	2.835
33	SR14 - SR15	9.0	1.5	23.31	34.965
34	SR15 - SR16	9.0	1.5	10.02	15.03
35	SR16 - SR17	9.0	1.5	9.69	14.535
36	SR17 - SR18	9.0	1.5	39.24	58.86
37	SR18 - SR19	9.0	1.5	19.54	29.31
38	SR19 - SR20	9.0	1.5	12.16	18.24
39	SR20 - SR21	9.0	1.5	8.68	13.02
40	SR22 - SR52	13.5	4.5	247.28	1112.76
41	SR22 - SR23 - SR1	18.0	1.0	338.98	338.98
42	SR23 - SR24	15.0	1.5	47.51	71.265
43	SR24 - SR25	15.0	1.5	42.07	63.105
44	SR25 - SR26	15.0	1.5	35.56	53.34
45	SR26 - SR11	15.0	1.5	16.14	24.21
46	SR27 - SR28	13.5	4.5	110.66	497.97
47	SR49 - SR50	7.5	1.5	94.26	141.39
48	SR51 - SR52	7.5	1.5	11.46	17.19
TOTAL				3310.62	9727.39

PAVED PATHWAYS (INTERNAL POCKETS)

SR. NO.	NAME OF PATHWAY	WIDTH OF PATHWAY (Meters)	LENGTH OF PATHWAY (Meters)	AREA UNDER PATHWAY (Sq. Meters)
1	AP1 - AP2	6.0	22.30	133.80
2	AP3 - AP4	6.0	9.15	54.9
3	AP4 - AP5	6.0	156.96	941.76
4	AP5 - AP6	6.0	17	102
5	AP6 - AP7	6.0	52.62	315.72
6	AP7 - AP8	6.0	78.75	472.5
7	AP8 - AP9	6.0	1.25	7.5
8	AP9 - AP10	6.0	12.56	75.36
9	AP10 - AP11	6.0	32.99	197.94
10	AP11 - AP12	6.0	1.23	7.38
11	AP12 - AP13	6.0	50.12	300.72
12	AP13 - AP14	6.0	4.94	29.64
13	AP14 - AP3	6.0	69.97	419.82
14	AP15 - AP16	6.0	29.34	176.04
15	AP17 - AP18	6.0	36.63	219.78
16	AP19 - AP20	6.0	22.38	134.28
17	AP21 - AP22	6.0	13.62	81.72
18	AP23 - AP24	6.0	13.7	82.2
19	AP24 - AP25	6.0	55.02	330.12
20	AP25 - AP26	6.0	22.54	135.24
21	AP26 - AP27	6.0	5.21	31.26
22	AP27 - AP28	6.0	14.13	84.78
23	AP28 - AP23	6.0	31.36	188.16
24	AP29 - AP30	6.0	12.62	75.72
25	SP1 - SP2	6.0	38.66	231.96
26	SP2 - SP3	6.0	9.83	58.98
27	SP3 - SP4	6.0	63.67	382.02
28	SP4 - SP5	6.0	50.78	304.68
29	SP5 - SP6	6.0	26.83	160.98
30	SP6 - SP7	6.0	50.78	304.68
TOTAL OF PAVED PATHWAYS		6.0	1006.94	6041.64

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)
A-243, Okhla Phase-I
New Delhi 110020

Handwritten signature

For N+U Design Studio
Ketan Hinganikar
Architect
CA/2006/37536

PAVED DROP OFFS TO TOWER & OTHER BUILDING ENTRIES

SR. NO.	NAME OF POCKET	NO. OF BLDGS / TOWERS	AREA OF EACH DROP-OFF (10 M X 5 M)	AREA
1	POCKET- A	20	50.00	1000.00
2	POCKET- S	20	50.00	1000.00
TOTAL OF PAVED DROP-OFFS		40.0	-	2000.00

PAVED CAR PARKING AREAS

SR. NO.	NAME OF POCKET	NO. OF CARS	AREA OF EACH CAR (5M X 2.5 M)	AREA
1	POCKET- A	392	12.50	4900.00
2	POCKET- S	90	12.50	1125.00
TOTAL OF PAVED PARKING AREAS		482.0	-	6025.00

SUMMARY OF PAVED AREAS

	AREA	SAY
TOTAL OF PAVED PATHWAYS (EXTERNAL ROADS)	9727.39	9730
TOTAL OF PAVED PATHWAYS (INTERNAL POCKETS)	6041.64	6050
TOTAL OF PAVED DROP-OFFS	2000.00	2000
TOTAL OF PAVED PARKING AREAS	6025.00	6030
GRAND TOTAL ALL PAVED AREAS	23794.03	23810

Avit

Hinganikar

For N+U Design Studio
Ketan Hinganikar
Architect
CA/2006/37536

Uma Shanker Sanoria

Uma Shanker Sanoria
Plumbing & Fire Consultant
(N+U DESIGN STUDIO)