PROPOSAL FOR AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DEEN DAYAL JAN AWAS YOJNA ON AN AREA MEASURING 7.89375 ACRES FALLING SECTOR-33, VILLAGE-DHUNELA, TEHSIL-SOHNA, DISTRICT-

SERVICE PLAN ESTIMATE FOR PUBLIC HEALTH ENGINEERING SERVICES WORK

Client

GLOBAL HORIZON HOLDING PVT. LTD.

Architect

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REPORT

ESTIMATE FOR PROVIDING WATER SUPPLY, SEWERAGE, STORM WATER DRAINAGE, ROADS, STREET LIGHTING AND HORTICULTURE IN RESPECT OF PROPOSED LAYOUT CUM DEMARCATION PLAN OF AFFORDABLE PLOTTED COLONY ON AN AREA MEASURING 7.89375 ACRES FALLING SECTOR-33, GURGAON, HARYANA.

Gurgaon, officially named Gurugram, is a city located in the northern Indian state of Haryana. It is situated near the Delhi-Haryana border, about 30 kilometres (19 mi) southwest of the national capital New Delhi and 268 km (167 mi) south of Chandigarh, the state capital.[3] It is one of the major satellite cities of Delhi and is part of the National Capital Region of India.[4] As of 2011, Gurgaon had a population of 876,900.[1]

Gurgaon has become a leading financial and industrial hub with the third-highest per capita income in India.[5] The city's economic growth story started when the leading Indian automobile manufacturer Maruti Suzuki India Limited established a manufacturing plant in Gurgaon in the 1970s.[6] Today, Gurgaon has local offices for more than 250 Fortune 500 companies.[7] Gurgaon is categorised as very high on the Human Development Index, with an HDI of 0.889 (2017), which is also the highest in India. [8]

In March 2019, Gurgaon was named the most polluted city in the world, according to data released by IQ Air Visual and Greenpeace.[9][10]

WATER SUPPLY

At present there is no water supply avilable from HUDA in this area. It has been proposed to construct the under ground tanks of capacity as per attached details, and at location for domestic purpose and for fire protection. The underground tanks will be fed from tanker supply till we get supply connection from HUDA, which will feed overhead tanks on the roof of the buildings. The water supply system has been designed as per Hazen Williams formula.

DESIGN

The scheme has been designed for population of approx. 2800 persons for Housing. The rate of water supply per head / day has been taken as 127.5+45 (=172.5 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

It has been proposed to install pumping set as described with standby of equal capacity. The provision for standby generating set has also been provided in case of any electricity failure.

UNDERGROUND STORAGE TANK

Underground storage tank provision has been made in two compartments.

BOOSTING STATION

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

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DISTRIBUTION SYSTEM

The distribution system for this development has been designed to supply @ 127.5+45 = 172.5 liter per head per day @ 3 times the average rate of flow on Hazen William formula. Necessary provisiton for laying uPVC pipes confirming to relevant IS standard along with valves and special has been made in the project. THe minimumterminal head at any point will be more than 40 Mtrs. so that it can be serve the S+4 floors construction envisaged in the plan. Minimum pipe dia. for distribuiton is kept as 25 mm dia.

RISING MAIN

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

SEWERAGE SCHEME

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

The sewer lines have been designed for three times average D.W.F. in relation to water supply demand. It has been assumed that about 80% of the domestic water supply shall find its way into the proposed sewer. Sewer lines shall be laid to a gradient maintaining minimum 2.46 ft/sec self cleaning velocity. Necessary provision for laying PVC SN4 pipe (IS: 16098 PART -II SN-4) sewer line, construction of required number of manholes

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 40mm per hour. A minimum size of 200 mm dia NP3 pipe & maximum 700mm dia NP3 pipe storm water pipe will be provided and designed as per Manning's formula.

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 raods in the colony have been planned as minimum ~~6~~ 5.50 metalled width M wide. Cost of the road has been taken in the estimate.

STREETLIGHTING

Provision of lighting on surrounding area has been made.

HORTICULTURE

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

RATES

The estimate for providing services in this site has been prepared on the recent HUDA/Market rates.

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COST

The total cost of the scheme, including cost of all services works out to Rs ~~547.69~~ 684.30 Lacs Including 3% contingencies and 49% departmental charges, price escalation & other unforseen charges. Cost per acres = Rs. ~~69.36~~ 86.69 Lakh per Gross Acre

0

For Global Horizon Holdings Pvt. Ltd.

Authorised Signatory

(Authorized Signatory)

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WATER DEMAND CALCULATION

S. No.	Description	Total Popula-tion	Domestic Water		Flushing Water		Gross Water
			LPCD	LPD	LPCD	LPD	LPD
1	No. of plot = 140 13.5 people per plot	1890	127.5	240975	45	85050.00	326025
2	For commercial Water requirement for approximately 412people @ 3 sqm per person for 1235.170 sqm area	~~412~~ 0.3052 Acre	~~25~~	~~10300~~ 7227.60 @ 32000 Ltr/Acre	~~20~~	~~8240.00~~ 2539.43	~~18540~~ 9767.04
2.1	For commercial Water requirement for staff	~~41~~	~~5~~	~~205~~	~~10~~	~~410.00~~	~~615~~
2.2	Maintenance Staff (Such as Gardener, ESS Staff, Security Guards etc.)	10	25	250	20	200.00	450
2.3	Back Wash Filters - L.S.			10000		0.00	10000
3	For Community Water requirement for approximately 320people @ 10 sqm per person for 3194.525 sqm area	~~320~~ 0.789 Acre	~~5~~ @ 25000 Ltr/Acre	14596 ~~1600~~ 273048.6	~~10~~	5129.0 ~~3200.00~~ 92918.43	19725 Ltr ~~4800~~ 365967
	Total			~~263330~~		~~97100~~	~~360430~~
	SAY			~~263~~ KLD		~~97~~ 93 KLD	~~360~~ 366.0 KLD

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4	**Horticulture & Road side plantion**			
a)	**Area under Green area 2675 sqmt. @ 6 Liters / sqmt.**	=	16050	Liters/day
	Total	=	**16050**	**Liters/day**
	Or Say	=	**16000**	**Liters/day**
	Domestic water demand	=	**263000**	**Liters/day**
	Flushing water demand	=	**93000**	**Liters/day**
	Irrigation demand	=	**16050**	**Liters/day**
	Sewage Treatment Plant Capacity			
	Average Sewerage Contribution Considering 80% of AV domestic water demand & 90% of AV/Flushing demand	=	0.8x263+0.9x93=~~210.4+87.~~ 218.40+83.70 = ~~297.7~~ 302.10 KLD / 3	
	Sewage Treatment Plant Capacity (KLD)	=	**300KLD**	
	Or Say	=	**300KLD**	
	Sewage scheme			
	Peak discharge @3 times of sewage discharge plus sub soil infiltration @ 10% of total water demand	=	**0.294**	**Cusces**
		=	**8.348**	**LPS**
	Hence 200 mm dia pipe having design cpacity 0.473cusces is sufficient to carry the above discharge			

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Storage req. for fire demand = $100\times\sqrt{1.89}\times 1/3 = 45.82$ KLD

Say 100 KLD

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(I)		**Under Ground Water Tanks**			
	a)	Total Domestic Water Demand	=	273000	Liters/day
		~~Storage (One day)~~ Capacity of UGT taking storage	=	163.8 ~~263.00~~	KLD
		~~Or Say~~ 25+33 = 58%. Say 60% of daily demand	=	~~263.00~~ 200.0	KLD
		it is proposed to construct an underground tank of ~~263~~ 300 KLD having ~~131.5 KLD for treated water, 131.5 KLD as raw water~~ in two compartment which also incl. tank for fire fighting as well. the water enters the Fire Fighting Compartment and then enters the drinking water supply compartment to keep the water fresh in the fire fighting compartment			
	a)	For Under Ground Tank (Transfer pump)			
		Total water demand (Domestic)	=	273.00	KLD
		Pumping 4 hour pumping	=	~~1095.83~~	LPM 568.75
		Or Say 273/4 x 2 = 34.25 KLH	=	~~1095.00~~ 570.0	**LPM**
		Gross Working Head			
	-	Suction lift	=	3.00	Meters
	-	Delivery head	=	5.00	Meters
	-	Frictional loss in Mains & Specials+ Positive head	=	7.00	Meters
	-	Clear head required (S+4) =10+5x3	=	25.00	Meters
		Total	=	40.00	Meters
		Or Say	=	**40.00**	**Meters**
		Pump HP = ~~1095~~ 570 x 40 x 100 / 60 x 75 x ~~80~~ 60 = 8.44 HP	=	~~12.2~~ 10.0	H.P.
		Or Say		~~12.5~~ 10.0	H.P.
		It is proposed to provide 3 nos. of motors of ~~7.5~~ HP (2W+1S) sets of ~~547.5~~ 570 LPM each discharge at 40 M head for domestic supply & generator set of same capacity in case of electric failure) for domestice purpose.			
(II)		**Under Ground Flushing Water Tanks**			
	a)	Flushing Water Demand	=	93.00	KLD
		Or Say	=	93	KLD
		Pumping 4 hour pumping 93/4 = 23.25 KLH	=	~~387.50~~ ~~404.17~~	LPM
		Or Say	=	**400.00**	**LPM**
		Pump HP = ~~400~~ x 40 x 100 / 60 x 75 x ~~80~~ 60 = 5.92 HP	=	~~4.48~~ 7.50	H.P.
		Or Say		~~5.00~~ 7.50	H.P.
		It is proposed to provide 2 nos. of motors of ~~5~~ HP (1W+1S) sets of ~~400.00~~ LPM discharge at 40 M head for flushing supply & generator set of same capacity in case of electric failure) for flushing purpose.			

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(III)		**Irrigation Pumping**			
	a)	Plot Area	=	7.89375	Acres
			=	31946.01	Sqmt
		Water Demand of Horticulture + Road Area Plantion	=	16050.00	LPD
		6 Hours Pumping	=	44.58	LPM
		Say	=	100	LPM
		Head	=	35	Mtr.
		Pump HP = $\frac{100 \times 35 \times 100}{60 \times 75 \times 70}$	=	1.30	H.P.
		Or Say	=	2.00	H.P.
		It is proposed to provide 2 nos. of motors of 2.0 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.)			

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(I)	**GENERATING SETS**				
S. No	**Equipment**	**QTY**	**HP**	**Total HP**	
			10+7.50+2		
2	Booster Pump (for domestic) + Flushing+ irrigation pump Add for flushing	2+1+1	~~15+5+2~~	~~22.0~~ 29.50 10.0	
	Total			~~22.0~~ 39.50	
				~~16.41~~	**KW**
	Disversity 0.8 & Power factor 0.8		39.50 x 0.746 x 1.5	~~20.52~~ 44.20	**KVA**
	Or Say			~~21.00~~ 50.0	**KVA**
	50				
	It is proposed to add ~~21~~ KVA capacity for above said machinery to the main DG set.				

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FINAL ABSTRACT OF COST

Sub Work	Description	Amount (Rs.) in Lacs	
I	Water Supply Scheme	137.50	~~132.06~~
II	Sewerage Scheme	80.48	~~60.90~~
III	Storm Water Drainage	62.12	~~47.45~~
IV	Road	169.06	~~162.13~~
V	Street Lighting	30.27	~~12.28~~
VI	Horticulture	4.70	~~22.17~~
VII	Maintenance Charges for 10 Years including Resurfacing of Roads after Ist 5 year & IInd 5 years of mtc	200.13	~~110.70~~
	Total (in Lacs)	684.26	**~~547.69~~**
	Cost per acres (7.89375) =		**~~69.38~~**

SAY ₹ 684.30 Lacs

₹ 684.30 Lacs / 7.89375 = 86.69 Lacs per gross acre

0 For Global Horizon Holdings Pvt. Ltd.

Authorised Signatory

(Authorized Signatory)

Executive Engineer
HUDA, Division No. VI
Gurgaon

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

~~Superintending Engineer,~~
HSVP Circle-II, Gurugram

Superintending Engineer (HQ)
for Chief Engineer I HSVP
Panchkula
30/12/15

Addl. Chief Engineer
HSVP, Gurugram

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Sub Work No.I		Water Supply
Sub Head	**Description**	**Amount (Rs.). In lacs**
1	Head Works	60.62 ~~41.18~~
2	Pumping Machinery	19.95 ~~8.44~~
3	Rising Main	6.49 ~~7.09~~
4	Distribution System (Domestic)	26.52 ~~69.90~~
5	Irrigation / Flushing water line	23.92 ~~5.45~~
	Say (In Lacs)	137.50 ~~132.06~~

C.O. to final abstract of cost

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Sub Work No-1						**Water Supply**
Sub Head No-01						**Head Works**
Sl No	**DESCRIPTION**	**Qty**		**Rate**		**AMOUNT (In Lacs.)**
1	Providing Boosting arrangement by pumps ~~7.5~~ 10.0 HP, capacity ~~540.0~~ 720.0 LPM at 40 M head, 2+1 nos. each & @ Rs. 100,000/- each (For UGT) complete with panel, foundation etc.	(2+1) 3	x	~~100000~~	Rs.	3.00 ~~9.00~~
2	Providing Boosting arrangement by pumps ~~5~~ 7.50 HP, capacity ~~404.00~~ 540.0 LPM at 40 M head, 1+1 nos. each & @ Rs. 100,000/- each (For STP) complete with panel, foundation etc.	(1+1) 2	x	~~250000~~ 1.00	Rs.	~~5~~ 2.00
3	Provision for carriage of materials and other unforseen items	1	x	~~100000~~ (L.S.)	Rs.	1.00
4	Construction of U.G. tanks of total cap.(~~263~~ 300 KL @ Rs. ~~4500~~ KL) incl. land for fire reserve	~~263~~ 300	x	~~4~~500 (L.S.)	Rs.	10.50 las ~~11.84~~
4(A)	Pow for Constn of boosting chamber as per					3.50 las
	TOTAL P.H. Tree of suitable size				**Rs.**	19.50 ~~26.84~~
5 to 8 Pl. see below	**Add 3% contingencies** & PC charges				**Rs.**	39.50 ~~0.81~~
	TOTAL Total				**Rs.**	1.18 ~~27.64~~
	Add 49% Department charges, Price Esclation & other unforseen Charges.				**Rs.**	40.68 ~~13.54~~
	TOTAL COST				**Rs.**	19.94 ~~41.18~~
						60.62 las

5) Boring & installing 200 mm i/d T.W. with reverse/direct rotary rig Complete with pipe & strainer to a depth of 150 m Complete in all respect (for drinking purposes with permission of CGWA) 1 No. @ Rs 10.0 las — Rs 10.00 las

6) Pow. and installing electricity driven electric or submersible pumping sets capable of delivering about 18 kl water per hrs. against a total head of 60 m Complete with motor and other accessories 1 No. @ Rs 2.00 las — Rs. 2.00 las

7) Pow for boundary wall around T.W., water works side, footpath (L.S.) — Rs 2.50 las
Hedges and lawn etc. — Rs 5.00 las
& Pow for staff qtrs. for note staff (L.S.) — Rs 19.50 las

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Sub Work No-1					**Water Supply**	
Sub Head No-02					**Pumping Machinery**	
Sl No	**DESCRIPTION**	**Qty**		**Rate**		**AMOUNT (In Lacs.)**
1	Providing and installing electricity driven Submersible pumping set capable of delivery about 1 LPS of water against a total Head of 10 M complete with motor and other accessories, 2 Nos @ 50,000/- (For sewe water pumping from Gas	(1+1) 2	x	25000	Rs.	0.50
2	Providing and installing electricity driven Submersible pumping set capable of delivery about 69 LPS of water against a total Head of 10 M complete with motor and other accessories, 2 Nos @ 100,000/- **(For storm water pumping from**	(1+1) 2	x	0.50 ~~100000~~	Rs.	~~2~~.00
3	Providing for chlorination plant complete. 1 set @ ~~50,000~~/-	1	x	1.00 ~~50000~~	Rs.	1.00 ~~0.50~~
4	Provision for making foundations and erection of Pumping machinery @ ~~Rs. 50000/-~~	1	x	1.00 ~~50000~~	Rs.	1.00 ~~0.50~~
5	Provision for pipes, valves and specials inside boosting chamber - 1 Set (L.S.) Rs. 50000/- for each	1	x	~~50000~~ (L.S.)	Rs.	1.00 ~~0.50~~
6	Provision for electric services connection including electric fitting for tube wells & boosting chamber & cost of transformer etc. Rs. 100000/-	1	x	~~100000~~ (L.S.)	Rs.	2.50 ~~1.00~~
7	Provision for carriage of material and unforeseen item. L.S. Rs. 50000/-	1	x	~~50000~~ (L.S.)	Rs.	0.50
8.	P&M for Gen. Set 50 KVA					5.00 Lacs
	TOTAL				**Rs.**	13.0 ~~5.50~~
	Add 3% contingencies & PE charges				**Rs.**	0.39 ~~0.17~~
	TOTAL				**Rs.**	13.39 ~~5.67~~
	Add 49% Department charges, Price Esclation & other unforseen Charges.				**Rs.**	6.56 ~~2.78~~
	TOTAL COST				**Rs.**	19.95 ~~8.44~~

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Sub Work No-1					**Water Supply**	
Sub Head No-03					**Rising Main from HUDA**	
Sl No	**DESCRIPTION**	**Qty**		**Rate**		**AMOUNT (In Lacs)**
1	Providing, laying, jointing & testing 180 mm dia. uPVC pipe lines including cost of excavation complete in all respects.	200 m	@	1250	Rs.	2.50 ~~1.90~~
2	Providing and fixing 180 mm dia. sluice valves including cost of surface boxes and masonary chambers etc., complete in all respects.	~~1~~ 1	@	12000	Rs.	0.12 ~~0.20~~
3	Providing and fixing indicating plates for sluice valves and air valves.	~~1~~ 1	@	1000	Rs.	~~0.10~~ 0.01 ~~0.020~~
4	Provision for carriage of material & other foreseen items etc., L.S..	1		~~50000~~ (L.S)	Rs.	0.10 ~~0.50~~
5	Provision for making connection with HUDA main (L.S.) 1 job1 complete in all respect	1		~~100000~~ (L.S)	Rs.	1.00
6	Provision for cutting road and making good the same (L.S.) 1 job	1		~~100000~~ (L.S)	Rs.	0.50 ~~1.00~~
	TOTAL				**Rs.**	4.23 ~~4.62~~
	Add 3% contingencies ⇐ PC Charges				**Rs.**	0.13 ~~0.14~~
	TOTAL				**Rs.**	4.36 ~~4.76~~
	Add 49% Department charges, Price Esclation & other unforseen Charges.				**Rs.**	2.13 ~~2.33~~
	Total Cost					6.49 Lacs ~~7.09~~

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Sub Work No-1						**Water Supply**
Sub Head No-04						**Distribution system** Dom
Sl No	**DESCRIPTION**	**Qty**		**Rate**		**AMOUNT (In Lacs)**
1	Providing, laying, jointing & testing upvc schdule 80 pipes including cost of excavation complete as per ISI marked.	580	m	1575		9.14 Lacs
	(i) 150 mm I/D	~~2611~~	@	~~1200~~	Rs.	~~31.33~~
2	(ii) 100 mm I/D Providing, laying, jointing & testing uPVC pipes including Fitting, complete all respect for connection to plot holders.	304m	@	1250/-		3.80 Lacs
	150 dia uPVC pipe	85	@	1250	Rs.	1.06
	100 dia uPVC pipe	215	@	1000	Rs.	2.15
	80 dia uPVC pipe	240	@	750	Rs.	1.80
	65 dia uPVC pipe	420	@	510	Rs.	2.14
	50 dia uPVC pipe	220	@	350	Rs.	0.77
	40 dia uPVC pipe	150	@	265	Rs.	0.40
	32 dia uPVC pipe	100	@	225	Rs.	0.23
	25 dia uPVC pipe	1181	@	175	Rs.	2.07
3	Providing and Fixing sluice valves including cost of brick masonry chamber complete in all respect.					
	100 mm I/D	2	Nos	13000	Rs.	0.30 ~~0.24~~
4	100 mm I/D Providing & fixing full way lever operated forged brass ball valve of brass body with forged brass hard chrome plated steel ball tested to a pressure not less than 10 Kg / sqcm with threaded / flanged joints complete with nuts, bolts, gaskets, washers etc. Prov. & Fixing Fire Hydrants complete with masonry chamber	7	Nos	12000/- (L.S.)		0.84 Lacs 1.14
	~~25 mm I/D~~	~~290~~	@	~~780~~	Rs.	~~2.26~~
5	Providing and Fixing air valves and scour valves including cost of brick masonry chamber complete.	2	@	10000	Rs.	0.20
7	Provision for carriage of material & other foreseen items etc., (L.S). 1 Job including cutting of road and making the same.	1	@	100000	Rs.	1.00
	TOTAL				**Rs.**	17.28 ~~45.35~~
	Add 3% contingencies & PE charges				**Rs.**	0.52 ~~1.37~~
	TOTAL				**Rs.**	17.80 ~~46.91~~
	Add 49% Department charges, Price Esclation & other unforseen Charges.				**Rs.**	8.72 26.52 ~~22.99~~

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B. Arch (Hons)
CA/95/18739

PROPOSAL FOR AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DEEN DAYAL JAN AWAS YOJNA ON AN AREA MEASURING 7.89375 ACRES FALLING SECTOR-33, VILLAGE-DHUNELA, TEHSIL-SOHNA, DISTRICT-GURUGRAM, HARYANA.

	TOTAL COST				**Rs.**	**69.90**

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PROPOSAL FOR AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DEEN DAYAL JAN AWAS YOJNA ON AN AREA MEASURING 7.89375 ACRES FALLING SECTOR-33, VILLAGE-DHUNELA, TEHSIL-SOHNA, DISTRICT-GURUGRAM, HARYANA.

Sub Work No-1					**Water Supply**	
Sub Head No-05				Flushing	**Irrigation**	
Sl No	**DESCRIPTION**	**Qty**		**Rate**		**AMOUNT (In Lacs)**
1	Providing, laying, jointing and testing uPVC pipe line confirming to I.S 4985 including cost of excavation etc., complete in all respects.		-			
	25 mm O/D for Ring Main irrigation Hydrant -Lin	60	@	250	Rs.	0.15
	~~100~~ mm O/D for ~~Ring Main~~ FWS. -Lin	~~300~~ 390	@	~~250~~ 350	Rs.	11.12 ~~0.35~~
	50 mm O/D for Ring Main	180	@	450	Rs.	0.81
	63 mm O/D for Ring Main	250	@	500	Rs.	1.25
2	Providing and fixing Irrigation hydrant valve complete in all respect.	8	@	~~2~~000	Rs.	0.28 ~~0.16~~
3	Provision for carriage of material & other foreseen items etc., (L.S.)	1	@	~~25000~~ (L.S)	Rs.	0.50 ~~0.25~~
4	Providing & fixing ball valve 20 mm	8	@	250	Rs.	0.02
5	Providing & fixing sluice valvle compelte with chamber.			12000		0.96 Ls
	~~100~~ mm dia.	8	@	~~600~~	Rs.	~~0.05~~
	~~63 mm dia~~	~~1~~	~~@~~	~~1000~~	~~Rs.~~	~~0.01~~
6	Providing and fixing Irrigation pump 2.0 HP, 135 LPM @ 35 Mtr. Head complete with foundation & control panel etc.	2	@	25000	Rs.	0.50
	TOTAL				**Rs.**	15.59 ~~3.55~~
	Add 3% contingencies Eg PE. Charges				**Rs.**	0.47 ~~0.11~~
	TOTAL				**Rs.**	16.06 ~~3.65~~
	Add 49% Department charges, Price Esclation & other unforseen				**Rs.**	7.86 ~~1.79~~
	TOTAL COST				**Rs.**	23.92 Lacs ~~5.45~~

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Sub Work No-II — **Sewerage Scheme**

Sl No	DESCRIPTION	Qty		Rate		AMOUNT (In Lacs)
1	Providing, jointing, cutting and testing PVC sn4 pipe (SW Pipe) lowering into trenches including cost of excavation, bed concrete, cost of manhole etc., complete in all			1250/-		
	200 mm I/D Avg. depth upto 0 - 4.00 M	715	@	~~550.00~~	Rs.	8.94 ~~3.93~~
2	Provision for lighting and watching L.S-	1	@	(L.S.) ~~50000.00~~	Rs.	0.50
3	Provision for timbering and shuttering L.S.	1	@	(L.S.) ~~150000.00~~	Rs.	1.50
4	Provision form STP to HUDA main by pumping	1	@	~~125000.00~~	Rs.	1.25
5	Provision for making STP (KLD) (upto terminal level)	300	@	(L.S.) ~~10000.00~~	Rs.	37.50 ~~30.00~~
6	Provision for carriage of maternal (L.S.)	1	@	(L.S.) ~~50000.00~~	Rs.	0.50
7	Provision of cutting road & making it good as same in original condition - 1 job	1	@	(L.S.) ~~50000.00~~	Rs.	0.50
8	Providing and fixing sewerage transfer pump 2 LPM @ 10 Mtr. Head complete with foundation & control panel etc.	2	@	75000	Rs.	1.50 1.00
9.	**TOTAL** Pay for Sew. Connection with HSVP main line (L.S.)				**Rs.**	52.44 ~~39.68~~
	Add 3% contingencies Ex PE. Charges				**Rs.**	1.57 ~~1.19~~
	TOTAL				**Rs.**	54.01 ~~40.87~~
	Add 49% Department charges, price esclation, other for unforseen charges.				**Rs.**	26.47 ~~20.03~~
	TOTAL COST				**Rs.**	80.48 ~~60.90~~

C.O. to final abstract of cost

ANOJ TEVATIA
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CA/95/18739

PROPOSAL FOR AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DEEN DAYAL JAN AWAS YOJNA ON AN AREA MEASURING 7.89375 ACRES FALLING SECTOR-33, VILLAGE-DHUNELA, TEHSIL-SOHNA, DISTRICT-GURUGRAM, HARYANA.

S. No.	Node		Water Demand	Sewerage Quantity			Sewerage Discharge			Infiltration Factor	Sewerage Discharge (incl. Infiltration)	Size of Pipe	Velocity		Design Discharge	Design Discharge	Length of Line	Slope	Fall Due to Slope		Ground Level (in Meter)		Invert Level (in Meter)	
				Self	Branch	Total	Avg	Peak	Peak												Start	End	Start	End
	Fr.	To	LPD	LPD	LPD	LPD	LPS	LPS	m^3/sec	m^3/sec	m^3/sec	mm	ft/sec	m/s	Cusec	m^3/sec		1 in ·	Gradient	M.	M.	M.	M.	M.
1	1	2	4657.5	4 192	0	4 192	0.05	0.146	0.0001	0.000003	0.0001	200	2.80	0.85	0.47	0.0134	12	150	0	0.080	98.600	98.600	97.700	97.620
2	2	3	9315.0	8 384	4 192	12 575	0.15	0.437	0.0004	0.000003	0.0004	200	2.80	0.85	0.47	0.0134	12	150	0	0.080	98.600	98.600	97.620	97.540
3	3	4	9315.0	8 384	12 575	20 959	0.24	0.728	0.0007	0.000003	0.0007	200	2.80	0.85	0.47	0.0134	12	150	0	0.080	98.600	98.600	97.540	97.460
4	4	5	9315.0	8 384	20 959	29 342	0.34	1.019	0.0010	0.000003	0.0010	200	2.80	0.85	0.47	0.0134	12	150	0	0.080	98.600	98.600	97.460	97.380
5	5	6	9315.0	8 384	29 342	37 726	0.44	1.310	0.0013	0.000002	0.0013	200	2.80	0.85	0.47	0.0134	7	150	0	0.047	98.600	98.600	97.380	97.333
6	6	7	7128. 75	6 416	37 726	44 142	0.51	1.533	0.0015	0.000001	0.0015	200	2.80	0.85	0.47	0.0134	6	150	0	0.040	98.600	98.600	97.333	97.293
7	7	8	4657.5	4 192	44 142	48 333	0.56	1.678	0.0017	0.000004	0.0017	200	2.80	0.85	0.47	0.0134	17	150	0	0.113	98.600	98.600	97.293	97.180
8	8	9	4657.5	4 192	48 333	52 525	0.61	1.824	0.0018	0.000004	0.0018	200	2.80	0.85	0.47	0.0134	16	150	0	0.107	98.600	98.600	97.180	97.073
9	9	10	9315.0	8 384	52 525	60 909	0.70	2.115	0.0021	0.000004	0.0021	200	2.80	0.85	0.47	0.0134	16	150	0	0.107	98.600	98.600	97.073	96.967
10	10	11	6986. 25	6 288	60 909	67 196	0.78	2.333	0.0023	0.000004	0.0023	200	2.80	0.85	0.47	0.0134	17	150	0	0.113	98.600	98.600	96.967	96.853
11	11	12	4657.5	4 192	67 196	71 388	0.83	2.479	0.0025	0.000004	0.0025	200	2.80	0.85	0.47	0.0134	16	150	0	0.107	98.600	98.600	96.853	96.747
12	12	13	6986. 25	6 288	71 388	77 676	0.90	2.697	0.0027	0.000002	0.0027	200	2.80	0.85	0.47	0.0134	8	150	0	0.053	98.600	98.600	96.747	96.693
13	13	SUMP			77 676	77 676	0.90	2.697	0.0027	0.000001	0.0027	200	2.80	0.85	0.47	0.0134	4	150	0	0.027	98.600	98.600	96.693	96.667
14	SUMP	14			77 676	77 676	0.90	2.697	0.0027	0.000010	0.0027	200	2.80	0.85	0.47	0.0134	40	150	0	0.267	98.600	98.600	98.000	97.733
15	14	15	2328.7 5	2 096	77 676	79 772	0.92	2.770	0.0028	0.000002	0.0028	200	2.80	0.85	0.47	0.0134	8	150	0	0.053	98.600	98.600	97.733	97.680
16	15	55	4657.5	4 192	79 772	83 963	0.97	2.915	0.0029	0.000004	0.0029	200	2.80	0.85	0.47	0.0134	16	150	0	0.107	98.600	98.600	97.680	97.573
17	16	17	4657.5	4 192		4 192	0.05	0.146	0.0001	0.000004	0.0001	200	2.80	0.85	0.47	0.0134	16	150	0	0.107	98.600	98.600	97.700	97.593
18	17	18	4657.5	4 192	4 192	8 384	0.10	0.291	0.0003	0.000004	0.0003	200	2.80	0.85	0.47	0.0134	15	150	0	0.100	98.600	98.600	97.593	97.493
19	18	19	2328. 75	2 096	8 384	10 479	0.12	0.364	0.0004	0.000002	0.0004	200	2.80	0.85	0.47	0.0134	8	150	0	0.053	98.600	98.600	97.493	97.440
20	19	20			10 479	10 479	0.12	0.364	0.0004	0.000002	0.0004	200	2.80	0.85	0.47	0.0134	8	150	0	0.053	98.600	98.600	97.440	97.387
21	20	24	4657.5	4 192	10 479	14 671	0.17	0.509	0.0005	0.000004	0.0005	200	2.80	0.85	0.47	0.0134	18	150	0	0.120	98.600	98.600	97.387	97.267
22	21	22	9315.0	8 384		8 384	0.10	0.291	0.0003	0.000004	0.0003	200	2.80	0.85	0.47	0.0134	16	150	0	0.107	98.600	98.600	97.700	97.593
23	22	23	9315.0	8 384	8 384	16 767	0.19	0.582	0.0006	0.000004	0.0006	200	2.80	0.85	0.47	0.0134	16	150	0	0.107	98.600	98.600	97.593	97.487
24	23	24	4657.5	4 192	16 767	20 959	0.24	0.728	0.0007	0.000002	0.0007	200	2.80	0.85	0.47	0.0134	7	150	0	0.047	98.600	98.600	97.487	97.440
25	24	25	4657.5	4 192	35 630	39 822	0.46	1.383	0.0014	0.000004	0.0014	200	2.80	0.85	0.47	0.0134	15	150	0	0.100	98.600	98.600	97.267	97.167
26	25	26	4657.5	4 192	39 822	44 013	0.51	1.528	0.0015	0.000004	0.0015	200	2.80	0.85	0.47	0.0134	16	150	0	0.107	98.600	98.600	97.167	97.060
27	26	27	4657.5	4 192	44 013	48 205	0.56	1.674	0.0017	0.000001	0.0017	200	2.80	0.85	0.47	0.0134	3	150	0	0.020	98.600	98.600	97.060	97.040
28	27	28			48 205	48 205	0.56	1.674	0.0017	0.000002	0.0017	200	2.80	0.85	0.47	0.0134	8	150	0	0.053	98.600	98.600	97.040	96.987
29	28	29	2328.7 5	2 096	48 205	50 301	0.58	1.747	0.0017	0.000003	0.0017	200	2.80	0.85	0.47	0.0134	12	150	0	0.080	98.600	98.600	96.987	96.907
30	29	30	9315.0	8 384	50 301	58 685	0.68	2.038	0.0020	0.000003	0.0020	200	2.80	0.85	0.47	0.0134	12	150	0	0.080	98.600	98.600	96.907	96.827
31	30	31	9315.0	8 384	58 685	67 068	0.78	2.329	0.0023	0.000003	0.0023	200	2.80	0.85	0.47	0.0134	12	150	0	0.080	98.600	98.600	96.827	96.747
32	31	32	9315.0	8 384	67 068	75 452	0.87	2.620	0.0026	0.000003	0.0026	200	2.80	0.85	0.47	0.0134	12	150	0	0.080	98.600	98.600	96.747	96.667
33	32	33	4657.5	4 192	75 452	79 643	0.92	2.765	0.0028	0.000003	0.0028	200	2.80	0.85	0.47	0.0134	12	150	0	0.080	98.600	98.600	96.667	96.587
34	33	34	9315.0	8 384	79 643	88 027	1.02	3.056	0.0031	0.000003	0.0031	200	2.80	0.85	0.47	0.0134	12	150	0	0.080	98.600	98.600	96.587	96.507
35	34	38	9315.0	8 384	88 027	96 410	1.12	3.348	0.0033	0.000002	0.0033	200	2.80	0.85	0.47	0.0134	7	150	0	0.047	98.600	98.600	96.507	96.460
36	35	36	9315.0	8 384		8 384	0.10	0.291	0.0003	0.000003	0.0003	200	2.80	0.85	0.47	0.0134	14	150	0	0.093	98.600	98.600	97.700	97.607
37	36	37	9315.	8 384	8 384	16 767	0.19	0.582	0.0006	0.000003	0.0006	200	2.80	0.85	0.47	0.0134	14	150	0	0.093	98.600	98.600	97.607	97.513
38	37	38	9315.	8 384	16 767	25 151	0.29	0.873	0.0009	0.000006	0.0009	200	2.80	0.85	0.47	0.0134	25	150	0	0.167	98.600	98.600	97.513	97.347
39	38	39			1 21 561	1 21 561	1.41	4.221	0.0042	0.000002	0.0042	200	2.80	0.85	0.47	0.0134	7	150	0	0.047	98.600	98.600	96.460	96.413
40	39	40	6986. 25	6 288	1 21 561	1 27 848	1.48	4.439	0.0044	0.000004	0.0044	200	2.80	0.85	0.47	0.0134	18	150	0	0.120	98.600	98.600	96.413	96.293
41	40	41	9315.0	8 384	1 27 848	1 36 232	1.58	4.730	0.0047	0.000004	0.0047	200	2.80	0.85	0.47	0.0134	16	150	0	0.107	98.600	98.600	96.293	96.187
42	41	42	9315.0	8 384	1 36 232	1 44 615	1.67	5.021	0.0050	0.000004	0.0050	200	2.80	0.85	0.47	0.0134	16	150	0	0.107	98.600	98.600	96.187	96.080
43	42	45	6986.2 5	6 288	1 44 615	1 50 903	1.75	5.240	0.0052	0.000001	0.0052	200	2.80	0.85	0.47	0.0134	3	150	0	0.020	98.600	98.600	96.080	96.060

PROPOSAL FOR AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DEEN DAYAL JAN AWAS YOJNA ON AN AREA MEASURING 7.89375 ACRES FALLING SECTOR-33, VILLAGE-DHUNELA, TEHSIL-SOHNA, DISTRICT-GURUGRAM, HARYANA.

S. No.	Node.		Water Demand	Sewerage Quantity			Sewerage Discharge			Infiltration Factor	Sewerage Discharge (incl. Infiltration)	Size of Pipe	Velocity		Design Discharge	Design Discharge	Length of Line	Slope	Fall Due to Slope		Ground Level (in Meter)		Invert Level (in Meter)	
				Self	Branch	Total	Avg	Peak	Peak												Start	End	Start	End
	Fr.	To	LPD	LPD	LPD	LPD	LPS	LPS	m^3/sec	m^3/sec	m^3/sec	mm	ft/sec	m/s	Cusec	m^3/sec		1 in	Gradient	M.	M.	M.	M.	M.
44	43	44	19605.0	17 645		17 645	0.20	0.613	0.0006	0.000002	0.0006	200	2.80	0.85	0.47	0.0134	7	150	0	0.047	98.600	98.600	97.700	97.653
45	44	45	4657.5	4 192	17 645	21 836	0.25	0.758	0.0008	0.000003	0.0008	200	2.80	0.85	0.47	0.0134	12	150	0	0.080	98.600	98.600	97.653	97.573
46	45	46			1 72 739	1 72 739	2.00	5.998	0.0060	0.000002	0.0060	200	2.80	0.85	0.47	0.0134	10	150	0	0.067	98.600	98.600	96.060	95.993
47	46	47	2328. 75	2 096	1 72 739	1 74 835	2.02	6.071	0.0061	0.000003	0.0061	200	2.80	0.85	0.47	0.0134	12	150	0	0.080	98.600	98.600	95.993	95.913
48	47	49	4657. 5	4 192	1 74 835	1 79 027	2.07	6.216	0.0062	0.000003	0.0062	200	2.80	0.85	0.47	0.0134	13	150	0	0.087	98.600	98.600	95.913	95.827
49	48	49	4657. 5	4 192		4 192	0.05	0.146	0.0001	0.000003	0.0001	200	2.80	0.85	0.47	0.0134	12	150	0	0.080	98.600	98.600	97.700	97.620
50	49	50	4657. 5	4 192	1 83 219	1 87 410	2.17	6.507	0.0065	0.000002	0.0065	200	2.80	0.85	0.47	0.0134	8	150	0	0.053	98.600	98.600	95.827	95.773
51	50	51	4657.5	4 192	1 87 410	1 91 602	2.22	6.653	0.0067	0.000004	0.0067	200	2.80	0.85	0.47	0.0134	15	150	0	0.100	98.600	98.600	95.773	95.673
52	51	52	9315.0	8 384	1 91 602	1 99 986	2.31	6.944	0.0069	0.000004	0.0069	200	2.80	0.85	0.47	0.0134	15	150	0	0.100	98.600	98.600	95.673	95.573
53	52	53	9315.0	8 384	1 99 986	2 08 369	2.41	7.235	0.0072	0.000004	0.0072	200	2.80	0.85	0.47	0.0134	15	150	0	0.100	98.600	98.600	95.573	95.473
54	53	54	9315.0	8 384	2 08 369	2 16 753	2.51	7.526	0.0075	0.000004	0.0075	200	2.80	0.85	0.47	0.0134	15	150	0	0.100	98.600	98.600	95.473	95.373
55	54	55	9315.0	8 384	2 16 753	2 25 136	2.61	7.817	0.0078	0.000004	0.0078	200	2.80	0.85	0.47	0.0134	16	150	0	0.107	98.600	98.600	95.373	95.267
56	55	STP	16986. 25	15 288	2 25 136	2 40 424	2.78	8.348	0.0083	0.000002	0.0084	200	2.80	0.85	0.473	0.0134	8	150	0	0.053	98.600	98.600	95.267	95.213
TOTAL			3 60 430														715 mL							

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B. Arch (Hons)
CA/95/18739

PROPOSAL FOR AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DEEN DAYAL JAN AWAS YOJNA ON AN AREA MEASURING 7.89375 ACRES FALLING SECTOR-33, VILLAGE-DHUNELA, TEHSIL-SOHNA, DISTRICT-GURUGRAM, HARYANA.

Sub Work No-III		Storm water drain						
S.	**DESCRIPTION**	**Qty**		**Rate**				**AMOUNT**
1	Providing, lowering, laying and jointing R.C.C NP-3 pipes and specials into trenches including manholes, chambers etc., excavation, back filling and disposal of surplus earth complete in all respects.	719		2500				17.98 lac
1.1	~~200 mm I/D Avg. depth upto 2.0 M.~~	~~215~~	@	~~1250~~			Rs.	~~2.69~~
~~1.2~~	~~250 mm I/D Avg. depth upto 2.0 M~~	~~50~~	@	~~1250~~			Rs.	~~0.63~~
~~1.3~~	~~300 mm I/D Avg. depth upto 2.0 M.~~	~~90~~	@	~~1450~~			Rs.	~~1.31~~
~~1.4~~	~~450 mm I/D Avg. depth above 2.0 M.~~	~~300~~	@	~~1750~~			Rs.	~~5.25~~
~~1.5~~	~~600 mm I/D Avg. depth ABOVE 2.0 M.~~	~~62~~	@	~~2100~~			~~Rs.~~	~~1.30~~
2	Provision for Road Gullies L.S. with 300 mm ø pipe connection	1	@	~~250000~~ (L.S)			Rs.	2.50
3	Provision for lighting and watching	1	@	~~50000~~ (L.S)			Rs.	0.50
4	Provision for timbering and shoring L.S.	1	@	~~50000~~ (L.S)			Rs.	0.50
5	Provision for carriage of material & other foreseen items etc., L.S.	1	@	~~50000~~ (L.S)			Rs.	~~0.50~~ 1.00
6	Provision for Rain water harvesting arrangemte for ~~(7.89375 acre) @ 1.5 lakh /acre~~ at selected places.	~~8.000~~	@	~~150000~~ (L.S.)			Rs.	12.00
7	Provision for temporary connection with ~~HUDA~~ HSVP on master road	1	@	~~175000~~ (L.S)			Rs.	1.00
8	~~Providing and fixing sewerage transfer pump 69 LPM @ 10 Mtr. Head complete with foundation & control panel etc.~~ Pair for temporary disposal arrangement till HSVP services on Ponds	~~2~~	@	~~100000~~ (L.S)			Rs.	~~2.00~~ 7.50 lac
	TOTAL						**Rs.**	~~30.92~~ 40.48
	Add 3% contingencies as per P.E. Charts						**Rs.**	~~0.93~~ 1.21
	TOTAL						**Rs.**	~~31.85~~ 41.69
	Add 49% Department charges, price esclation, other for unforseen charges.						**Rs.**	~~15.61~~ 20.43
	TOTAL						**Rs.**	~~47.45~~ 62.12

ANOJ TEVATIA
B. Arch (Hons)
CA/95/1[illegible]

PROPOSAL FOR AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DEEN DAYAL JAN AWAS YOJNA ON AN AREA MEASURING 7.89375 ACRES FALLING SECTOR-33, VILLAGE-DHUNELA, TEHSIL-SOHNA, DISTRICT-GURUGRAM, HARYANA.

S. No.	Drain Nodes		Total Area for Calculation of Drain Line (in M2)			Max. Design Discharge @ 0.00672 Liters per sec / m2 area		Max. Design Discharge considered in m^3/sec	Hydraulic Size of Drain or Pipe		Pipe	Pipe	Pipe	Mannings	Velocity	Discharge Capacity	Length of Section	Slope	Fall in Metres		Ground level Meter		Invert Level in Meters		Average depth
	From	To	Self Area (m2)	Previous	Total	liters/sec	m^3/sec	m^3/sec	B or Dia in mm	D1 – Depth in MM	CSA	P	HMR	n	For Pipe in m/s	For Pipe in m^3/sec	Meter	1 in	Gradient	As per slope	Start	End	Start	End	Meter
1	1	2	621	0	621	4.173	0.004	0.010	400		0.031415927	0.628318531	0.05	0.015	0.64	0.020	12	200	0.000	0.060	98.60	98.60	98.00	97.940	0.630
2	2	3	563	621	1184	7.956	0.008	0.010	400		0.031415927	0.628318531	0.05	0.015	0.64	0.020	13	200	0.000	0.065	98.60	98.60	97.940	97.875	0.692
3	3	4	563	1184	1747	11.740	0.012	0.020	400		0.031415927	0.628318531	0.05	0.015	0.64	0.020	13	200	0.000	0.065	98.60	98.60	97.88	97.810	0.757
4	4	5	563	1747	2310	15.523	0.016	0.020	400		0.031415927	0.628318531	0.05	0.015	0.64	0.020	12	200	0.000	0.060	98.60	98.60	97.81	97.750	0.820
5	5	7	281	2310	2591	17.412	0.017	0.020	400		0.031415927	0.628318531	0.05	0.015	0.64	0.020	8	200	0.000	0.040	98.60	98.60	97.75	97.710	0.870
6	6	7	3623		3623	24.347	0.024	0.030	250		0.049087385	0.785398163	0.0625	0.015	0.66	0.033	13	250	0.000	0.052	98.60	98.60	98.00	97.948	0.626
7	7	8	384	6214	6598	44.339	0.044	0.050	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	7	450	0.000	0.016	98.60	98.60	97.71	97.694	0.898
8	8	9	384	6598	6982	46.919	0.047	0.050	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	16	450	0.000	0.036	98.60	98.60	97.69	97.659	0.923
9	9	10	541	6982	7523	50.555	0.051	0.060	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	16	450	0.000	0.036	98.60	98.60	97.66	97.623	0.959
10	10	11	512	7523	8035	53.995	0.054	0.060	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	16	450	0.000	0.036	98.60	98.60	97.62	97.588	0.994
11	11	12	513	8035	8548	57.443	0.057	0.060	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	16	450	0.000	0.036	98.60	98.60	97.59	97.552	1.030
12	12	13	561	8548	9109	61.212	0.061	0.070	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	9	450	0.000	0.020	98.60	98.60	97.55	97.532	1.058
13	13	14	536	9109	9645	64.814	0.065	0.070	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	10	450	0.000	0.022	98.60	98.60	97.53	97.510	1.079
14	14	RWHP	705	9645	10350	69.552	0.070	0.070	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	3	450	0.000	0.007	98.60	98.60	97.51	97.503	1.093
15	RWHP	15		10350	10350	69.552	0.070	0.070	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	28	450	0.000	0.062	98.60	98.60	97.50	97.441	1.128
16	15	RWHP	1080	10350	11430	76.810	0.077	0.080	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	8	450	0.000	0.018	98.60	98.60	97.90	97.882	0.709
17	RWHP	16		11430	11430	76.810	0.077	0.080	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	2	450	0.000	0.004	98.60	98.60	97.88	97.878	0.720
18	16	17	619	11430	12049	80.969	0.081	0.090	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	15	450	0.000	0.033	98.60	98.60	97.88	97.844	0.739
19	17	18	628	12049	12677	85.189	0.085	0.090	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	12	450	0.000	0.027	98.60	98.60	97.84	97.818	0.769
20	18	19	624	12677	13301	89.383	0.089	0.090	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	16	450	0.000	0.036	98.60	98.60	97.82	97.782	0.800
21	19	20	624	13301	13925	93.576	0.094	0.100	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	16	450	0.000	0.036	98.60	98.60	97.78	97.747	0.836
22	20	21	628	13925	14553	97.796	0.098	0.100	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	15	450	0.000	0.033	98.60	98.60	97.75	97.713	0.870
23	21	RWHP	632	14553	15185	102.043	0.102	0.110	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	1	450	0.000	0.002	98.60	98.60	97.71	97.711	0.888
24	RWHP	22		15185	15185	102.043	0.102	0.110	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	9	450	0.000	0.020	98.60	98.60	97.71	97.691	0.899

ANOJ TEVATIA
B. Arch (Hons).
CA/93/18739

PROPOSAL FOR AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DEEN DAYAL JAN AWAS YOJNA ON AN AREA MEASURING 7.89375 ACRES FALLING SECTOR-33, VILLAGE-DHUNELA, TEHSIL-SOHNA, DISTRICT-GURUGRAM, HARYANA.

S. No	Drain Nodes		Total Area for Calculation of Drain Line (in M2)			Max. Design Discharge @ 0.00672 Liters per sec / m2 area		Max. Design Discharge considered in m^3/sec	Hydraulic Size of Drain or Pipe		Pipe	Pipe	Pipe	Mannings	Velocity	Discharge Capacity	Length of Section	Slope	Fall in Metres		Ground level Meter		Invert Level in Meters		Average depth
	From	To	Self Area (m2)	Previous	Total	liters/sec	m^3/sec	m^3/sec	B or Dia in mm	D1 – Depth in MM	CSA	P	HMR	n	For Pipe in m/s	For Pipe in m^3/sec	Meter	1 in	Gradient	As per slope	Start	End	Start	End	Meter
25	22	24	625	15185	15810	106.243	0.106	0.110	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	8	450	0.000	0.018	98.60	98.60	97.69	97.673	0.918
26	23	24	223		223	1.499	0.001	0.010	200		0.031415927	0.628318531	0.05	0.015	0.64	0.020	13	200	0.000	0.065	98.60	98.60	98.00	97.935	0.632
27	24	25	361	16033	16397	110.188	0.110	0.120	600		0.282743339	1.884955592	0.15	0.015	0.77	0.217	13	600	0.000	0.022	98.60	98.60	97.67	97.652	0.938
28	25	26	361	16397	16761	112.634	0.113	0.120	600		0.282743339	1.884955592	0.15	0.015	0.77	0.217	13	600	0.000	0.022	98.60	98.60	97.65	97.630	0.959
29	26	51	380	16761	17141	115.188	0.115	0.120	600		0.282743339	1.884955592	0.15	0.015	0.89	0.251	10	450	0.000	0.022	98.60	98.60	97.63	97.608	0.981
30	27	28	113		113	0.759	0.001	0.010	200		0.031415927	0.628318531	0.05	0.015	0.64	0.020	15	200	0.000	0.075	98.60	98.60	98.00	97.925	0.637
31	28	29	226	113	339	2.278	0.002	0.010	200		0.031415927	0.628318531	0.05	0.015	0.64	0.020	16	200	0.000	0.080	98.60	98.60	97.93	97.845	0.715
32	29	30	226	339	565	3.797	0.004	0.010	200		0.031415927	0.628318531	0.05	0.015	0.64	0.020	8	200	0.000	0.040	98.60	98.60	97.85	97.805	0.775
33	30	31	192	565	757	5.087	0.005	0.010	200		0.031415927	0.628318531	0.05	0.015	0.64	0.020	16	200	0.000	0.080	98.60	98.60	97.81	97.725	0.835
34	31	35	383	757	1140	7.661	0.008	0.010	200		0.031415927	0.628318531	0.05	0.015	0.64	0.020	17	200	0.000	0.085	98.60	98.60	97.73	97.640	0.917
35	32	33	304		304	2.043	0.002	0.010	200		0.031415927	0.628318531	0.05	0.015	0.64	0.020	15	200	0.000	0.075	98.60	98.60	98.00	97.925	0.637
36	33	34	606	304	910	6.115	0.006	0.010	200		0.031415927	0.628318531	0.05	0.015	0.64	0.020	16	200	0.000	0.080	98.60	98.60	97.93	97.845	0.715
37	34	35	606	910	1516	10.188	0.010	0.020	250		0.049087385	0.785398163	0.0625	0.015	0.66	0.033	8	250	0.000	0.032	98.60	98.60	97.85	97.813	0.771
38	35	36	383	2656	3039	20.422	0.020	0.030	300		0.070685835	0.942477796	0.075	0.015	0.68	0.048	12	300	0.000	0.040	98.60	98.60	97.64	97.600	0.980
38	36	37	383	3039	3422	22.996	0.023	0.030	300		0.070685835	0.942477796	0.075	0.015	0.68	0.048	23	300	0.000	0.077	98.60	98.60	97.60	97.523	1.038
39	37	38	475	3422	3897	26.188	0.026	0.030	300		0.070685835	0.942477796	0.075	0.015	0.68	0.048	8	300	0.000	0.027	98.60	98.60	97.52	97.497	1.090
39	38	39	305	3897	4202	28.237	0.028	0.030	300		0.070685835	0.942477796	0.075	0.015	0.68	0.048	11	300	0.000	0.037	98.60	98.60	97.50	97.460	1.122
40	39	RWHP	623	4202	4825	32.424	0.032	0.040	300		0.070685835	0.942477796	0.075	0.015	0.68	0.048	1	300	0.000	0.003	98.60	98.60	97.46	97.457	1.142
40	RWHP	40		4825	4825	32.424	0.032	0.040	300		0.070685835	0.942477796	0.075	0.015	0.68	0.048	8	300	0.000	0.027	98.60	98.60	97.46	97.430	1.157
41	40	41	623	4825	5448	36.611	0.037	0.040	300		0.070685835	0.942477796	0.075	0.015	0.68	0.048	8	300	0.000	0.027	98.60	98.60	97.43	97.403	1.183

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S. No	Drain Nodes		Total Area for Calculation of Drain Line (in M2)			Max. Design Discharge @ 0.00672 Liters per sec / m2 area		Max. Design Discharge considered in m^3/sec	Hydraulic Size of Drain or Pipe		Pipe	Pipe	Pipe	Mannings	Velocity	Discharge Capacity	Length of Section	Slope	Fall in Metres		Ground level Meter		Invert Level in Meters		Average depth
	From	To	Self Area (m2)	Previous	Total	liters/sec	m^3/sec	m^3/sec	B or Dia in mm	D1 – Depth in MM	CSA	P	HMR	n	For Pipe in m/s	For Pipe in m^3/sec	Meter	1 in	Gradient	As per slope	Start	End	Start	End	Meter
41	41	42	623	5448	6071	40.797	0.041	0.050	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	16	450	0.000	0.036	98.60	98.60	97.40	97.368	1.214
42	42	43	623	6071	6694	44.984	0.045	0.050	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	16	450	0.000	0.036	98.60	98.60	97.37	97.332	1.250
42	43	48	635	6694	7329	49.251	0.049	0.050	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	17	450	0.000	0.038	98.60	98.60	97.33	97.294	1.287
43	44	45	254		254	1.707	0.002	0.010	200		0.031415927	0.628318531	0.05	0.015	0.64	0.020	13	200	0.000	0.065	98.60	98.60	98.00	97.935	0.632
43	45	46	508	254	762	5.121	0.005	0.010	200		0.031415927	0.628318531	0.05	0.015	0.64	0.020	14	200	0.000	0.070	98.60	98.60	97.94	97.865	0.700
44	46	47	508	762	1270	8.534	0.009	0.010	200		0.031415927	0.628318531	0.05	0.015	0.64	0.020	14	200	0.000	0.070	98.60	98.60	97.87	97.795	0.770
44	47	48	489	1270	1759	11.820	0.012	0.020	250		0.049087385	0.785398163	0.0625	0.015	0.66	0.033	25	250	0.000	0.100	98.60	98.60	97.80	97.695	0.855
45	48	49	493	9088	9581	64.384	0.064	0.070	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	18	450	0.000	0.040	98.60	98.60	97.29	97.254	1.326
45	49	50	623	9581	10204	68.571	0.069	0.070	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	14	450	0.000	0.031	98.60	98.60	97.25	97.223	1.361
46	50	RWHP	623	10204	10827	72.757	0.073	0.080	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	2	450	0.000	0.004	98.60	98.60	97.22	97.219	1.379
46	RWHP	51		10827	10827	72.757	0.073	0.080	450		0.159043128	1.413716694	0.1125	0.015	0.73	0.116	9	450	0.000	0.020	98.60	98.60	97.22	97.199	1.391
47	51	52	479	27968	28447	191.164	0.191	0.200	600		0.282743339	1.884955592	0.15	0.015	0.77	0.217	8	600	0.000	0.013	98.60	98.60	97.20	97.186	1.408
47	52	RWHP	216	28447	28663	192.615	0.193	0.200	600		0.282743339	1.884955592	0.15	0.015	0.77	0.217	3	600	0.000	0.005	98.60	98.60	97.19	97.181	1.417
48	RWHP	53		28663	28663	192.615	0.193	0.200	600		0.282743339	1.884955592	0.15	0.015	0.77	0.217	3	600	0.000	0.005	98.60	98.60	97.18	97.176	1.422
48	53	RWHP	389	28663	29052	195.229	0.195	0.200	600		0.282743339	1.884955592	0.15	0.015	0.77	0.217	8	600	0.000	0.013	98.60	98.60	97.18	97.167	1.426
48	RWHP	EXTERNAL	1292	29052	30344	203.912	0.204	0.210	600		0.282743339	1.884955592	0.15	0.015	0.77	0.217	14	600	0.000	0.023	98.60	98.60	97.17	97.144	1.444

719 m

ANOJ TEVATIA
B. Arch (Hons)
CA/95/10739

PROPOSAL FOR AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DEEN DAYAL JAN AWAS YOJNA ON AN AREA MEASURING 7.89375 ACRES FALLING SECTOR-33, VILLAGE-DHUNELA, TEHSIL-SOHNA, DISTRICT-GURUGRAM, HARYANA.

SUB WORK NO. - IV					**Road Work**	
Sl No	**DESCRIPTION**	**Qty**		**Rate**		**AMOUNT (In Lacs)**
1	Provision for leveling - earth filling / cutting as per site conditions. (In Acres)	7.89375				11.84
	~~Area = 7.89375 Acre~~	~~8.000~~	~~Acre~~	~~150000~~ ACR	Rs.	~~10.00~~
2	Construction of road by:-	~~5842.000~~	Sq.m	1200/-	Rs.	~~70.10~~
2.1	~~Providing Subgrade of min. 95%~~ PD.	5275				63.30
2.2	~~100mm thk. W.B.M. with 50-90mm stone~~ 200 mm GSB					
2.3	~~75mm thk. W.B.M. with 40-63mm stone~~ 250 mm Stone aggregate					
2.4	~~75mm thk. W.B.M. with 20-50mm stone~~					
2.5	~~5~~0mm thk. premix B.M.					
2.6	~~2~~0mm thk. ~~P.~~C. MSS.					
4	Provision for Kerbs & channels of CC 1:2:4 footpath on 9 & 12 m	1920	mtr.	600/-	Rs.	11.52
5	Provision for ~~making approach to each block for C.C. pavements L.S.~~ roads on both side	2880	@	~~50000~~ 600/-Sqm	Rs.	17.28 ~~0.50~~
6	Provision of guide maps & other unforseane & indicater boards (L.S.)	1	@	~~50000~~ (L.S)	Rs.	0.50
7	Provision for traffic light arrangement - L.S.	1	@	~~50000~~ (L.S)	Rs.	1.00 ~~0.50~~
8	Provision for ~~foot paths for 9 &24 mtr~~ roads ~~-~~ Pavements CC 1:2:4 in Commercial area i.e. 50% of the area 1235.17 sqm	~~1920~~ 620 Sqm	~~mtr.~~ Sqm	600/-~~600~~	Rs.	3.72 ~~11.52~~
9	Provision of carriage of material and unforseen items - L.S.	1	@	100000	Rs.	1.00
	TOTAL				**Rs.**	~~105.64~~ 110.16 Lacs
	Add 3% contingencies & PE Charges				**Rs.**	~~3.17~~ 3.30 Lacs
	TOTAL				**Rs.**	~~108.81~~ 113.46 Lacs
	Add 49% Department charges, price esclation, other for unforseen				**Rs.**	~~53.32~~ 55.60 Lacs
	TOTAL				**Rs.**	~~162.13~~ 169.06 Lacs

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	Road Work					
S. No.	**Name of Road**	**Length of Road (in Mtrs.)**		**Width Of the Road (Mtrs.)**	**C.C Width (Mtrs.)**	**Area in Sqm.**
	A	**B**		**C**	**D**	**B x D**
1	Road (A)	270.675		9 M	5.5	1488.71 ~~1624.05~~
2	Road (B)	54.5		9 M	5.5	299.75 ~~327.00~~
3	Road (C)	156.735		9 M	5.5	862.04 ~~940.41~~
4	Road (D)	64.225		9 M	5.5	353.23 ~~385.35~~
5	Road (E)	64.8		9 M	5.5	356.40 ~~388.80~~
6	Road (F)	44.58		9 M	5.5	245.19 ~~267.48~~
7	Road (G)	64.8		9 M	5.5	356.40 ~~388.80~~
8	Road (H)	48.195		12 M	7.5	265.07 ~~337.37~~
9	Road (I)	40.756		12 M	5.5	224.15 ~~244.54~~
10	Road (J)	62.285		12 M	5.5	342.56 ~~373.71~~
	Total	**871.551**				4793.50 ~~5277.50~~
	Add 10 % for curves					479.35 ~~527.75~~
	Total					5272.85 ~~5,805.25~~
	Say					~~5,842.00~~ 5275.0
	Total Length of road	871.551				
	Add 10% curves	87.1551				
	Total Length	958.706				
	Say	**960**	**Mtrs.**			
	CC foot paths on both side 9 mtr & 12 mtr road					
	CC foot paths on both side =2m x length of road	1920				

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PROPOSAL FOR AFFORDABLE RESIDENTIAL PLOTTED COLONY UNDER DEEN DAYAL JAN AWAS YOJNA ON AN AREA MEASURING 7.89375 ACRES FALLING SECTOR-33, VILLAGE-DHUNELA, TEHSIL-SOHNA, DISTRICT-GURUGRAM, HARYANA.

Sub Work No-V					**Street Lighting**	
Sl No	**DESCRIPTION**	**Qty**		**Rate**		**AMOUNT (In Lacs)**
1	Providing street lighting on roads as per standard specifications on HVPN	7.89375		2.50		
	Area = 7.89375 Acre	~~8.000~~	@ cost	~~100000~~	Rs.	~~8.00~~ 19.73 las
	TOTAL				**Rs.**	~~8.00~~ 19.73 las
	Add 3% contingencies & P.E. Charges				**Rs.**	~~0.24~~ 0.59 las
	TOTAL				**Rs.**	~~8.24~~ 20.32 las
	Add 49% Department charges, price esclation, other for unforseen charges.				**Rs.**	~~4.04~~ 9.95 las
	TOTAL				**Rs.**	~~12.28~~ 30.27 las

c.o. to final abstract of cost

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Sub Work No-VI					**Plantation & Road side trees**	
Sl 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) 2674.737	0.6609		1.50 lacs		0.99 lacs
	Area =~~1721.14~~ Sq.m= 0~~.425~~	~~0.425~~	@	~~500000~~	Rs.	~~2.13~~
2	Providing & Planting of trees with tree guards on roads at 4 m intervals					
	Total Road Length (M.)	960				
	Trees @ 12 M. c/c	80				
	Say (2 x 80) = 160 Or Say	160				
	Cost of One Tree :-					
	Excavation (Rs.) ~~200~~/- 60.0			~~200~~		
	Manure (Rs.) ~~500~~/- 90.0			~~500~~		
	Tree Plants (Rs.) ~~5000~~/- 150.0			~~5000~~		
	Tree Guards (Rs.) ~~2000~~/- 1000.0			~~2000~~		
	Total Cost (each) 1300/-			~~7700~~		2.08
	Cost of Total trees	160	@	1300/~~7700~~	Rs.	~~12.32~~ 3.07
	TOTAL				**Rs.**	~~14.45~~ 0.09
	Add 3% contingencies & PE. Charges				**Rs.**	~~0.43~~ 3.16
	TOTAL				**Rs.**	~~14.88~~ 1.54
	Add 49% Department charges, price esclation, other for unforseen charges.				**Rs.**	~~7.29~~ 4.70
	TOTAL				**Rs.**	22.17

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हरियाणा शहरी विकास प्राधिकरण
HARYANA SHEHRI
VIKAS PRADHIKARAN

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

C.E.I-No.
Dated:

Annexure-A

SUB:- Approval of Service Plan/Estimates for Affordable Residential Plotted Colony (Under Deen Dayal Jan Awas Yojna-2016) measuring 7.89375 acres area (License No. 58 of 2019 dated 8.3.2019)in Sector-33, Village Dhunela, Tehsil Sohna, Distt. Gurugram being developed by M/S. Global Horizon Holding Pvt. Ltd.

Technical note and comments:-

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

HSVP

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C.E.-I No:

Dated:

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

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

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

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

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

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

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

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

Superintending Engineer (HQ),
For Chief Engineer-I, HSVP,
Panchkula.

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SUB WORK NO. VII: **MTC. CHARGES AND RESURFACING OF ROADS.**

Sl 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.	7.89375		7.50 lacs		59.20
	Area = 7.89375 Acre	~~8.000~~	@	~~500000~~	Rs.	~~40.00~~
2	Provision for resurfacing of roads after first five years of maintenance i.e. 50mm thick B.M. with 20mm thick premix carpet with seal coat with mechanical paver. (Sqm)	5275 ~~5,842~~	@	600	Rs.	31.65 ~~17.53~~
3	Provision for resurfacing of roads after 10 years of Mtc. i.e. 20mm thick premix carpet with seal coat with mechanical paver. (Sqm)	5275 ~~5,842~~	@	750	Rs.	39.56 ~~14.61~~
	TOTAL				**Rs.**	130.41 ~~72.13~~
	Add 3% contingencies for PE charges				**Rs.**	3.91 ~~2.16~~
	TOTAL				**Rs.**	134.32 ~~74.29~~
	Add 49% Department charges, price esclation, other for unforseen charges.				**Rs.**	65.81 ~~36.40~~
	TOTAL				**Rs.**	200.13 ~~110.70~~

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