LC-3804

SERVICE ESTIMATE, DESIGN REPORT AND CALCULATION OF INTERNAL DEVELOPMENT WORKS

FOR

REVISED LAYOUT OF "AFFORDABLE PLOTTED COLONY (UNDER DEEN DAYAL JAN AWAS YOJNA - 2016)" FOR LAND AREA MEASURING 12.41875 ACRES (LICENSE NO. 23 OF 2019 DATED 20.02.2019) IN REVENUE ESTATE OF SECTOR - 35, SOHNA, DISTT. – GURUGRAM BELONGING TO LION INFRADEVELOPERS LLP, VALLABHAM BUILDCON PVT. LTD. AND VIBHOR HOME DEVELOPERS PVT. LTD. IN COLLABORATION WITH M/S LION INFRADEVELOPERS LLP.

ARCHITECT:

VMA ARCHITECTS,

1023, JMD MEGAPOLIS, SECTOR 48, GURUGRAM-122001

MEP CONSULTANT:

PRIFACTOR ENGINEERS,

109, ANSAL LAXMIDEEP TOWER, LAXMI NAGAR, DELHI-110092

SERVICE ESTIMATE, DESIGN REPORT AND CALCULATIONS OF INTERNAL DEVELOPMENT WORKS FOR PROPOSED "AFFORDABLE PLOTTED COLONY (UNDER DEEN DAYAL JAN AWAS YOJNA - 2016) LAND AREA MEASURING 12.41875 ACRES (LICENSE NO. 23 OF 2019 DATED 20.02.2019) IN SECTOR 35, SOHNA, DISTT. GURUGRAM BELONGING TO LION INFRADEVEOPERS LLP, VALLABHAM BUILDCON PVT.LTD. AND VIBHOR HOME DEVELOPERS PVT. LTD. IN COLLABORATION WITH M/S LION INFRADEVELOPERS LLP

Sohna town of Haryana State situated on NH 248-a road at a distance of 54 Km from Delhi. Being in the national capital region, the town has developing tendency and potential. Further, it has also started sharing the growing residential, commercial and Industrial load of Delhi. In order to review the growing pressure of population in National Capital of Delhi, it has been decided by the Haryana Government to develop various infrastructure facilities in Sohna, Distt. - Gurugram Urban Complex. This report is for a part of service estimate for proposed "Affordable Plotted Colony" (under Deen Dayal Jan Awas Yojna - 2016) measuring 12.41875 acres (License No. 23 of 2019 dated 20.02.2019) in Sector 35, Sohna Distt. Gurugram being belonging to Lion Infradevelopers LLP, Vallabham Buildcon Pvt. Ltd. and Vibhor Home Developers Pvt. Ltd. in collaboration with M/s Lion Infradevelopers Llp has been prepared with the following provisions which are as under: -

1. WATER SUPPLY

The source of water supply in this area is by HSVP Mains. It has been proposed to construct underground tanks of capacity as per attached details (Annexure-I: Water requirement chart and water storage capacity) and to location for domestic purpose and for fire protection. The underground tanks will be fed from the HSVP based supply, which will feed O.H. tanks on the roof of the Building and has been designed as per the Hazen Williams formula. Presently there is proposed HSVP W/S in this area. However the provision of tube well have been taken due to non availability of water but after getting the approval from the competent authority through tube wells /tankers / any other approved source till HSVP W/S will made available. The proposed tube wells shall be 510mm bore drilled with reverse rotary rig and installed with 100mm i/d housing pipe and 80mm i/d slotted tube as strainer, hence the provision of Two Nos Tube Wells have been taken in this estimate.

DESIGN

The scheme has been designed for population of 4160 persons considering @ 5 13 5 persons/apartment for Affordable Plotted Colony and other provision etc. The combined quantum of water supply (domestic + flushing) per head / day has been taken as 135 Liters per head per day as per design calculation and in relevance to the national building codes of 2016.

3962

PUMPING EQUIPMENTS

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

2. SEWERAGE

The scheme is designed for sewer connecting to the STP and bypass connection to HSVP sewer scheme. The sewer lines have designed for three times average D.W.F. in relation to water supply demand. It has assumed that about 80% of the domestic and flushing water supply shall find its way into the proposed sewer. Sewer lines shall be running by gravity and discharge to STP proposed. Treated water will be used for lirigation & Flushing purpose (through recycling) under the pipeline system. R.C.C.Np2 class pipes have been used for the sewage system.

3. STORM WATER DRAINAGE

It has been proposed to lay RCC NP3 and NP2 pipes with required number of manholes for disposal of storm water, which will be connected to the HSVP drain. The intensity of rain fall has been taken as 25mm per hour. A minimum size of 250mm i/d R.C.C. Np3 pipes for storm water drain will be provided and designed as per manning's formula. Necessary provision of rainwater harvesting arrangement has also been taken in this estimate.

4. ROADS

Road Parking and Pavement have been provided to above areas and estimates prepared as revised specifications adopted by HSVP.

5. STREET LIGHTING AND ELECTRIFICATION

Provision for external lighting and electrification of proposed area has been made.

6. HORTICULTURE

Estimate and details of plantation, landscaping, signage etc. have been included.

7. FIRE FIGHING

Provision of Fire Fighting system has been made.

8. Provision for Electric Panel or ESS provision has also been made in this estimate

9. SPECIFICATIONS

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

10. RATES

The estimate has been used the present market rates

11. COST

1084-10

The Total cost of scheme including cost of all services works out to Rs. 1034.37 Lacs (Rupees Ten Crores Thirty Four Lacs and Thirty Seven Thousand Only) including 3% contingencies and 49% departmental charges + Price escalation and cost per acre comes out to Rs. 83.29-Lacs.

87-30 Lacs

FOR LION INFRADEVELOPERS LLP

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Fire water will be replenished from the domestic and raw water tanks.

III.

Garden Irrigation Requirement (For Total Area)	=15.67 KLD

IV. Total Water Requirement for UGT

Raw Water Tanks	= 2 x 100 KLD	
Domestic Water Tanks	= 2 x 75 KLD 2 x 100 KLD	
Flushing Water Tanks	= 1 x 125 KLD 1 x /00 KLD	

V. Tube Well

Tube Well		For UGT	
a)	Yield	= 15 K.L. / Hr.	
b)	Working Hour per day	= 16 Hr. / per day	
c)	Total water demand	= 484.6-M3 / day	
d)	Number of tube well required (water Demand / Discharge / Hr. working Per day)	= 2.01 Nos 1.42	
	Say	= 2 Nos	

(Water to the proposed development is to be supplied by HSVP. However, consider 2.00 Nos TW's to install for proposed requirement of water for augmentation / standby purposes and provision has also been taken in the estimates due to non-availability of water but after getting the approval from the competent authority.

I. Pumping Machinery for Tube wells

a) Gross Working Head	= 80 Mtr

b) Average fall in S.L	= 2 Mtr
c) Depression Head	= 6 Mtr
d) Friction loss in main	= 10 mtr
Total	= 98 Mtr
e) Discharge	= 15000 LPH (Or 4.17 LPS Say 4.50 LPS)
f) Horse Power	= 9.80 HP
HP = (4.50 X 98) / (75 x 0.60)	Say = 10.00 H.P.

It is proposed to provide 2 No pumping set of 4.50 LPS discharge at 98 Mtr head (2W)

II. Boosting Machinery for domestic water for UGT

	338
Total Water Requirement	= 314.7 KLD
Pumping per hour @ 8 hr. pumping / day	= 314.7/8 KL / hr.
	= 39.33 K L / hr.
	= 655.25 lpm = 10.93 lps
	Say 2 No. 6.00 lps each
Gross working head	For UGT
Suction lift	= 5.00 mts.
Frictional loss in mains & Specials	= 10.00 mts.
Clear Head required	= 30.00 mts.
Total	= 45.00 mts
Say	= 45.00 mts
Pump HP	= (6.00 x 45) / (75 x 0.60)
	= 6.00 H.P.
54"	Say = 6.00 H.P.

It is proposed to provide 3 No of pumping set of 6.00 lps discharge at 45 mts Head each (2W + 1S) for UGT.

III. Boosting Machinery for flushing water at STP

Total Water Requirement	= 169.9 KLD
Pumping per hour @ 8 hr. pumping / day	= 169.9/8 KL / hr.
	= 21.23 KL / hr.
	= 5.9 lps
	Say 2 No. 6.00 lps each
Gross working head	
Suction lift	= 5.00 mts.
Frictional loss in mains & Specials	= 10.00 mts.
Clear Head required	= 30.00 mts.
Total	= 45.00 mts
Say	= 45.00 mts
Pump HP	= (6.00 x 45) / (75 x 0.60)
	= 6.00 H.P.
	Say = 6.00 H.P.

It is proposed to provide 2 Nos of pumping set of 6.00 lps discharge at 45 mts Head each (1W + 1S).

IV. Boosting Machinery for Irrigation water

Total Water Requirement	= 15.00 KLD
Pumping per hour @ 5 hr. pumping / day	= 15/2 K L / hr.
	= 7.50 KL / hr.
	= 125.00 lpm = 2.08 lps
	Say = 2.20 lps each
Gross working head	
Suction lift	= 5.00 mts.
Frictional loss in mains & Specials	= 3.00 mts.
Clear Head required	= 15.00 mts.
Total	= 21.00 mts
Say	= 21.00 mts
Pump HP	= (2.20 x 21) / (75 x 0.60)
	= 1.03 H.P.
Sa	y = 1.05 H.P.

It is proposed to provide 2 No. of pumping set of 2.2 lps discharge at 21 mts Head each (1W+1S).

FLOW TO SEWAGE TREATMENT PLANT

505 Total Water Requirement = 314.7 KLD for domestic & 169.9 KLD for flushing

I. 85% of total Domestic Water Demand = 85% of 314.7 KLD = 267.495 KLD

II. 100% of total Flushing Water Demand = 100% of 169.9 KLD = 169.90 KLD

Total = 437.395 KLD

Take up 80% 18 STP = 404 KLD

Say 440 KLD

Add 5% marginal fretor = 20 KLD

Proposed STP Capacity = 440 KLD Or 0.44 MLD

424 KLD

Proposed = 440 KLD STP

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FINAL ABSTRACT OF COST

SR. NO.	SUB WORK	DESCRIPTION	Amount (Rs. in Lacs)	TWACHES CONTROL
1.	SUB WORK NO. I	WATER SUPPLY SCHEME	165.51	195.35
2.	SUB WORK NO. II	SEWERAGE SCHEME	148.97	150.90
3.	SUB WORK NO.III	STORM WATER DRAINAGE	99.86	117-77
4.	SUB WORK NO.IV	ROADS & FOOT PATHS	240.24	240.26
5.	SUB WORK NO.V	STREET LIGHTING	47.64	47.65
6.	SUB WORK NO.	HORTICULTURE (PLANTATION & ROAD SIDE TREES)	7.16	7.17
7.	SUB WORK NO. VII	MTC CHARGES INCL RESURFACING OF ROADS AFTER 1st 5 YEARS AND 2nd YEAR OF MTC AS/HUDA	324.99	325-00
		TOTAL	1034. 37	1084.10

1084-16

87.30

Cost Per Acre = Rs. 1034.37 Lacs / 12.41875 = 83.29 Lacs Per Acre.

FOR LION INFRADEVELOPERS LLP

AUTHORISED SIGNATORY

Checked subject to comments in forwarding letter No. 45.182. Dt.12 03 2021. and notes

attached with the estimate

HSVP Division No. VI Gurugram

> Superintending Engineer, HSVP Circle-II, Gurugean

Director Town & Country
Planning Haryana
Chandigari

Superintending Engineer (HQ)
or Chief Engineer 1 HSVP

SUB WORK No. 1 (Abstract of Cost)

WATER SUPPLY SCHEME

SR. NO.	SUB WORK	DESCRIPTION	AMOUNT (Rs. In Lacs)
1	Sub Head No. 01	Head Works	41.12
2	Sub Head No. 02	Plumbing Machinery	11.00
3	Sub Head No. 03	Water Supply Distribution (Domestic, Flushing & Rising Main pipe)	52.61
4	Sub Head No. 04	Irrigation	3.12
		TOTAL	107.85
		Add 3% contingencies & PH Charges	3.2355
		TOTAL	111.08
		Add 49% Departmental charges + Price escalation	54.43
		G. TOTAL	165.51
		Say in Lacs	165.51

(C.O. to Final Abstract of Cost)

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Sub Work No. 1 Sub Head No. 01

Water Supply Head Works

Sr. No.	Description	Amount in Rs.	
1	Construction of U.G. Tanks including pipes, valve & Specials. 350 KLD @ Rs. 3000/- per KLD	10,50,000/-	2250,000
	500 4500		
2	Provision of Construction of Boosting Station 1 Nos @ Rs. 200000/- each	3,00,000/-] '
	3,0000		_
3	Boring and installing tube well with reverse rotary rig complete with pipe and strainer to a depth of about 120 Mtr complete in all respect . 1 Nos @ Rs. 1000000/- each	10,00,000/-	
4	Provision of Construction of Tube well Chambers of Size 1.50m x 1.50m	1,00,000/-	-
	complete in all respect. 1 Nos @ Rs. 100000/- each. (Housing T.W)		-
5	Provision for Carriage of material & other unforeseen items L.S	50,000/-	
6	Provision of rising main for tube well upto UGT L.S to by pass arrangement 100mm dia 170m @Rs.1250/-	212·S2 2,12,000/-	0/-
7	Provision for footpath, lawn, hedges at T.W boundary wall, boosting station (L.S)	5,00,000/-	
8	Provision for staff office for maintenance Staff (L.S)	10,00,000/-	_
	Total	41,12,000/-	5412500
	Say in Lacs	41.12 Lacs	

54.13

(C.O. to Abstract of cost of Sub Work No. I)

Sub Work No. 1

Sub Head No. 02

Water Supply Pumping Machinery

Sr. No.	Description	Amount in Rs.
1	Providing and installing transfer pumping set of following capacities for domestic water Supply with specials.	4 5000
	6.00 lps at 45 mts head 3 No. (2W+1SB) - @ Rs. 150,000/- each Set (6 00HP)	1,50,000/-
2	Providing and installing pumping set of following capacities for Flushing water supply.	3.00 and
	6.00 lps at 45 mts head – 2 No. (1W + 1SB) @ Rs 1,00,000/- 1 Set (6 HP each)	1,00,000/-
3	Providing and installing Submersible pump for tube wells with specials. Complete in all respects	125000
	4.50 lps at 98 mts head - 2-No. (2W) @ Rs 2,00,000/- 1 Set (10 HP each)	2,00,000/-
4	Provision for making foundations & erection of pumping machinery.	1,50,000/- 1,00,000
5	Provision for pipes. valves & specials inside boosting chamber.	1,00,000/-
6	Provision for electric services connection including electric fittings for boosting chambers and pump chamber etc.	2,50,000/-
7	Provision for carriage of materials and other unforeseen items L.S.	1,50,000/ 1 W M
	Total	11,00,000/-
	_Say in Lacs	-11.00 Lacs

(C.O. to Abstract of cost of Sub Work No. I)

8 Prov. 2 Installing of Pumping Set for I gation 2205 at 21, wm Head, 2 HP 2NG (IW+IS) @ No 50,000/

1,00,000

1525000)-

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Sub-Work No. 1 Sub Head No. 03

Water Supply Water Supply Distribution & Rising Main Pipe

Sr. No.	Description	Amount in Rs.	
1	Providing, laying, jointing & testing pipe lines including cost of excavation etc complete in all respects.		
i)	80mm dia D.I. Pipe 767-Mtr @ Rs. 1750/- per Mtr	13,42,250/-	161200
ii)	100mm i/d D.I. Pipes - 787 Mtr @ Rs. 2250/- per Mtr	17,70,750/-	8500
iţi)	150mm i/d D.I. Pipes 520 Mtr @ Rs. 2750/- per Mtr	14,30,000/-	850,0
2	Providing and fixing sluice valve including cost of surface box and masonry chamber etc. complete in all respect.		
	a) 80mm i/d 18 No. @ Rs. 7500/- each	1,35,000/-	1800
	b) 100mm i/d 9 No. @ Rs. 10000/- each	90,000/-	10800
	c) 150mm i/d 1 No. @ Rs. 15000/- each	15,000/-	
3	Providing and fixing indicating plates for sluice valve 28 No @ Rs. 1000/-	28,000/-	
4	Provision for carriage of materials and other unforeseen items.	1,00,000/-	
5	Provision for making connection with HUDA Pipe on master road	2,00,000/-	
6	Provision for cutting the road and making good the same.	1,50,000/-	
	-Total	_52,61,000/-	
S	Say in Lacs	52.61 Lac	

(C.O. to Abstract of cost of Sub Work No. I)

Prov. 2 fixing of free hydrants

with acceptories

37 Non C le 15000 |
37 Non C le 15000 |
8 D. G., lump 2850 LPM, 45 M 9,00,000/2

Head, 48 HP 60 KVA

5517000/2

Say Ro 55.17 Laleh.

Sub-Work No. 1 Sub Head No. 04

Water Supply Irrigation

Sr. No.	Description	Amount in Rs.
1	Providing. Laying, jointing and testing UPVC Pipe lines suitable for 6 kg pressure including cost of fittings, valves, connection etc. complete in all respect.	60,000
a)	25mm dia - 200 M @ Rs. 500/- Per Mtr.	1,00,000/-
2	Providing and fixing 25mm dia irrigation hydrant valve complete in all respect. 25 Nos @ Rs. 3500/- each.	87,500/-
3	Provision for carriage of materials and other unforeseen items L.S.	1,00,000/-
4	Provision for indicating plate with safety box etc. complete in all respect. 25 Nos @ Rs. 1000/- each.	25,000/-
		272500_
	Total	3,12,500/-
	Say in Lacs	3.12 lac 2 : 73

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(C/O To Abstract of Cost for Sub work No.1)

Sub-Work No. II

SEWERAGE SCHEME

Sr. No.	Description Lection of the group	Amount in Rs.	
1	Sewer Pipes - Providing and laying non pressure NP2 class (medium duty) R.C.C. pipes conforming to IS 458 with collars jointed with stiff mixture cement mortar in the proportion of 1:2 (1 cement: 2 fine sand) including testing of joints etc. complete. (all round and upto haunching shall be paid separately)		*8
	a) 200 mm Diameter i/d 1700 M @ Rs. 1400/- per Mtr	2380000.00/-	2125000
	b) 250 mm Diameter i/d 163 M @ Rs. 2000/- per Mtr	_326000.00/-	2125000
	c) 300 mm Diameter i/d 10 M @ Rs. 2600/- per Mtr	2 6000.00 /-	22500]
	2250		132)
2	Provision of lighting and watching etc (L.S)	1,00,000/-	
3	Provision for corriage of Margran &	2,00,000	
3	Provision for construction of Sewerage Treatment Plant (STP) including the cost of tertiary treatment level with recycling storage tank and machinery with all arrangement etc. complete in all respect 4.40KLD or (0.44MLD) Capacity LS. @ 16000 (- Per KLD)	68,75,000.00/- 70,40,000/	
5	Provision for maley connection und	1,00,000	
	existe proposed Total sewer line.	9707000.00/-	832000).
	Add 3% contingency & P.H. Services	291210/- 2	949606
	Total	9998210/- 101	26960/-
	Add 49% Department charges + Price Escalation	4 899122: 9/- 40	1622101-
	G. Total	The state of the second sections and the second sections and the second section sections are second sections as the second section sec	089170-
	Say in Lacs	148.97 Lacs	

(C/O to Final Abstract of Cost)

Sub-Work No. III

STORM WATER DRAINAGE SCHEME

Sr. No.	Description NB3	Amount in Rs.	
1	Storm Water Pipes - Providing and laying non pressure NP2 class (medium duty) R.C.C. pipes conforming to IS 458 with collars jointed with stiff mixture cement mortar in the proportion of 1:2 (1 cement: 2 fine sand) including testing of joints etc. complete. (all round and upto haunching shall be paid separately)		
	a) 150 mm Diameter i/d = 150 M @ Rs. 650/- per Mtr	97,500.00/-	
	b) 200 mm Diameter i/d = 1500 M @ Rs. 850/- per Mtr _	12,75,000.00/-	
	c) 250 mm Diameter i/d = 298 M @ Rs. 1020/- per Mtr-	3,03,960.00/-	
0	d) 300 mm Diameter i/d = 424 M @ Rs. 1250/- per Mtr	5,30,000.00/- \ 5,29,100:00/- 7 6,61,500.00/- 8	80500
(6)	e) 450 mm Diameter i/d = 286 M @ Rs. 1850/- per Mtr	5,29,100.00/- 7	579052
(0)	f) 600 mm Diameter i/d = 189 M @ Rs. 3500/- per Mtr	6,61,500.00/- 3	505002
2	Provision for Rain Water Harvesting arrangement including the cost of screening chamber and pit with all type of pipes and other material etc. complete in all respect as per standard drawing and bore upto requirement of site etc. 9 Nos RWH @ Rs. 1,50,000/-each.	2500,500/- 13,50,000.00/-	
3	Provision for road gulley & pipe with connection 300mm dia (L.S) Provision for lighting and watching (L.S)	3,00,000.00/-	
5	Provision for timbering and shoring (L.S)	80,000.00/-	-
6	Provision for cartage of material and other unforeseen item	1,00,000.00/-	
7	Provision for making connection with HSVP storm water drain (L.S)	1,00,000.00/-	
8	Provision for temporary disposal arrangement	10,00,000.00/-	40
9	Provision for cutting of road and making road to its original condition	1,00,000.00/-	
_		CE 07.000.001	7/721.00
	Total	-65,07,060.00/-	767340x
	Add 3% contingency & P.H. Services	1,95,211.80/-	230 202
	Total	67,02,271.80/-	7903602
	Add 49% Department charges + Price Escalation, unforeseen, addendum	32,84,113.18/-	3 872 765
	G. Total	99,86,384.98/-	1177 6367
	Say in Lacs	99.86 Lacs	

117.77

(C/O to Final Abstract of Cost)

Sub Work No. IV

ROAD AND FOOTPATH

S. No.	Description	Unit	Qty.	Rate (In Rs.)	Amount (In Rs.)
1	Provision for leveling & earth filling as per site conditions	Per Acre	12.4187	150000	18,62,805.00
2	i) Providing and laying 100 mm thick PCC under pavement, cement concrete of specified grade 1:4:8 and 150 mm thick RMC grade M-40 ii) Providing and laying Bituminous road (200mm GSB, 250mm WMM, 50mm BMT, DGM 25mm MSS)	Sqm	8787	1200	1,05,44,400.00
3	Provision for kerbs and channels of C.C. 1.2:4	Meter	1440.93	600	8,64,558.00
4	Provision for arrangement of guide map and indicating board etc.	LS			2,00,000.00
5	Provision for Traffic light control	LS			1,00,000.00
6	Provision for foothpath with 100mm thick PCC under pavement cement concrete of specified grade 1:4:8 and 150mm thick RMC Grade M-40 or Bituminous road with 250 mm GSB, 300mm WMM, 50mm thick DBM & 40mm thick BC etc as per requirement of site for surface car parking & approach to Tower / Block etc.	Sqm	2161.39	600	12,96,834.00
7	Provision for carriage of material & other unforseen	LS	GUO		2,00,000.00
8	Provision for pavement in common area i.e. 50% of the area 1952.47 i.e. 1952.47/2 = 976.235 Sqm 46 - 98	Sqm	191 _92 6	600	586200 5,85,600.00
	Sub lotal			54797	1,56,54,197.00 4,69,625.91
	Add 3% contingencies & PH services Sub Total		161	24 441	1,61,23,822.91
	Add 49% Departmental Charges + Price Escalation			0976	79,00,673.23
	Total		246		2,40,24,496.14
	Say Rs. in Lacs		240	· 26 Latch	240.24

(C.O. to Final Abstract of cost)

Sub Work No. V

STREET LIGHTING

S. No.	Description	Unit	Qty.	Rate (In Rs.)	Amount (In Rs.)
1	Provision for Street Lighting at surrounding area as per standard specifications of HVPN etc. complete with CFL	Acre	12.4187	250000	31,04,675.00
	Add 3% contingencies & PH services				93,140.25
	Total				31,97,815.25
	Add 49% Departmental Charges + Price Escalation and unforseen, addendum				15,66,929.47
	Total				47,64,744.72
	Say Rs. in Lacs				47.64

(C.O. to Final Abstract of cost)

47.65

Sub Work No. VI

HORTICULTURE

. No.	Description	Unit	Qty.	Rate (In Rs.)	Amount (In Rs.)
1	Development of Lawn Areas				
а	Trenching of ordinay soil upto depth of 60cm i/c removal & stacking of serviceable material & disposing by spreading and levelling with in a lead of 50M and making up the trench aea for proper levels by filling with earth or earth mixed with manure before and after flooding trench with water i/c cost of imported earth and manure with all fitting and valve etc. complete				_
b	Rough dressing of turfed area				
c	Grassing with "Cynadon dactylon" i/c watering and maintenance of lawns for 30 days till the grass forms a thick lawn, free from weeds and fit for moving in row 7.5cm part in eighter direction				
d	Organized green 3830.63 Sqm or 0.94 acres (As per detail given in green park area calculation)	Acre	0.9466	150000	1,41,990.0
2	Providing and planting trees along boundary @12m interval (Length appx. x 1440M) = 1440/12 = 120 , 120 x 2 = 240 Say No. of trees = 250 NOS Cost details: Excavation = Rs. 60 Manure = Rs. 90 Tree Plant + Tree guared = Rs. 1150 Total Rs. = Rs. 1300				
		Each	250	1300	3,25,000.00
	Total				4,66,990.00
	Add 3% contingencies & PH services				14,009.70
	Total				4,80,999.70
	Add 49% Departmental Charges + Price Escalation, unforseen, addendum				2,35,689.85
	Total				7,16,689.55
	Say Rs. in Lacs				7.16

Sub Work No. VII

Mtc. of services and Resurfacing of Roads

S. No.	Description	Unit	Qty.	Rate (In Rs.)	Amount (In Rs.)
1	Mtc of water supply, sewer, storm water drain, roads, street light, hort, etc. for period of 10 years including operation charges full establishment etc. complete in all respects @ Rs. 7.5 lacs per acre	Acre	12.4187	7,50,000.00	93,14,025.00
2	Provision for resurfacing of roads after 5 years of 1st phase with provision of 50mm thick BM including leveling coarse and 25mm BC as per crust design whichever is safer	Sqm	8787	600	52,72,200.00
3	2nd phase after next five years of 1st phase (50mm DBM & 25mm BC or as per crust design whichever is safer	Sqm	8787	750	65,90,250.00
	Sub Total				2,11,76,475.00
	Add 3% contingencies & PH services				6,35,294.25
	Sub Total				2,18,11,769.25
	Add 49% Departmental Charges + Price Escalation and unforseen, addendum				1,06,87,766.93
	Total				3,24,99,536.18
	Say Rs. in Lacs				324.99

(C.O. to Final Abstract of cost)

325, W Lakh

SUMMARY OF DESIGN REQUIREMENT

Sr. No.	Description	Qty	Unit
1	Total Population	3961 4160	Persons
2	Total Water Requirement (Domestic)	338 -314.7	KLD
3	Total Water Requirement (Flushing)	167 154.23	KLD
4	Total Water Requirement (Horticulture)	25.0 15.67	KLD
5	U. G. Tank (Domestic)	2	No.
6	U. G. Tank (Raw)	-2	No.
7	No. of Domestic WS pumps UGT	2+1	Set
8	No. Flushing pumps	1+1	No.
9	No. of submersible pumps	2	No.
10	STP (440 KLD)	1	No.

Material Summary: Water Supply (Domestic & Flushing) and Rising Main

4	Pipe Size		Qty (in Mtr)	
Sr. No.	(in mm)	Water Supply (Domestic)	Water Supply (Flushing)	Rising Main
1	20		1200	
2	25	1200		
3	50		423	
4	65	423	43	
5	80	43	680	
6	100	680		
7	150	,		520

Grand Toral

Bown — 466 + 1146 = 1612 Mdr

100 mm — 680

= 520 mdr

Material Summary (Water Supply : Domestic)

S. No.	No	ode		Pipe Size / Length	
	From	To	65 mm	80 mm	100 mm
1	1	2	115-	115	
2	3	4		43	
3	4	5		-	115
4	4	6		_	101
5	7	8		_	115
6	9	10	157	157	
7	11	12	-33	33	Si
8	13	14		1	20
9	15	16	/	-	174
10	17	18		_	155
11	19	20	30	30	
12	21	22	88	88	
	Total Quantit	tv	423-	-43	680

Branch Pipe for Domestic (25mm) = 1200 Mtr

80000 = 466MDr 100000 = 680MDr

Material Summary (Water Supply: Flushing)

N	ode		Pipe Size / Length	
From	То	50 mm	65 mm	80 mm
1	2	115		115
3	4		43-	43
4	5			115
4	6			101
7	8			115
9	10	157		157
11	12	-33		33
13	14			20
15	16			174
17	18			155
19	20	30		30
21	22	-88		88
Total Quantit	Ту	423-	43	680
	From 1 3 4 7 9 11 13 15 17 19 21	1 2 3 4 4 4 5 4 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	From To 50 mm 1 2 115 3 4 4 4 5 4 4 6 7 8 9 10 157 11 12 33 13 14 15 15 16 17 18 19 20 30 21 22 88	From To 50 mm 65 mm 1 2 115 3 4 43 43 44 43 44 43 44 <td< td=""></td<>

Branch Pipe for Flushing (20mm) = 1200 Mtr

Rising Main

S. No.	Name of	Line	Size	Length	(in Mtr)
	From	То	mm	100	150
1	TW	UGT	150		170
2	Government Line	UGT	150		350

MATERIAL STATEMENT OF SEWERAGE SCHEME

		Design
Node no (Sewer)	Length in mtr.	Pipe size (R.C.C NP2 PIPE)
		,
1	0	200
1-2	97	200
3	. 0	200
3-2	24	200
2-8	84	200
7	0	200
7-8	101	200
9	0	200
9-8	60	200
8-6	88	250
4	0	200
4-5	78	200
5-6	38	200
6-12	24	250
16	0	200
16-17	58	200
15	0	200
15-17	29	200
17-14	62	200
13	0	200
13-14	129	200
14-11	53	200
10	0	200
10-11	103	200
11-12	51	250
12-STP	10	300
	1089MD	

200 mm i/d Pipe Length	= 916 Mtr + 784 = 1700 Mtr
250 mm i/d Pipe Length	= 163 Mtr
300 mm i/d Pipe Length	= 10 Mtr

MATERIAL STATEMENT OF STORM WATER DRAINAGE SCHEME

1914444219241		Design
Node no (Storm Water)	Length in mtr.	Pipe size (R.C.C. NP2)
1-2	88	250 400
3-2	16	250- 4 W
2-4	84 /	300 YW
5-5A	31	300 yw
6-5A	21	300- yw
5A-4	43	300 111
4-7	82 \	450
8-7	29	250 YW
7-9	89	450
10-12	130	300 Y W
11-12	93	250° Y W
12-09	74	450
09-13	41	450
14-13	115	300 yw
13-16	21	600
15-16	36 —	250 YW
16-18	40	600
17-18	36	250 4 W
18-19	128	600

250 mm i/d Pipe Length 300 mm i/d Pipe Length

450 mm i/d Pipe Length

600 mm i/d Pipe Length

= 298 Mtr

= 424 Mtr 722 mto.

= 286 Mtr

= 189 Mtr

Material statement of Road work

SR. NO.	ROAD NO.	ROAD WIDTH	LENGTH	WIDTH	AREA	
1	1	9	82.377	6	494.262	Sqm.
2	2	9	94.94	6	569.64	Sqm.
3	3	9	174.122	6	1044.732	Sqm.
4	4	9	34.233	6	205.398	Sqm.
5	5	9	154.934	6	929.604	Sqm.
6	6	9	114.968	6	689.808	Sqm.
7	7	9	148.968	6	893.808	Sqm.
8	8	9	86.696	6	520.176	Sqm.
9	9	9	61.736	6	370.416	Sqm.
10	10	9	33.944	6	203.664	Sqm.
11	11	9	86.699	6	520.194	Sqm.
12	12	9	120.7	6	724.2	Sqm.
13	13	12	44	6	264	Sqm.
14	14	24	67	2x7	938	Sqm.
	G. TOTAL				8367.902	Sqm.
	Add 5% extra	for curves			418.3951	Sqm.
	Total				8786.2971	Sqm.
				say	8787	Sqm.

Kerbs and channels

(i)	9 mtr. wide road	(1 x 1194.317)	1194.317 mtr
(ii)	12 mtr. wide road	(1 x 44)	44 mtr
(iii)	24 mtr. wide road	(2 x 67)	134 mtr
		Total	1372.317 mtr
		Add 5% extra for curves	68.62 mtr
		G. TOTAL	1440.93 mtr

2 Foothpath

(i)	9M & 12M wide road	1238.317 x 1.5	1857.4755 mtr
(ii)	24 mtr. wide road	67 x 2 x 1.5	201 mtr
	Tota	al	2058.4755 mtr
	Add 5% extra	for curves	_102.923775 mtr
	G. TOTA	L	2161.399275 mtr



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PRIFACTOR ENGINEERS

Ideate Innovate Implement

		RAINWATER H	ARVESTING	AND REUSE F	POTENTIAL		
		RAIN	WATER HARVEST	ING CALCULATION			
S.NO.	DESCRIPTION	AREA (SQ. MTR.)	RUNOFF COEFFICIENT	AVERAGE ANNUAL RAINFALL (MM)	TOTAL VOLUME AVAILABLE FROM RAINFALL (CUM/YEAR)	DESIGN HOURLY INTENSITY OF RAINFALL (MM/HR.)	RAINWATER HARVESTING POTENTIAL (CUM/HR.)
_1	ROOF TOP WATER	28704	0.85	389	9498.30	25.0	610.7
2	PAVED SURFACES, ROADS AND OTHER BUILT UP AREAS	10746	0.6	389	2510.06	25.0	161.39
3	LAWNS, GARDEN AND OTHER GREEN SPACES	2343	0.35	389	319.24	25.0	20.53
	TOTAL	41793			12327.60		792.63
	DETENTION	TIME PLANNED (MI	N)			20.00	
	TOTAL VOLUME OF H	ARVESTING PIT REQU	IRED (CUM)			264.21	
S	SURFACE AREA REQUIRED (CONSID	ERING WATER DEPTH	OF 3 MTR.) IN S	Q. MTR.		88.07	
	NO.	OF PIT PLANNED				9.00	
	SURFACE	AREA FOR EACH PIT				9.79	
	DIAMETER OF CI	RCULAR CONVENTIO	NAL PIT		A PROFESSION	3.53	
	MODULAR HARV	ESTING DIT		LENGTH (M)		2.55	
	WODOLAK HARV	ESTING PIT		WIDTH (M)		3.83	

PRIFACTOR ENGINEERS

					NATER	WATER REQUIREMENT CHART	MENT C	HART			SISSES				STATE STATES	
				W	WATER REQUIREMENT	IIREMENT		WA	WATER REQUIREMENT	MENT			FLOW TO SEWER	WER	Town Street	CBOSC EL OMATO
Sr. No.	. DESCRIPTION	AREA/REMARK	OCCUPANCY RE-CYCLED	RE-CYCLED	H	FRESH WATER		RE-CYCLED	FRE	FRESH WATER	~	RE-CYCLED	FRE	FRESH WATER	The same	SELVIED CENTER
THE PASS	· · · · · · · · · · · · · · · · · · ·			TREATED	DOMESTI	DOMESTIC HOT DRINKING	INKING	TREATED	DOMESTIC HOT DRINKING	HOT	PRINKING	rists.	DOMESTIC HOT DOINVING	HOT	DOINIVING	SCAVEN
200		SQ. MTR.	NO.	LPCD		LPCD		CPD		Cal		10096	050	- August	Colling	
-	APARTMENTS	832 FAMILIES OF 5 PERSON EACH	4160	45	70	15	v	187200	201200	00703	00000	2000	2000	13%	20%	63
2	MAINTENANCE STAFF	ASSLIMED	0,	00	000	2	, ,	201700	231200	05400	20000	18/500	74/520	46800	10400	491920
		ASSOINTED	07	707	07	0	2	200	200	0	20	200	170	0	25	395
2	FILTERATION BACKWASH	5% OF THE TOTAL DEMAND						9370	14570	3120	1043	9370	14570	3130	1043	20100
4	EXTERNAL IRRIGATION - 4000 SQ. MTR. APPROX. (DEMAND TO BE VERHIED FROM THE LANDSCAPE CONSULTANT)	JANUARY TO APRIL - 5 LIT,/SQ. MTR. MAY - JUNE - 6 LIT,/SQ. MTR. JULY - SEPTEMBER - 2 LIT,/SQ. MTR. OCTOBER - DECEMBER - 3 LIT,/SQ. MTR.						15667							Ž.	60102
		TOTAL						212437	305970 65520	65520	21893	195770	חרסטא חאכראר		11460	220440
Springs.	TOTAL (CONSID	TOTAL (CONSIDERING REDUCTION IN DEMAND @ 20% BY USING LOW FLOW FIXTURES)	BY USING LOW	FLOW FIXT	URES)		8	169949	244776 52416	52416	17514	157416	200808 20036		0174	520418
	TOTAL RECYCLED TREATED WATER DEMAND	TED WATER DEMAND	169.9	KLD	MOST SERVICE	SH DOLOGON II	UNDERGR	UNDERGROUND STORAGE CAPACITY	CAPACITY			200	00000	39330 91	4/TC	442355
Distance of the last	TOTAL FRESH WATER DEMAND	ATER DEMAND	314.7	KLD	のなった	RAW WATE	R TANK (60	RAW WATER TANK (60% OF 1 DAY REQ.)	100	189 KL		MUNICIPA	MUNICIPAL CONNECTION	ON CE SIE	160.01	MANA CHANGETTE
1	FLOW TO SEWER/SEWAGE TREATMENT PLANT	GE TREATMENT PLANT	442.4	KLD	TREA	TED FRESH	WATER TAN	TREATED FRESH WATER TANK (40% OF 1 DAY BEO.)	Y REO.)			ROBEWEIL	BOREWELL FLOW PATE BEO	000	30.24	MINI DIAMETER
												DONELLE	TLOW NATE	אבת,	39,34	COM/HR





PRIFACTOR ENGINEERS

leate innovate implement

	DOMESTIC WATER TREATMEN	at the asset with the country of the	
5 - TVI	GROSS DOMESTIC WATER REQUIREMENT	315	KLD
A A	Description	Value	Unit
1	Filter Feed Pump Capacity Calculation		
1.1	Operational Hours	14	Orac
1.2	Flow Rate	14 22.5	Hrs.
1.2	Flow Nate	374.7	m3/hr
		6.2	Lit./min.
1.3	Safety Factor @ 10%	0.6	Lit./sec. Lit./sec.
1.4	Calculated Flow Rate	6.9	Lit./sec.
1.5	Selected Flow Rate (1W+1S)	7.0	Lit./sec.
2	Head Loss Calculation		Litysec
2.1	Length of Horizontal Pipes	10.0	mtr.
2.2	Static Head	1.5	mtr.
2.3	Total Length of pipes	11.5	mtr.
2.4	Residual head required	15	mtr.
2.5	Discharge through pipe	0.0070	cum/sec
2.6	Diameter of pipe	77.1	mm
2.7	No. of Bends and fittings in pipe	5	No.
2.8	Coefficient of roughness	1.0	
2.9	Resistance Coefficient of valves and fitting	6.0	
2.10	Gravitational acceleration	9.8	m/sec^2
2.11	Velocity of flow	1.5	m/sec
2.12	Major Head Loss (Modified Hazen williams)	0.3	mtr.
2.13	Minor Head Loss	0.7	mtr.
2.14	Total Head Loss	1.0	mtr.
2.15	Head of Pump Required	17.5	mtr.
2.16	Adding 10% Safety Factor	1.8	mtr.
2.17	Head of Pump	19.3	mtr.
2.18	Head of Pump Selected	25.0	mtr.
В	Domestic Water Transfer Pump		
1	Capacity Calculation		
1.1	Operational Hours	6	Hrs.
1.2	Flow Rate	52.5	m3/hr
		874.2	Lit./min.
	National Control of Control of Material Institute of Control of Co	14.6	Lit./sec.
1.3	Safety Factor @ 10%	1.5	Lit./sec.
1.4	Calculated Flow Rate	16.0	Lit./sec.
1.5	Selected Flow Rate (2W+1S)	8.0	Lit./sec.
2	Head Loss Calculation		
2.1	Length of Horizontal Pipes	1000.0	mtr.
2.2	Static Head	25.0	mtr.
2.3	Total Length of pipes	1025.0	mtr.
2.4 2.5	Residual head required	10	mtr.
2.5 2.6	Discharge through pipe	0.0080	cum/sec
2.6	Diameter of pipe No. of Bends and fittings in pipe	82.4	mm
2.8	Coefficient of roughness	15	No.
2.9	Resistance Coefficient of valves and fitting	1.0	
.10	Gravitational acceleration	9.8	m leases
.11	Velocity of flow	1.5	m/sec^2
.12	Major Head Loss (Modified Hazen williams)	27.0	m/sec
.13	Minor Head Loss (Woothed Hazeri Williams)	0.7	mtr. mtr.
.14	Total Head Loss	27.7	mtr.
.15	Head of Pump Required	62.7	mtr.
.16	Adding 10% Safety Factor	6.3	mtr.
.17	Head of Pump	69.0	mtr.
.18	Head of Pump Selected	70.0	mtr.
	Multigrade Filter	70.0	mus
E	The state of the s	25.2	m3/hr
	Flow of Filtration system		1113/111
l. 1	Flow of Filtration system Total no. of filters		
E 1.1 1.2	Total no. of filters	2	No.
.1			



PRIFACTOR ENGINEERS

deate innovate implement

	DOMESTIC WATER TREATMEN	TSTATION	
	GROSS DOMESTIC WATER REQUIREMENT	315	KLD
ir. No.	Description	Value	Unit
1.6	Diameter of filter	1070	mm
1.7	Diameter of filter selected	1000	mm
F	Activated Carbon Filter		
1.1	Flow of Filtration system	25.2	m3/hr
1.2	Total no. of filters	2	No.
1.3	Design flow of each filter	12.6	m3/hr.
1.4	Filtration Rate	14	m3/m2/hr.
1.5	Therefore surface area required	0.90	m2
1.6	Diameter of filter	1070	mm
1.7	Diameter of filter selected	1000	mm

PRIFACTOR ENGINEERS

Nelocit in m/s i	Peak Discharge (LPS)					MANNING'S CALCULA	MANNING'S CALCULA	ANNING'S CALCULA	ALCULA	2	N - SEWER Design	ign			level	at ctart	Janol	
16.17 8.09 0.00 0.00 0.00 16.17 8.09 0.05 0.00 0.90 0.00 16.17 8.09 0.05 0.00 0.90 0.00 16.17 8.09 0.06 0.00 0.90 0.00 16.17 8.09 0.00 0.00 0.90 0.00 16.17 8.09 0.00 0.00 0.90 0.00 16.17 8.09 0.00 0.00 0.90 0.00 16.17 8.09 0.00 0.00 0.90 0.00 16.17 8.09 0.00 0.00 0.00 0.00 16.17 8.09 0.00 0.00 0.00 0.00 16.17 8.09 0.00 0.00 0.00 0.00 16.17 8.09 0.00 0.00 0.00 0.00 16.17 8.09 0.00 0.00 0.00 0.00 16.17 8.09 0.00 0.	A) West of Street	Lengtin in mtr.	Seif(LPM)	Self	infiltration @ 10%	Add.	Total	Mannings	Mannings constant Slope 1 in	Pipe size	Velocity in m/s	Discharge in Ips(full flow)	Discharge in Ips(half flow)	Fall in metre	G.L.	at stant	G.L.	at end
135.6 226 0.023 0.021 2.69 0.01 1.50 1.50 1.50 1.51 <	0.25	0	11.3	0.19	0.02	0.00	0.21	0.01	150	150	1900	71.31	000					
565 0.09 0.01 0.09 0.01 1.50 0.09 0.00	0.00	97	135.6	2.26	0.23	0.21	2.69	0.01	150	150	10.0	10.17	8.09	0.00	0.00	0.90	0.00	0.90
565 0.09 0.01 0.01 0.21 0.01 1.00 1.01 1.01 1.00 1.01 1.01 1.00 1.01 1.01 1.00 1.01 1.01 1.00 1.01 1.01 1.00 1.01 1.00 0.01 0.00 0.01 0.00 0.01 1.00 0.01 1.00 0.01 0.00		0	5.65	0.09	0.01	0.00	0.10	100	150	150	10.0	10.17	8.09	0.65	0.00	0.90	0.00	1.55
50.85 0.88 0.08 2.90 3.83 0.01 1.00 1.00 0.09 0.00 11.3 0.19 0.02 2.90 3.83 0.01 150 151 16.17 8.09 0.56 0.00 1.55 0.00 11.3 0.19 0.02 0.00 0.21 1.01 150 150 0.91 16.17 8.09 0.56 0.00 0.90 0.00 11.3 0.19 0.02 0.00 0.21 1.01 150 150 0.91 16.17 8.09 0.60 0.00 0.00 10.3 0.19 0.02 0.00 0.21 1.01 150 150 0.91 16.17 8.09 0.60 0.00		24	5.65	0.09	0.01	010	0.21	100	150	001	10.0	10.17	8.09	0.00	0.00	0.90	0.00	06.0
11.3 0.19 0.02 0.02 0.03 1.54 0.04 1.54 0.04 0.04 0.05 0.00 0.05 0.00 0.05 0.00 0.05 0.00 0.05 0.00 0.05 0.00 0.05 0.00 0.05 0.00 0.05 0.00 0.05 0.00 0.05 0.00 0.05 0.00 0.05 0.00 0.05 0.00 0.05 0.00 0.05 0.00 0.05 0.00 <th< td=""><td></td><td>84</td><td>50.85</td><td>0.85</td><td>0.08</td><td>2.90</td><td>3.83</td><td>100</td><td>150</td><td>150</td><td>16.0</td><td>10.17</td><td>8.09</td><td>0.16</td><td>0.00</td><td>06.0</td><td>0.00</td><td>1.06</td></th<>		84	50.85	0.85	0.08	2.90	3.83	100	150	150	16.0	10.17	8.09	0.16	0.00	06.0	0.00	1.06
79.1 1.32 0.13 0.21 1.66 0.01 150 150 0.00 0		0	11.3	0.19	0.02	0.00	0.21	0.01	150	150	16.0	16.17	8.09	0.56	0.00	1.55	0.00	2.11
113 0.19 0.02 0.00 0.21 0.01 150 150 151 151 151 150 150 150 150 0.01 0.02 0.00		101	79.1	1.32	0.13	0.21	1.66	0.01	150	150	0.91	16.17	60.0	0.00	0.00	0.90	0.00	06.0
79.1 1.32 0.13 0.21 1.66 0.01 150 151 16.17 8.09 0.00		0	11.3	0.19	0.02	00.0	0.21	0.01	150	150	0.01	16.17	8.03	0.67	0.00	0.30	0.00	1.57
107.35 1.79 0.18 7.15 9.12 0.01 2.50 2.51 10.7.1 8.09 0.40 0.00		90	79.1	1.32	0.13	0.21	1.66	0.01	150	150	10.0	16.17	8.09	0.00	0.00	0.90	0.00	06.0
22.6 0.38 0.04 0.05 0.44 0.05 0.44 0.05 0.44 0.05 0.44 0.05 0.44 0.05 1.50 1.50 1.50 1.50 0.91 1.617 8.09 0.25 0.00 0.39 0.00 28.25 0.47 0.05 2.49 3.00 0.01 150 150 0.91 16.17 8.09 0.25 0.00 0.90 0.00 28.25 0.47 0.05 2.49 3.00 0.01 150 150 0.91 16.17 8.09 0.25 0.00 0.00 5.65 0.40 0.05 0.01 12.0 150 150 0.91 16.17 8.09 0.25 0.00 0.00 5.65 0.09 0.01 0.01 150 150 0.91 16.17 8.09 0.25 0.00 0.00 45.2 0.09 0.01 150 0.91 16.17 8.09 0.25 0.00		88	107.35	1.79	0.18	715	9 12	10.0	200	0250	10.01	10.17	8.09	0.40	0.00	06.0	0.00	1.30
113 1.88 0.19 0.04 0.04 0.00		0	22.6	0.38	0.04	000	0.44	10.0	277	007	1.05	51.56	25.78	0.39	0.00	2.11	0.00	2.50
28.25 0.47 0.05 2.49 3.00 150 0.91 16.17 8.09 0.52 0.00 0.90 0.00 28.25 0.47 0.05 2.49 3.00 0.01 150 150 16.17 8.09 0.55 0.00 1.42 0.00 28.25 0.47 0.05 12.12 12.64 0.01 150 150 1.05 51.56 25.78 0.11 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01 150 150 0.91 16.17 8.09 0.00 0.00 0.00 0.00 0.00 0.01 150 150 0.91 16.17 8.09 0.00 0.0		78	113	1 88	0.19	0.00	2 40	70.0	150	051	0.91	16.17	8.09	0.00	0.00	0.90	0.00	0.90
2.65 0.09 0.24 0.05 1.50 0.91 16.17 8.09 0.25 0.00 1.42 0.00 28.25 0.47 0.05 12.12 12.64 0.01 225 250 1.05 51.56 0.01 0.01 0.00 250 0.00 25.0 0.00 0.01 0.01 12.12 12.64 0.01 150 150 1.05 1.05 0.00 0.00 0.00 0.00 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01 150 150 0.91 16.17 8.09 0.00 0		38	28.25	0.47	20.0	14.0	64.7	70.0	120	150	0.91	16.17	8.09	0.52	0.00	06.0	00.00	1.42
5.65 0.09 0.01 0.00 0.01 1.55 51.56 0.578 0.11 0.00 2.50 0.00 5.65 0.09 0.01 0.00 0.01 0.01 150 150 0.91 16.17 8.09 0.00 0.00 0.00 0.00 0.01 0.01 150 150 0.91 16.17 8.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01 150 0.91 16.17 8.09 0.00 0.		24	28.25	0.47	0.00	2.43	3.00	0.01	150	150	0.91	16.17	8.09	0.25	00.00	1.42	0.00	1.67
5.65 0.09 0.01 0.00 0.10 0.01 150 150 0.91 16.17 8.09 0.00				1.0	50.0	17.77	17.04	0.01	577	250	1.05	51.56	25.78	0.11	00.00	2.50	0.00	2.60
45.2 0.75 0.08 0.10 0.93 0.01 150 151 16.17 8.09 0.00 0.00 0.00 0.00 0.00 11.3 0.19 0.02 0.00 0.21 0.01 150 150 0.91 16.17 8.09 0.00 0.00 0.00 0.00 0.00 0.01 150 150 0.91 16.17 8.09 0.00<		0	5.65	60.0	0.01	0.00	0.10	0.01	150	150	0.01	16.11						
11.3 0.19 0.02 0.00 0.21 0.01 150 150 150 150 150 150 0.01 0.00<		58	45.2	0.75	0.08	0.10	0.93	0.01	150	150	0.91	16.17	8.09	0.00	0.00	0.90	0.00	0.90
33.9 0.57 0.06 0.21 0.83 0.01 150 16,17 8.09 0.41 0.00 0.		0	11.3	0.19	0.02	00.00	0.21	0.01	150	150	0.91	16.17	00.8	000	0.00	0.90	0.00	1.29
62.15 1.04 0.10 1.76 2.90 0.01 150 150 0.91 16.17 8.09 0.41 0.00 0.90 0.00 1.29 0.00 0.25 0.38 0.04 0.00 0.41 0.01 150 150 0.91 16.17 8.09 0.41 0.00 1.29 0.00 0.90 0.00 1.29 0.00 1.29 0.00 1.29 0.00 0.90 0.41 0.01 150 150 0.91 16.17 8.09 0.00 0.00 0.90 0.00 0.90 0.00 1.39 0.00 1.39 0.57 0.06 6.22 6.84 0.01 150 150 0.91 16.17 8.09 0.03 0.03 0.00 0.90 0.00 1.39 0.00 1.39 0.00 0.90 0.00 0.90 0.00 0.90 0.00 0.90 0.00 0.90 0.00 0.90 0.00 0.90 0.00 0.90 0.00 0.90 0.00 0.90 0.00		53	33.9	0.57	90.0	0.21	0.83	0.01	150	150	0.91	16.17	00.0	0.00	0.00	0.30	0.00	0.90
22.6 0.38 0.04 0.00 0.41 0.01 150 150 0.91 16.17 8.09 0.04 0.00 1.29 0.00 158.2 2.64 0.26 0.41 3.31 0.01 150 150 0.91 16.17 8.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01 150 150 0.91 16.17 8.09 0.02 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01 150 150 0.91 16.17 8.09 0.00<		62	62.15	1.04	0.10	1.76	2.90	0.01	150	150	0.91	16.17	8 00 a	0.13	0.00	0.90	0.00	1.09
158.2 2.64 0.26 0.41 3.31 0.01 150 150 16.17 8.09 0.05 0.00 0.00 0.00 33.9 0.57 0.06 6.22 6.84 0.01 150 150 0.91 16.17 8.09 0.35 0.00 0.00 0.00 11.3 0.19 0.02 0.00 0.21 0.01 150 150 0.91 16.17 8.09 0.00 <td></td> <td>0</td> <td>22.6</td> <td>0.38</td> <td>0.04</td> <td>0.00</td> <td>0.41</td> <td>0.01</td> <td>150</td> <td>150</td> <td>0.91</td> <td>16.17</td> <td>60.8</td> <td>0.41</td> <td>9 6</td> <td>1.29</td> <td>0.00</td> <td>1.70</td>		0	22.6	0.38	0.04	0.00	0.41	0.01	150	150	0.91	16.17	60.8	0.41	9 6	1.29	0.00	1.70
33.9 0.57 0.06 6.22 6.84 0.01 150 150 0.91 16.17 8.09 0.35 0.00 0.00 0.00 11.3 0.19 0.02 0.00 0.21 0.01 150 150 16.17 8.09 0.35 0.00 1.76 0.00 73.45 1.22 0.12 0.21 1.50 150 151 16.17 8.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 21.03 0.01 275 300 1.07 75.83 37.92 0.04 0.00 2.00 0.00		129	158.2	2.64	0.26	0.41	3.31	0.01	150	150	0.91	16.17	808	0.00	8 6	0.90	0.00	0.90
11.3 0.19 0.02 0.00 0.21 0.01 150 150 150 16.17 8.09 0.03 0.00 1.76 0.00 73.45 1.22 0.12 0.21 1.55 0.01 150 150 0.91 16.17 8.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 21.03 0.01 275 300 1.07 75.83 37.92 0.04 0.00 2.60 0.00 2.6		53	33.9	0.57	90.0	6.22	6.84	0.01	150	150	0.91	1617	8.09	0.00	00.0	0.30	0.00	1.76
73.45 1.22 0.12 0.21 1.55 0.01 150 150 0.91 16.17 8.09 0.00 0.00 0.00 0.00 2.103 0.01 225 250 1.05 51.56 25.78 0.23 0.00 0.00 0.10 0.10 0.10 0.10 0.10 0.00 0.00 0.00 0.00 0.01 275 300 1.07 75.83 37.92 0.04 0.00 2.60 0.00		0	11.3	0.19	0.02	0.00	0.21	0.01	150	150	0 91	16.17	60.0	0.00	0.00	1.76	0.00	2.11
28.25 0.47 0.05 8.39 8.91 0.01 225 250 1.05 51.56 25.78 0.23 0.00 2.11 0.00 2.11 0.00 2.11 0.00 0.00 0.00 2.103 2.103 0.01 275 300 1.07 75.83 37.92 0.04 0.00 2.60 0.00		103	73.45	1.22	0.12	0.21	1.55	0.01	150	150	100	16.17	60.0	0.00	0.00	0.90	0.00	0.90
0 0.00 0.00 21.03 21.03 0.01 275 300 1.07 75.83 37.92 0.04 0.00 2.60 0.00		51	28.25	0.47	0.05	8.39	8.91	0.01	225	250	105	5156	90.00 OC 3C	0.69	0.00	0.90	0.00	1.59
27.93 37.92 0.04 0.00 2.60 0.00		10	0	0.00	0.00	21.03	21.03	100	375	000	1.03	07.70	72.78	0.23	0.00	2.11	0.00	2.34
					3	2011	77.03	70.0	6/7	300	1.07	75.83	37.92	0.04	0.00	2.60	0.00	2.64



PRIFACTOR ENGINEERS

88 4115 O.41 O.02 O.41 514 O.01 225 250 1.05 51.56 0.39 0.07 0.09 0.04 0.01 225 250 1.05 51.56 0.07 0.07 0.00 0.07 0.01 225 250 1.05 51.56 0.07 0.07 0.00 0.07 8.13 0.01 225 250 1.05 51.56 0.07 0.07 0.00 0.07 0.01 225 250 1.05 51.56 0.07 0.00 0.00 0.00 0.01 225 250 1.05 51.56 0.07 0.00 0.00 0.00 0.01 225 250 1.05 51.56 0.07 0.00 0.00 0.00 0.00 0.01 250 300 1.12 79.54 0.04 0.00 0.00 0.00 0.00 0.01 250 300 1.12 79.54 0.01 0.00 0.00 0.00 0.01 250 300	Reg 4115 Cold Contain Solution Contain Slope 1 in LPS Contain Slope 1 in LPS Contain Contain Contain Slope 1 in LPS Contain Co	TO SEE	Length in	Area	Catchir	Catchment Area (Hectare)	Hectare)	Discharge	NA			Marrier, Design	E C		l evel at start	start	to love !	7
R8 4115 0.44 Total In LPS constant Sippe 1 Pipe size In MS Institution Fall In Information Call In Information Call In Information Call	Math Sqimt Sqip Add Total In PS Constant Stope In Pipe size In Mark Pistuli flow) List Pistuli flow List	Node no						a	Mannings			Volen			רפגפו	. start	Level at	end
88 4115 0.41 0.00 0.41 51.44 0.01 225 250 1.05 51.56 0.039 0.030 0.00 0.00 16 650 0.07 0.07 8.13 0.01 225 250 1.05 51.56 0.03 0.00 0.00 0.07 0.00 0.07 8.13 0.01 225 250 1.05 51.56 0.07 0.00 0.07 0.00 0.07 8.13 0.01 225 250 1.05 51.56 0.07 0.00 0.07 8.13 0.01 250 300 1.12 79.54 0.01 0.00 0.00 0.00 0.00 0.01 250 300 1.12 79.54 0.01 0.00 0.00 0.00 0.01 2.00 0.00 0.00 0.00 0.01 2.00 0.00 0.00 0.00 0.01 2.00 0.00 0.00 0.01 2.00 0.00 0.01 0.00 0.01 2.00	88 4115 0.41 0.00 0.41 51.44 0.01 225 250 1.05 51.56 0.09 0.09 0.00 0.01 225 250 1.05 51.56 0.00 0.		mtr.	(sq.mtr.)	Self	Add.	Total	in LPS	constant	Slope 1 in	Pipe size	velocity in m/s	Discharge in Ips(full flow)	Fall in metre	G.L.	T.	9.F.	ij.
88 4115 0.40 0.41 51.44 0.01 225 250 1.05 6.39 0.00 -0.80 0.00 16 650 0.07 0.00 0.07 0.00 0.07 0.00 0.07 0.00 0.07 0.00 0.07 0.00 0.07 0.00 0.07 0.00 0.07 250 300 1.12 79.54 0.07 0.00 -0.80 0.00 -0.80 0.00 -0.80 0.00 -0.80 0.00 -0.80 0.00 -0.80 0.00 -0.80 0.00 -0.80 0.00 -0.80 0.00 -0.80 0.00 -0.80 0.00 -0.80 0.00 -0.80 0.00 -0.80 0.00 -0.80 0.00 -0.80 0.00 0.01 250 300 1.12 79.54 0.01 0.00 -0.80 0.00 -0.80 0.00 -0.80 0.00 -0.80 0.00 -0.80 0.00 -0.80 0.01 250 300	88 4115 0.41 0.00 0.41 51.44 0.01 225 250 1.05 51.56 0.39 0.00 0.04 0.00 0.07 8.13 0.01 225 250 1.05 51.56 0.07 0.00 0.07 8.13 0.01 225 250 1.05 51.56 0.07 0.00 0.01 9.04 0.01 250 300 1.12 79.54 0.07 0.00 -1.19 0.00 0.07 0.00 0.01 250 300 1.12 79.54 0.07 0.00 -1.19 9.04 0.01 250 300 1.12 79.54 0.07 0.00 -1.19 9.04 0.00 0.01 2.00 -1.19 9.00 -1.19 9.00 0.00 0.00 0.01 2.00 0.00 0.00 0.01 2.00 1.11 79.54 0.01 0.00 0.00 0.00 0.01 2.00 1.11 79.54 0.01 0.00 0.00 <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>																	
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84 1924 0.19 0.24 0.43 53.83 0.01 250 300 1.12 79.54 0.34 0.04 -0.00 0.15 1933 0.01 250 300 1.12 79.54 0.34 0.00 -0.10 0.00 0.15 1933 0.01 250 300 1.12 79.54 0.03 0.01 0.00 0.01 250 300 1.12 79.54 0.03 0.00 0.01 0.00 0.01 250 300 1.12 79.54 0.03 0.01 0.00 0.01 2.02 0.00 1.12 79.54 0.03 0.00 0.00 0.00 0.00 0.01 2.00 1.12 79.54 0.01 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01 2.00 0.00 1.12 79.54 0.01 2.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01 2.00 0.01 0.00	84 1924 0.19 0.24 0.43 53.83 0.01 250 300 1.12 79.54 0.34 0.00 -0.00 31 1346 0.15 0.00 0.015 193.3 0.01 250 300 1.12 79.54 0.01 0.00 -1.19 0.00 -1.19 0.00 0.01 20.01 250 300 1.12 79.54 0.01 0.00 -1.80 0.00 43 732 0.00 0.04 0.01 250 300 1.12 79.54 0.01 0.00 -0.80 0.00 -0.90 0.00 0.00 0.01 250 1.12 79.54 0.01 0.00 -0.80 0.00 0.01 0.01 0.00 0.00 0.01 0.01 0.00 0.00 0.01 0.01 0.01 0.00 0.00 0.01 0.01 0.01 0.01 0.00 0.00 0.01 0.01 0.01 0.01 0.00 0.01 0.01<	3-2	16	650	0.07	0.00	0.07	8.13	0.01	225	250	1.05	51.56	20.0	0000	900	0.00	7
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21 723 0.07 0.00 0.01 2.02 3.00 1.12 7.524 0.12 0.00 -0.18 0.00 -0.08 0.00 -0.08 0.00 -0.08 0.00 -0.80 0.00 -0.08 0.00 -0.09 0.00 -0.09 0.00	21 723 0.07 0.00 0.07 9.04 0.01 250 300 1.12 79.54 0.01 -0.00 -0.80 0.00 43 797 0.08 0.23 0.31 38.33 0.01 250 300 1.12 79.54 0.08 0.00 -0.80 0.00 29 3022 0.30 0.44 0.74 93.07 0.01 450 1.17 185.39 0.21 0.00 -0.80 0.00 29 773 0.08 0.00 0.08 9.66 0.01 225 1.17 185.39 0.21 0.00 -1.53 0.00 89 2379 0.00 0.09 6.04 6.01 225 1.07 1.18 1.18 0.01 225 0.00 1.17 1.18 1.18 1.18 1.04 400 450 1.17 185.39 0.10 0.00 -1.53 0.00 130 0.29 0.00 0.39	-5A	31	1546	0.15	0.00	0.15	19.33	0.01	250	300	117	79.54	5,5	00.0	- G	0.00	-1.5
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29 773 0.08 0.06 0.08 9.66 0.01 225 250 1.05 1.05 1.05 0.013 0.013 0.00 -1.33 0.00 89 2379 0.24 0.05 0.76 95.24 0.01 450 1.07 75.83 0.13 0.00 -0.80 0.00 130 4895 0.49 0.00 0.49 61.19 0.01 275 300 1.07 75.83 0.47 0.00 -0.80 0.00 74 1892 0.09 0.09 0.30 37.34 0.01 420 1.17 185.39 0.19 0.00 -0.80 0.00 115 4665 0.09 0.30 0.01 470 450 1.17 185.39 0.10 -0.80 0.00 115 4665 0.47 0.00 0.47 58.31 0.01 470 470 1.07 75.83 0.10 -0.80 0.00 21 <t< td=""><td>29 773 0.08 0.00 0.08 9.66 0.01 225 2.01 1.05 1.15 0.01 0.01 1.15 0.00 89 2379 0.24 0.52 0.76 95.24 0.01 225 250 1.05 51.56 0.13 0.00 -0.80 0.00 0.49 61.19 0.01 275 300 1.07 75.83 0.47 0.00 -1.73 0.00 130 4895 0.49 0.00 0.30 37.34 0.01 225 250 1.07 75.83 0.47 0.00 -1.73 0.00 74 1892 0.19 0.59 0.78 9.770 0.01 450 1.17 185.39 0.19 0.00 -1.27 0.00 41 935 0.09 0.04 50.01 400 450 1.17 185.39 0.19 0.00 -1.27 0.00 115 4665 0.47 0.00 0.47 <</td><td>1-7</td><td>82</td><td>3022</td><td>0.30</td><td>0.44</td><td>0.74</td><td>93.07</td><td>0.01</td><td>400</td><td>450</td><td>117</td><td>185.20</td><td>2.0</td><td>0.00</td><td>-0.92</td><td>00.00</td><td>-1.1</td></t<>	29 773 0.08 0.00 0.08 9.66 0.01 225 2.01 1.05 1.15 0.01 0.01 1.15 0.00 89 2379 0.24 0.52 0.76 95.24 0.01 225 250 1.05 51.56 0.13 0.00 -0.80 0.00 0.49 61.19 0.01 275 300 1.07 75.83 0.47 0.00 -1.73 0.00 130 4895 0.49 0.00 0.30 37.34 0.01 225 250 1.07 75.83 0.47 0.00 -1.73 0.00 74 1892 0.19 0.59 0.78 9.770 0.01 450 1.17 185.39 0.19 0.00 -1.27 0.00 41 935 0.09 0.04 50.01 400 450 1.17 185.39 0.19 0.00 -1.27 0.00 115 4665 0.47 0.00 0.47 <	1-7	82	3022	0.30	0.44	0.74	93.07	0.01	400	450	117	185.20	2.0	0.00	-0.92	00.00	-1.1
89 2379 0.24 0.52 0.76 95.24 0.01 450 450 1.17 185.39 0.22 0.00 -0.80 -0.00 130 4895 0.49 0.00 0.49 61.19 0.01 275 300 1.07 75.83 0.47 0.00 -0.80 0.00 74 1892 0.09 0.30 37.34 0.01 225 250 1.05 51.56 0.41 0.00 -0.80 0.00 41 935 0.09 1.08 1.18 146.99 0.01 400 450 1.17 185.39 0.19 0.00 -1.25 0.00 -1.17 185.39 0.10 0.00 -1.25 0.01 400 450 1.17 185.39 0.10 0.00 -1.95 0.00 -1.95 0.01 0.01 0.00 -1.95 0.01 0.01 1.01 275 300 1.07 75.83 0.10 0.00 -1.98 0.01 0	89 2379 0.24 0.52 0.76 95.24 0.01 450 1.17 185.39 0.13 0.00 -0.80 0.00 130 4895 0.49 0.00 0.49 61.19 0.01 275 300 1.07 75.83 0.22 0.00 -0.80 0.00 74 1892 0.09 0.09 0.78 97.70 0.01 450 1.17 185.39 0.19 0.00 -0.80 0.00 115 4665 0.09 1.08 1.18 146.99 0.01 450 1.17 185.39 0.19 0.00 -1.27 0.00 115 4665 0.47 0.00 0.47 58.31 0.01 400 450 1.17 185.39 0.19 0.00 -1.85 0.00 115 4665 0.47 0.00 0.47 58.31 0.01 275 300 1.07 75.83 0.19 -1.85 0.00 21	3-7	29	773	0.08	00.00	0.08	9.66	0.01	225	250	1.05	51.55	0.21	0.00	-1.53	0.00	-1.7
130 4895 0.49 0.00 0.49 61.19 0.01 275 300 1.07 75.83 0.47 0.00 -1.73 0.00 93 2987 0.30 0.00 0.30 37.34 0.01 275 300 1.07 75.83 0.47 0.00 -0.80 0.00 74 1892 0.19 0.59 0.78 97.70 0.01 400 450 1.17 185.39 0.19 0.00 -0.80 0.00 41 935 0.09 1.08 1.18 146.99 0.01 400 450 1.17 185.39 0.19 0.00 -1.95 0.00 -1.95 0.00 -1.95 0.00 -1.95 0.01 400 450 1.17 185.39 0.10 0.00 -1.95 0.00 -1.95 0.00 -1.95 0.00 -1.95 0.00 -1.95 0.00 -1.95 0.01 0.00 -1.95 0.01 0.00 -1.95 <t< td=""><td>130 4895 0.049 0.00 0.49 61.19 0.01 275 300 1.07 75.83 0.47 0.00 -1.73 0.00 93 2987 0.30 0.00 0.30 37.34 0.01 275 300 1.07 75.83 0.47 0.00 -0.80 0.00 74 1892 0.19 0.59 0.78 97.70 0.01 400 450 1.17 185.39 0.19 0.00 -0.80 0.00 41 935 0.09 1.08 1.18 146.99 0.01 400 450 1.17 185.39 0.10 0.00 -1.95 0.00 115 4665 0.47 0.00 0.47 58.31 0.01 275 300 1.07 75.83 0.10 0.09 -1.95 0.00 -1.96 0.00 -1.96 0.00 -1.96 0.00 -1.96 0.00 -1.96 0.00 -1.96 0.00 -1.96 0.00</td><td>6-1</td><td>89</td><td>2379</td><td>0.24</td><td>0.52</td><td>0.76</td><td>95.24</td><td>0.01</td><td>400</td><td>450</td><td>1 17</td><td>00.101</td><td>5 5</td><td>000</td><td>-0.80</td><td>0.00</td><td>6.0-</td></t<>	130 4895 0.049 0.00 0.49 61.19 0.01 275 300 1.07 75.83 0.47 0.00 -1.73 0.00 93 2987 0.30 0.00 0.30 37.34 0.01 275 300 1.07 75.83 0.47 0.00 -0.80 0.00 74 1892 0.19 0.59 0.78 97.70 0.01 400 450 1.17 185.39 0.19 0.00 -0.80 0.00 41 935 0.09 1.08 1.18 146.99 0.01 400 450 1.17 185.39 0.10 0.00 -1.95 0.00 115 4665 0.47 0.00 0.47 58.31 0.01 275 300 1.07 75.83 0.10 0.09 -1.95 0.00 -1.96 0.00 -1.96 0.00 -1.96 0.00 -1.96 0.00 -1.96 0.00 -1.96 0.00 -1.96 0.00	6-1	89	2379	0.24	0.52	0.76	95.24	0.01	400	450	1 17	00.101	5 5	000	-0.80	0.00	6.0-
93 252 0.00 0.30 0.01 75.83 0.47 0.00 -0.80 0.00 74 1892 0.30 0.00 0.30 97.70 0.01 450 1.05 51.56 0.41 0.00 -0.80 0.00 74 1892 0.09 0.59 0.78 97.70 0.01 450 1.17 185.39 0.19 0.00 -1.27 0.00 41 935 0.09 1.08 1.18 146.99 0.01 450 1.17 185.39 0.10 0.00 -1.95 0.00 -1.95 0.01 400 1.17 185.39 0.10 0.00 -1.96 0.00 -1.96 0.00 -1.96 0.00 -1.96 0.00 -1.96 0.00 -1.96 0.00 -1.96 0.00 -1.96 0.01 0.00 0.01 0.01 2.25 357.10 0.04 0.00 -2.96 0.00 36 1.045 0.01 0.01 <t< td=""><td>93 2987 0.00 0.30 0.13 0.01 275 300 1.07 75.83 0.47 0.00 -0.80 0.00 74 1892 0.30 0.00 0.30 97.34 0.01 450 1.17 185.39 0.19 0.00 -0.80 0.00 74 1892 0.09 1.08 1.18 146.99 0.01 400 450 1.17 185.39 0.19 0.00 -1.27 0.00 41 935 0.09 1.08 1.18 146.99 0.01 400 450 1.17 185.39 0.10 0.00 -1.27 0.00 21 4665 0.47 0.00 0.47 58.31 0.01 275 300 1.26 357.10 0.04 0.00 -1.86 0.00 21 684 0.07 1.28 10.48 0.01 225 250 1.05 357.10 0.04 0.00 -2.06 0.00</td><td>-12</td><td>130</td><td>4895</td><td>0.49</td><td>000</td><td>07.0</td><td>61 10</td><td>100</td><td>200</td><td>000</td><td>1.17</td><td>103.39</td><td>0.22</td><td>00.00</td><td>-1.73</td><td>0.00</td><td>6.1</td></t<>	93 2987 0.00 0.30 0.13 0.01 275 300 1.07 75.83 0.47 0.00 -0.80 0.00 74 1892 0.30 0.00 0.30 97.34 0.01 450 1.17 185.39 0.19 0.00 -0.80 0.00 74 1892 0.09 1.08 1.18 146.99 0.01 400 450 1.17 185.39 0.19 0.00 -1.27 0.00 41 935 0.09 1.08 1.18 146.99 0.01 400 450 1.17 185.39 0.10 0.00 -1.27 0.00 21 4665 0.47 0.00 0.47 58.31 0.01 275 300 1.26 357.10 0.04 0.00 -1.86 0.00 21 684 0.07 1.28 10.48 0.01 225 250 1.05 357.10 0.04 0.00 -2.06 0.00	-12	130	4895	0.49	000	07.0	61 10	100	200	000	1.17	103.39	0.22	00.00	-1.73	0.00	6.1
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41 185.3 0.19 0.09 -1.27 0.00 -1.27 0.00 41 935 0.09 1.08 1.18 146.99 0.01 450 1.17 185.39 0.10 0.00 -1.95 0.00 115 4665 0.47 0.00 0.47 58.31 0.01 275 300 1.07 75.83 0.42 0.00 -1.96 0.00 21 684 0.07 1.55 1.62 202.19 0.01 225 250 1.05 51.56 0.04 0.00 -2.08 0.00 36 838 0.08 0.00 0.08 10.48 0.01 225 250 1.05 51.56 0.06 -0.80 0.00 -0.80 0.00 40 1.045 0.10 1.25 250 1.05 51.56 0.06 0.08 0.06 0.00 -2.18 0.00 -2.18 0.00 -2.18 0.00 -2.18 0.00 -2.18	41 935 0.13 0.70 0.71 450 1.17 185.39 0.19 0.00 -1.27 0.00 41 935 0.09 1.08 1.18 146.99 0.01 450 1.17 185.39 0.10 0.00 -1.95 0.00 115 4665 0.47 0.00 0.47 58.31 0.01 275 300 1.07 75.83 0.10 -0.80 0.00 21 684 0.07 1.55 1.62 202.19 0.01 275 350 1.07 75.83 0.04 0.00 -2.08 0.00 36 838 0.08 0.00 0.08 10.48 0.01 225 250 1.05 51.56 0.06 -2.08 0.00 40 1045 0.10 1.26 357.10 0.08 0.00 -2.10 0.00 36 1553 0.16 0.00 1.26 2.18 2.18 2.18 2.18 <th< td=""><td>00-0</td><td>7.7</td><td>1000</td><td>0 0</td><td>0 0</td><td>0.00</td><td>40.70</td><td>0.01</td><td>577</td><td>750</td><td>1.05</td><td>51.56</td><td>0.41</td><td>0.00</td><td>-0.80</td><td>0.00</td><td>-1.2</td></th<>	00-0	7.7	1000	0 0	0 0	0.00	40.70	0.01	577	750	1.05	51.56	0.41	0.00	-0.80	0.00	-1.2
41 935 0.09 1.08 1.18 146.99 0.01 450 1.17 185.39 0.10 0.00 1.26 1.50 0.00 1.87 30.0 1.17 185.39 0.10 0.00 1.96 0.00 0.04 58.31 0.01 275 300 1.07 75.83 0.42 0.00 -0.80 0.00 21 684 0.07 1.55 1.62 202.19 0.01 500 600 1.26 357.10 0.04 0.00 -2.86 0.00 36 838 0.08 0.00 0.08 10.48 0.01 225 250 1.05 51.56 0.16 0.09 -0.80 0.00 40 1045 0.10 1.70 1.81 225.73 0.01 50.6 600 1.26 357.10 0.08 0.00 -0.80 0.00 36 1553 0.16 0.00 0.16 19.41 0.01 225 250 1.05	41 935 0.09 1.08 1.18 146.99 0.01 450 1.17 185.39 0.10 0.00 -1.95 0.00 115 4665 0.47 0.00 0.47 58.31 0.01 275 300 1.07 75.83 0.42 0.00 -1.95 0.00 21 684 0.07 1.55 1.62 202.19 0.01 500 1.26 357.10 0.04 0.00 -0.80 0.00 36 838 0.08 0.00 0.08 10.48 0.01 225 250 1.05 51.56 0.16 0.00 -0.80 0.00 40 1045 0.10 1.26 357.10 0.08 0.00 -2.10 0.00 0.00 -2.00 0.00 0.00 -2.00 0.00 0.00 -2.10 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 <td>5</td> <td>t</td> <td>7601</td> <td>0.19</td> <td>0.59</td> <td>0.78</td> <td>97.70</td> <td>0.01</td> <td>400</td> <td>450</td> <td>1.17</td> <td>185.39</td> <td>0.19</td> <td>00.00</td> <td>-1 27</td> <td>0</td> <td>**</td>	5	t	7601	0.19	0.59	0.78	97.70	0.01	400	450	1.17	185.39	0.19	00.00	-1 27	0	**
115 4665 0.47 58.31 0.01 275 300 1.07 75.83 0.42 0.00 -1.59 0.00 21 684 0.07 1.55 1.62 202.19 0.01 500 600 1.26 357.10 0.04 0.00 -0.80 0.00 36 838 0.08 0.00 0.08 10.48 0.01 225 250 1.05 51.56 0.16 0.09 -0.80 0.00 40 1045 0.10 1.70 1.81 225.73 0.01 500 600 1.26 357.10 0.08 0.00 -2.80 0.00 36 1553 0.16 0.00 0.16 19.41 0.01 225 250 1.05 51.56 0.06	115 4665 0.47 58.31 0.01 275 300 1.07 75.83 0.42 0.00 -1.59 0.00 21 684 0.07 1.55 1.62 202.19 0.01 500 600 1.26 357.10 0.04 0.00 -0.80 0.00 36 838 0.08 0.00 0.08 10.48 0.01 225 250 1.05 51.56 0.16 0.06 0.00 -2.06 0.00 40 1045 0.10 1.70 1.81 225.73 0.01 500 1.26 357.10 0.08 0.00 -2.10 0.00 36 1553 0.16 0.00 0.16 19.41 0.01 225 250 1.05 51.56 0.06	-13	41	935	0.09	1.08	1.18	146.99	0.01	400	450	1.17	185.39	010	000	1 0	000	1.
21 684 0.07 1.55 1.62 202.19 0.01 500 600 1.26 357.10 0.04 0.00 -2.06 0.00 36 838 0.08 0.00 0.08 10.48 0.01 225 250 1.05 51.56 0.16 0.09 0.00 -2.06 0.00 40 1045 0.10 1.75 1.81 225.73 0.01 500 600 1.26 357.10 0.08 0.00 -2.10 0.00 </td <td>21 684 0.07 1.55 1.62 202.19 0.01 500 600 1.26 357.10 0.04 0.00 -0.00 0.00 36 838 0.08 0.00 0.08 10.48 0.01 225 250 1.05 51.56 0.16 0.04 0.00 -2.06 0.00 40 1045 0.10 1.75 1.81 225.73 0.01 500 600 1.26 357.10 0.08 0.00 -2.10 0.00 36 1553 0.16 0.00 0.16 19.41 0.01 225 250 1.05 51.56 0.16 0.00 -2.10 0.00 128 2188 0.22 1.96 2.18 272.49 0.01 500 600 1.26 357.10 0.26 0.00 -2.18 0.00</td> <td>1-13</td> <td>115</td> <td>4665</td> <td>0.47</td> <td>0.00</td> <td>0.47</td> <td>58.31</td> <td>0.01</td> <td>275</td> <td>300</td> <td>1.07</td> <td>75.83</td> <td>0.42</td> <td>000</td> <td>00.1</td> <td>0.00</td> <td>-2.0</td>	21 684 0.07 1.55 1.62 202.19 0.01 500 600 1.26 357.10 0.04 0.00 -0.00 0.00 36 838 0.08 0.00 0.08 10.48 0.01 225 250 1.05 51.56 0.16 0.04 0.00 -2.06 0.00 40 1045 0.10 1.75 1.81 225.73 0.01 500 600 1.26 357.10 0.08 0.00 -2.10 0.00 36 1553 0.16 0.00 0.16 19.41 0.01 225 250 1.05 51.56 0.16 0.00 -2.10 0.00 128 2188 0.22 1.96 2.18 272.49 0.01 500 600 1.26 357.10 0.26 0.00 -2.18 0.00	1-13	115	4665	0.47	0.00	0.47	58.31	0.01	275	300	1.07	75.83	0.42	000	00.1	0.00	-2.0
36 838 0.08 0.00 0.08 10.48 0.01 225 250 1.05 51.56 0.16 0.00 -2.10 0.00 -0.00 -0.00 -0.00 0.00 -0.00	36 838 0.08 0.00 0.08 10.48 0.01 225 250 1.05 51.56 0.16 0.00 -2.00 0.00 40 1045 0.10 1.70 1.81 225.73 0.01 500 600 1.26 357.10 0.08 0.00 -2.10 0.00 36 1553 0.16 0.00 0.16 19.41 0.01 225 250 1.05 51.56 0.16 0.00 -2.10 0.00 128 2188 0.22 1.36 2.18 272.49 0.01 500 600 1.26 357.10 0.26 0.00 -2.18 0.00	-16	21	684	0.07	1.55	1.62	202.19	0.01	200	009	1.26	357.10	0.04	000	0.00	0.00	-1.Z
40 1045 0.10 1.70 1.81 225.73 0.01 500 600 1.26 357.10 0.08 0.00 -2.10 0.00 36 1553 0.16 0.00 0.16 19.41 0.01 225 250 1.05 51.56 0.16 0.00 -0.80 0.00 128 2.18 0.22 1.96 2.18 272.49 0.01 500 600 1.26 357.10 0.26 0.00 -2.18 0.00	40 1045 0.10 1.70 1.81 225.73 0.01 500 600 1.26 357.10 0.08 0.00 -0.80 0.00 8.00 8.10 8.10 8.10 8.10 8.10	-16	36	838	0.08	00.0	0.08	10.48	0.01	225	250	1.05	51 SE	4.00	00.0	-2.00	0.00	-2.1
36 1553 0.16 0.00 0.16 19.41 0.01 225 250 1.05 51.56 0.16 0.00 -0.80 -0.80 0.00 128 2188 0.22 1.96 2.18 272.49 0.01 500 600 1.26 357.10 0.26 0.00 -2.18 0.00	36 1553 0.16 0.00 0.16 19.41 0.01 225 250 1.05 51.56 0.16 0.00 -0.80 0.00 128 2188 0.22 1.36 2.18 272.49 0.01 500 600 1.26 357.10 0.26 0.00 -2.18 0.00	-18	40	1045	0.10	1.70	1.81	225.73	0.01	200	900	1.26	357 10	2 00	0.00	0.80	0.00	-0.9
128 2188 0.22 1.96 2.18 272.49 0.01 500 600 1.26 357.10 0.26 0.00 -2.18 0.00	128 2188 0.22 1.96 2.18 272.49 0.01 500 600 1.26 357.10 0.26 0.00 -2.18 0.00	-18	36	1553	0.16	0.00	0.16	19.41	0.01	225	250	1.05	51.50	0.00	0.00	01.2-	0.00	-2.1
2.20 2.21 200 600 1.26 357.10 0.26 0.00 -2.18 0.00	2.10 2.11 200 600 1.26 357.10 0.26 0.00 -2.18 0.00	8-19	128	2188	0.22	1 96	218	273 40	100	000	0 0	000	07:70	0.0	0.00	-0.80	00.00	96.0-
							2	21.2.12	10.0	200	000	1.25	357.10	0.26	0.00	-2.18	0.00	-2.4

