



NAGPUR MUNICIPAL CORPORATION

REJUVENATION OF NAG RIVER AND ITS TRIBUTARIES IN NAGPUR CITY

DETAILED PROJECT REPORT

VOLUME III

December 2012



Submitted to:

EXECUTIVE ENGINEER (CONSTRUCTION)

First Floor, Main Building
Nagpur Municipal Corporation
Mahanagarपालिका Marg, Civil Lines
NAGPUR – 440001 (MS) INDIA



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NAGPUR MUNICIPAL CORPORATION

**REJUVENATION OF NAG RIVER AND ITS TRIBUTARIES
IN NAGPUR CITY**

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SUMMARY OF THE COMPLIANCES

As per the letter under reference No. J-27017/2/2011-NRCD-II

From Government of India, MoEF,
National River Conservation Directorate

Dated: 24/01/2012

Sr. No	Comments	Compliance
1.	The City Sanitation Plan (CSP) based on the City Development Plan (CDP) has not been provided. Feasibility Report of the project proposal has also not been provided.	NMC has submitted city sanitation plan. Refer Annexure IV for Executive Summary of City Sanitation Plan
2.	An Action Plan for integrated sewer network up to house-property line within implementation period is also to be indicated.	Master Plan and DPRs for different sewerage zones is prepared. The action plan is divided into Phases (2011-2026) and (2026 to 2041). This includes collection system. Refer Annexure VI
3.	Nag River water quality in terms of BOD, DO and Faecal Coliform at present, and the outcome of the project should be clearly brought out. Dry weather river water quality should be measured at upstream, middle stream and downstream of the	- Environmental status report has been prepared. - After completion of the project, the pollution levels of Nag River shall come down to MPCB surface water standard norms. - Refer Annexure V

	town.																																														
4.	A clear picture of water supply available, demand drainage area wise/zone wise, co-relating the population projection not furnished.	<table><tr><th rowspan="2">Zones</th><th colspan="3">Population</th><th colspan="3">Average Sewage Flow (Mld)</th></tr><tr><th>2011</th><th>2026</th><th>2041</th><th>2011</th><th>2026</th><th>2041</th></tr><tr><td>North</td><td>822252</td><td>1326613</td><td>2048577</td><td>103.6</td><td>167.15</td><td>258.12</td></tr><tr><td>Central</td><td>1287622</td><td>1702362</td><td>2313026</td><td>162.24</td><td>214.50</td><td>291.44</td></tr><tr><td>South</td><td>631360</td><td>1022732</td><td>1606856</td><td>79.55</td><td>128.86</td><td>202.46</td></tr><tr><td>Total</td><td>2741234</td><td>4051707</td><td>5968459</td><td>345.40</td><td>510.52</td><td>752.03</td></tr></table>	Zones	Population			Average Sewage Flow (Mld)			2011	2026	2041	2011	2026	2041	North	822252	1326613	2048577	103.6	167.15	258.12	Central	1287622	1702362	2313026	162.24	214.50	291.44	South	631360	1022732	1606856	79.55	128.86	202.46	Total	2741234	4051707	5968459	345.40	510.52	752.03				
Zones	Population			Average Sewage Flow (Mld)																																											
	2011	2026	2041	2011	2026	2041																																									
North	822252	1326613	2048577	103.6	167.15	258.12																																									
Central	1287622	1702362	2313026	162.24	214.50	291.44																																									
South	631360	1022732	1606856	79.55	128.86	202.46																																									
Total	2741234	4051707	5968459	345.40	510.52	752.03																																									
5.	Have any sewerage project been sanctioned under JnNURM? What is their physical progress? How these projects have been dovetailed with the present proposal?	- Construction of 130 Mld Sewerage Treatment Plant (STP) has been approved under JnNURM on PPP mode. - The work is being executed by MahaGENCO at Bhandewadi. - The sewage transported after execution of the Nag Rejuvenation Project shall be treated at Bhandewadi																																													
6.	Which agency will implement the project?	Nagpur Municipal Corporation, Nagpur																																													
7.	Index Plan of the city showing the alignment of Nag River and its tributaries should be attached with the proposal.	Already prepared. Refer D.P.R of Rejuvenation of Nag River and its tributaries – Volume I Maps – 4.7, 4.9, 4.12																																													
8.	Another Index Plan showing existing sewerage works, works proposed under JNNURM and proposed under this DPR should be attached with the proposal.	Already prepared. Refer Annexure VIII																																													

9.	Sewage Characteristics of all three zones namely North, Central and south zone shows high BOD of 350 mg/l. This is very high for domestic wastewater. Please indicate the reasons for this	BOD varies from 160 mg/ltr. to 240 mg/ltr. Refer Annexure V
10.	How much wastewater generated in the Multi-nodal International Cargo Hub & Airport (MIHAN) area? Where the effluent of MIHAN area is discharged? What arrangements have been made by MIHAN to treat their wastewater?	- Quantity of waste water generated in MIHAN is 39 Mld. - MIHAN is upcoming project and has created its own treatment facility. - Treated waste water shall be recycle and reuse within the MIHAN area. - Treated waste water shall meet the surface water standards.
11.	Give an annual O&M comprehensive table showing the rate and amount for each item like personnel/ staff, power consumption, repair civil, repair electrical, chemicals etc.	- O&M of the developmental works shall be carried out by NMC. - However sewage transported shall be treated in STP having capacity of 130 Mld (Project approved under JnNURM). MAHAGENCO is executing this project and shall recycle and reuse the waste water in their Power Plant for cooling of towers and ash handling. The O&M shall be attended by MahaGENO for 25 years.
12.	As per revised guidelines for preparation .of DPRs under the National River	NMC will take care for Operation & Maintenance cost.

	Conservation Plan (NRCP), the next 10 years O&M cost is needs to be worked out with revenue generation plan to meet the O&M expenditure.	
13.	Project data as per Table 2.2, 2.7, 2.8, 2.10, 2.11, 2.12, 2.13 and 2.14 as prescribed in the above referred MoEF's revised guidelines need to be furnished.	• Table 2.2 is not applicable as no industrial effluent enters the river. • For Table 2.7 refer Annexure V • For Table 2.8 – Sewer water is not entering in to the open drains, it is being taken care by sewerage system • Table 2.10, 2.11, 2.12, 2.13 and 2.14 are attached in Annexure VII
14.	Base year and the design year should be adopted on realistic basis. The year of expected commissioning of the project shall be taken as the base year for design of various components of all projects. Design periods of various components should be adopted as the guidelines mentioned above.	• Refer Chapter 3 of D.P.R of Rejuvenation of Nag River and its tributaries – Volume III
15.	Bar Chart/PERT Chart relating to the implementation of the project is not attached.	• Refer Chapter 3 of D.P.R of Rejuvenation of Nag River and its tributaries – Volume III

16.	STP has been proposed in DPR without evaluating the different available proven technology with respect to performance, life cycle cost over the useful period of utilization.	• Refer Annexure I and II
17.	The estimation of various items of the proposal has been carried out without detailed survey, engineering design and drawings, The provision of each and every item should be made after assessing the requirement and justification.	• Refer Chapter 4 and 5 of D.P.R of Rejuvenation of Nag River and its tributaries – Volume III

Estimate at a Glance

River	Location of Node	Node No.	Description of Items Proposed	Total Amount Rs.	Amount Cr.
Nag	Shankar Nagar Garden		Core Items Sewerage Treatment Plant with operation and maintenance for a period of 5 years Monitoring room	62656728	6.27
			Sub Total	62656728	
			Total (Including 8% centage Charges)	67669266	6.77
Nag	Canal Road - Ramdas Peth	3	Core Items Toilet block (Small) Gravel filters for non-point sources of water pollution Protection Edge Wall Coir Bund (3 no) Vermi Compost Pit Cleaning of River Bed	49909789	4.99
			Non-Core Items Construction of ghats with flower beds Deck Footpath (1.5 m wide) Percolation wells Monitoring room	9333576	0.93
			Sub Total	59243365	
			Total (Including 8% centage Charges)	63982834	6.40
Nag	Sangam of Nag & Phutala	4	Core Items Sewerage Treatment Plant with operation and maintenance for a period of 5 years Toilet block (Larger) Gravel filters for non-point sources of water pollution Protection edge wall with flower bed Coir Bund (2 no) Vermi Compost Pit Cleaning of River Bed	92160206	9.22
			Non-Core Items Construction of ghats Percolation well Public participation and awareness including informative Signages etc. Monitoring room	6652245	0.67
			Sub Total	98812451	
			Total (Including 8% centage Charges)	106717447	10.67

River	Location of Node	Node No.	Description of Items Proposed	Total Amount Rs.	Amount Cr.
Nag	Moris Playground & Joshi Wadi	5	Core Items Toilet block (Small) Gravel filters for non-point sources of water pollution Protection edge wall with flower bed Coir Bund (2 no) Vermi Compost Pit Cleaning of River Bed	12354620	1.24
			Non-Core Items Construction of ghats with flower beds Elevated Pathway Lower Pathway with Plantation Amphi Seating Monitoring room Percolation well Public participation and awareness including informative Signages etc.	13210605	1.32
			Sub Total	25565225	
			Total (Including 8% centage Charges	27610443	2.76
Nag	Ashok Chowk	9 & 10	Core Items Toilet block (Large) Gravel filters for non-point sources of water pollution Protection edge wall with flower bed (South Edge) Protection edge wall with (North Edge) including Eco-Park Plantation Coir Bund (1 no) Vermi Compost Pit Cleaning of River Bed	19582201	1.96
			Non-Core Items Construction of ghats with flower beds Pathway near Ghats Monitoring Room Percolation well Public participation and awareness including informative Signages etc.	3444877	0.34
			Sub Total	23027078	
			Total (Including 8% centage Charges	24869244	2.49
Nag	Temple & ground apposite Reshambaug	11	Core Items Sewerage Treatment Plant with operation and maintenance for a period of 5 years Monitoring Room	66558155	6.66

River	Location of Node	Node No.	Description of Items Proposed	Total Amount Rs.	Amount Cr.	
			Toilet block (Large) Vermi Compost Pit Cleaning of River Bed Non-Core Items Percolation well Plantation, chain link fencing, pathway etc Public participation and awareness including informative Signages etc.	3139428	0.31	
		Sub Total			69697583	
		Total (Including 8% centage Charges)			75273390	7.53
Nag	Institutional Belt	12	Core Items UCR edge Wall, Fencing and Plantation bed along the river Coir Bund (2 no) Vermi-compost Cleaning of River Bed Non-Core Items Percolation well Public participation and awareness including informative Signages etc.	33351056	3.34	
		Sub Total			33658308	
		Total (Including 8% centage Charges)			36350973	3.64
Nag	Xavier school	15	Core Items UCR Wall and protection edge, Plantation, chain link fencing etc. Coir Bund (2 no) Vermi-compost Cleaning of River Bed Non-Core Items Percolation well Public participation and awareness including informative Signages etc.	5640581	0.56	
		Sub Total			5947833	
		Total (Including 8% centage Charges)			6423660	0.64
Nag	Sangam of Nag & Pili	16	Core Items Toilet block (Small) Plantation buffer Coir Bunds in Shanti nagar nala (2 no) Coir Bunds in Pili river (2 no) Vermi-compost	2556518	0.26	

River	Location of Node	Node No.	Description of Items Proposed	Total Amount Rs.	Amount Cr.
			Non-Core Items Monitoring Room Public participation and awareness including informative Signages etc.	950728	0.10
			Sub Total	3507246	0.38
			Total (Including 8% centage Charges)	3787826	
Phutal a Tributary	Open patch along the river before Ravi Nagar crossing	2	Core Items Sewerage Treatment Plant with operation and maintenance for a period of 5 years Monitoring Room Gravel filters for non-point sources of water pollution Protection edge wall Plantation Fencing Vermi-compost Cleaning of River Bed	67909079	6.79
			Non-Core Items Percolation well Public participation and awareness including informative Signages etc.	207252	0.02
			Sub Total	68116331	7.36
			Total (Including 8% centage Charges)	73565637	
Phutal a Tributary	Canal Road - Dharampeth	3	Core Items Toilet block (Small) Gravel filters for non-point sources of water pollution Protection edge wall Coir Bund (2 no) Vermi-compost Cleaning of River Bed	49444753	4.94
			Non-Core Items Construction of ghats Deck Footpath (1.5 m wide) Percolation well Public participation and awareness including informative Signages etc.	8838468	0.88
			Monitoring Room		
			Sub Total	58283221	6.29
		Total (Including 8% centage Charges)	62945879		
Phutal a	Section through	5	Core Items Toilet block (Small)	2721496	0.27

River	Location of Node	Node No.	Description of Items Proposed	Total Amount Rs.	Amount Cr.
Tributary	Maharajbaug & institutional land		Coir Bund (4 no) Plantation and Pathway Vermi-compost Non-Core Items Percolation well Public participation and awareness including informative Signages etc.	707252	0.07
			Sub Total	3428748	
			Total (Including 8% centage Charges)	3703048	0.37
Nag River & Phutala Tributary	River edge		Core Items Toilet block (Small) Toilet block (Large) Gavel filters for control of non-point source of pollution Vermi-compost Protection edge wall and pathways Non-Core Items Monitoring Room Percolation well Public participation and awareness including informative Signages etc.	20275281 457980	2.03 0.05
			Sub Total	20733261	
			Total (Including 8% centage Charges)	22391922	2.24
Nag River	Nag west Indira Nagar Pardi		Core Items Installation of L.P.G. base crematorium at Nag river west at Indira Nagar at Pardi	21276276	2.13
			Sub Total	21276276	2.13
			Total (Including 8% centage Charges)	22978378	2.30
Nag River			Core Items Bridges at Ramdas Peth, Canal Road	2746200	0.27
			Sub Total	2746200	
			Total (Including 8% centage Charges)	2965896	0.30
Nag River			Core Items Sewer Mains, M.H. Chambers, Chairs, Thrust Blocks, Coffer Dams Sewage Pumping Stations Sewage Pumping Mains	612482107	61.25

River	Location of Node	Node No.	Description of Items Proposed	Total Amount Rs.	Amount Cr.
			Sub Total	612482107	61.25
			Total (Including 8% centage Charges)	661480675	66.15

GRAND TOTAL	1262716518	126.3
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TOTAL - CORE ITEMS	1121625046	
Total (Including 8% centage Charges)	1211355050	121.14

TOTAL - NON- CORE ITEMS	47556915	
Total (Including 8% centage Charges)	51361468	5.14

Detail Estimate

River	Location of Node	Node No.	Description of Items Proposed	No/Length	Unit	Amount Rs.	Total Amount Rs.	Amount Cr.	Remark
Nag	Shankar Nagar Garden		Core Items						
			Sewerage Treatment Plant with operation and maintenance for a period of 5 years	5	mld		62506000		Annexure I, II
			Monitoring room	1	no	150728	150728		Abstract 10
			Sub Total				62656728		
			Total (Including 8% centage Charges)				67669266	6.77	
Nag	Canal Road - Ramdas Peth	3	Core Items						
			Toilet block (Small)	2	no	840834	1681668		Abstract 3
			Gravel filters for non-point sources of water pollution	45	no	2765	124425		Abstract 5
			Protection Edge Wall	1660	m	24213	40193580		Abstract 4
			Coir Bund (3 no)	38	m	5616	213408		Abstract 8
			Vermi Compost Pit	2	no	40279	80558		Abstract 6
			Cleaning of River Bed	950	m	8017	7616150		Abstract 23
			Non-Core Items						
			Construction of ghats with flower beds	12	no	160890	1930680		Abstract 2
			Deck	12	no	429318	5151816		Abstract 11
			Footpath (1.5 m wide)	950	m	2098	1993100		Abstract 24
			Percolation wells	4	no	26813	107252		Abstract 1
			Monitoring room	1	no	150728	150728		Abstract 10
			Sub Total				59243365		
			Total (Including 8% centage Charges)				63982834	6.40	
Nag	Sangam of Nag & Phutala	4	Core Items						
			Sewerage Treatment Plant with operation and maintenance for a period of 5 years	5	mld		62506000		Annexure I, II
			Toilet block (Larger)	1	no	2057129	2057129		Abstract 7
			Gravel filters for non-point sources of water pollution	15	no	2765	41475		Abstract 5
			Protection edge wall with flower bed	924	m	24213	22372812		Abstract 4
			Coir Bund (2 no)	52	m	5616	292032		Abstract 8
			Vermi Compost Pit	2	no	40279	80558		Abstract 6
			Cleaning of River Bed	600	m	8017	4810200		Abstract 23
			Non-Core Items						

River	Location of Node	Node No.	Description of Items Proposed	No/Length	Unit	Amount Rs.	Total Amount Rs.	Amount Cr.	Remark
			Construction of ghats	38.5	no	160890	6194265		Abstract 2
			Percolation well	4	no	26813	107252		Abstract 1
			Public participation and awareness including informative Signages etc.				200000.0		
			Monitoring room	1	no	150728	150728		Abstract 10
			Sub Total				98812451		
			Total (Including 8% centage Charges)				106717447	10.67	
Nag	Moris Playground & Joshi Wadi	5	Core Items						
			Toilet block (Small)	2	no	840834	1681668		Abstract 3
			Gravel filters for non-point sources of water pollution	30	no	2765	82950		Abstract 5
			Protection edge wall with flower bed	300	m	24213	7263900		Abstract 4
			Coir Bund (2 no)	64	m	5616	359424		Abstract 8
			Vermi Compost Pit	2	no	40279	80558		Abstract 6
			Cleaning of River Bed	360	m	8017	2886120		Abstract 23
			Non-Core Items						
			Construction of ghats with flower beds	12	no	160890	1930680		Abstract 2
			Elevated Pathway	140	m	40016	5602240		Abstract 19
			Lower Pathway with Plantation	320	m	13012	4163840		Abstract 20
			Amphi Seating	3	no	351955	1055865		Abstract 21
			Monitoring room	1	no	150728	150728		Abstract 10
			Percolation well	4	no	26813	107252		Abstract 1
			Public participation and awareness including informative Signages etc.				200000.0		
			Sub Total				25565225		
			Total (Including 8% centage Charges)				27610443	2.76	
Nag	Ashok Chowk	9 & 10	Core Items						
			Toilet block (Large)	2	no	2057129	4114258		Abstract 7
			Gravel filters for non-point sources of water pollution	8	no	2765	22120		Abstract 5
			Protection edge wall with flower bed (South Edge)	80	m	24213	1937040		Abstract 4
			Protection edge wall with (North Edge) including Eco-Park	315	m	24213	7627095		Abstract 4
			Plantation				2448314		Abstract 13
			Coir Bund (1 no)	26	m	5616	146016		Abstract 8
			Vermi Compost Pit	2	no	40279	80558		Abstract 6

River	Location of Node	Node No.	Description of Items Proposed	No/ Length	Unit	Amount Rs.	Total Amount Rs.	Amount Cr.	Remark
			Cleaning of River Bed	400	m	8017	3206800		Abstract 23
			Non-Core Items						
			Construction of ghats with flower beds	11.7	no	160890	1877050		Abstract 2
			Pathway near Ghats				709847		Abstract 12
			Monitoring Room	1	no	150728	150728		Abstract 10
			Percolation well	4	no	26813	107252		Abstract 1
			Public participation and awareness including informative Signages etc.				600000.0		
			Sub Total				23027078		
			Total (Including 8% centage Charges)				24869244	2.49	
Nag	Temple & ground apposite Reshambaug	11	Core Items						
			Sewerage Treatment Plant with operation and maintenance for a period of 5 years	5	mld		62506000		Annexure I, II
			Monitoring Room	1	no	150728	150728		Abstract 10
			Toilet block (Large)	1	no	2057129	2057129		Abstract 7
			Vermi Compost Pit	2	no	40279	80558		Abstract 6
			Cleaning of River Bed	220	m	8017	1763740		Abstract 23
			Non-Core Items						
			Percolation well	4	no	26813	107252		Abstract 1
			Plantation, chain link fencing, pathway etc				2432176		Abstract 14
			Public participation and awareness including informative Signages etc.				600000.0		
			Sub Total				69697583		
			Total (Including 8% centage Charges)				75273390	7.53	
Nag	Institutional Belt	12	Core Items						
			UCR edge Wall, Fencing and Plantation bed along the river				23268210		Abstract 22
			Coir Bund (2 no)	68	m	5616	381888		Abstract 8
			Vermi-compost	2	no	40279	80558		Abstract 6
			Cleaning of River Bed	1200	m	8017	9620400		Abstract 23
			Non-Core Items						
			Percolation well	4	no	26813	107252		Abstract 1

River	Location of Node	Node No.	Description of Items Proposed	No/Length	Unit	Amount Rs.	Total Amount Rs.	Amount Cr.	Remark
			Public participation and awareness including informative Signages etc.				200000		
			Sub Total				33658308		
			Total (Including 8% centage Charges)				36350973	3.64	
Nag	Xavier school	15	Core Items				2962023		
			UCR Wall and protection edge, Plantation, chain link fencing etc.						Abstract 15
			Coir Bund (2 no)	120	m	5616	673920		Abstract 8
			Vermi-compost	2	no	40279	80558		Abstract 6
			Cleaning of River Bed	240	m	8017	1924080		Abstract 23
			Non-Core Items						
			Percolation well	4	no	26813	107252		Abstract 1
			Public participation and awareness including informative Signages etc.				200000		
			Sub Total				5947833		
			Total (Including 8% centage Charges)				6423660	0.64	
Nag	Sangam of Nag & Pili	16	Core Items						
			Toilet block (Small)	2	no	840834	1681668		Abstract 3
			Plantation buffer				401172		Abstract 18
			Coir Bunds in Shanti nagar nala (2 no)	26	m	5616	146016		Abstract 8
			Coir Bunds in Pili river (2 no)	44	m	5616	247104		Abstract 8
			Vermi-compost	2	no	40279	80558		Abstract 6
			Non-Core Items						
			Monitoring Room	1	no	150728	150728		Abstract 10
			Public participation and awareness including informative Signages etc.				800000		
			Sub Total				3507246		
			Total (Including 8% centage Charges)				3787826	0.38	
Phutal a Tributary	Open patch along the river before Ravi Nagar crossing	2	Core Items				62506000		
			Sewerage Treatment Plant with operation and maintenance for a period of 5 years	5	mld				Annexure I, II
			Monitoring Room	1	no	150728	150728		Abstract 10
			Gravel filters for non-point sources of water pollution	16	no	2765	44240		Abstract 5

River	Location of Node	Node No.	Description of Items Proposed	No/Length	Unit	Amount Rs.	Total Amount Rs.	Amount Cr.	Remark
			Protection edge wall	160	m	24213	3874080		Abstract 4
			Plantation				93254		Abstract 16
			Fencing	104	m	1522	158288		Abstract 9
			Vermi-compost	1	no	40279	40279		Abstract 6
			Cleaning of River Bed	130	m	8017	1042210		Abstract 23
			Non-Core Items						
			Percolation well	4	no	26813	107252		Abstract 1
			Public participation and awareness including informative Signages etc.				100000		
			Sub Total				68116331		
			Total (Including 8% centage Charges)				73565637	7.36	
Phutal a Tributary	Canal Road - Dharampeth	3	Core Items						
			Toilet block (Small)	2	no	840834	1681668		Abstract 3
			Gravel filters for non-point sources of water pollution	160	m	2765	442400		Abstract 5
			Protection edge wall	1647	m	24213	39878811		Abstract 4
			Coir Bund (2 no)	26	m	5616	146016		Abstract 8
			Vermi-compost	2	no	40279	80558		Abstract 6
			Cleaning of River Bed	900	m	8017	7215300		Abstract 23
			Non-Core Items						
			Construction of ghats	11	no	160890	1769790		Abstract 2
			Deck	11	no	429318	4722498		Abstract 11
			Footpath (1.5 m wide)	900	m	2098	1888200		Abstract 24
			Percolation well	4	no	26813	107252		
			Public participation and awareness including informative Signages etc.				200000		
			Monitoring Room	1	no	150728	150728		Abstract 10
			Sub Total				58283221		
			Total (Including 8% centage Charges)				62945879	6.29	
Phutal a Tributary	Section through Maharajbaug & institutional land	5	Core Items						
			Toilet block (Small)	1	no	840834	840834		Abstract 3
			Coir Bund (4 no)	48	m	5616	269568		Abstract 8
			Plantation and Pathway				1530536		Abstract 17
			Vermi-compost	2	no	40279	80558		Abstract 6

River	Location of Node	Node No.	Description of Items Proposed	No/Length	Unit	Amount Rs.	Total Amount Rs.	Amount Cr.	Remark
			Non-Core Items						
			Percolation well	4	no	26813	107252		Abstract 1
			Public participation and awareness including informative Signages etc.				600000		
			Sub Total				3428748		
			Total (Including 8% centage Charges)				3703048	0.37	
Nag River & Phutala Tributary	River edge		Core Items						
			Toilet block (Small)	4	no	840834	3363336		Abstract 3
			Toilet block (Large)	1	no	2057129	2057129		Abstract 7
			Gavel filters for control of non-point source of pollution	60	m	2765	165900		Abstract 5
			Vermi-compost	4	no	40279	161116		Abstract 6
			Protection edge wall and pathways	600	m	24213	14527800		Abstract 4
			Non-Core Items						
			Monitoring Room	1	no	150728	150728		Abstract 10
			Percolation well	4	no	26813	107252		Abstract 1
			Public participation and awareness including informative Signages etc.				200000		
			Sub Total				20733261		
			Total (Including 8% centage Charges)				22391922	2.24	
Nag River	Nag west Indira Nagar Pardi		Core Items						
			Installation of L.P.G. base crematorium at Nag river west				7092092	0.71	Annexure III
			at Indira Nagar				7092092	0.71	Annexure III
			at Pardi				7092092	0.71	Annexure III
			Sub Total				21276276	2.13	
			Total (Including 8% centage Charges)				22978378	2.30	
Nag River			Core Items						
			Bridges at Ramdas Peth, Canal Road	3	no	915400	2746200		Abstract 25
			Sub Total				2746200		
			Total (Including 8% centage Charges)				2965896	0.30	
Nag			Core Items						

River	Location of Node	Node No.	Description of Items Proposed	No/ Length	Unit	Amount Rs.	Total Amount Rs.	Amount Cr.	Remark
River			Sewer Mains, M.H. Chambers, Chairs, Thrust Blocks, Cofferdams				291450000	29.15	Abstract 26 A
			Sewage Pumping Stations				301579500	30.16	Abstract 26 B
			Sewage Pumping Mains				19452607	1.95	Abstract 26 C
		Sub Total					612482107	61.25	
		Total (Including 8% centage Charges)					661480675	66.15	

GRAND TOTAL	1262716518	126.3
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BAR CHART FOR PROJECT IMPLEMENTATION

[illegible]

ABSTRACT 1
PERCOLATION WELL

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	Bd- A-1 /259	5.50	Cu.Mt.	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete. (Spec.No. : Bd.A.1/Page No.259) Lift upto 1.5 M (I -1A) i P -1	107.00	Rs. One Hundred Two Only.	588.50
				Including Dewatering			
2	Bd- A-1 /259	2.75	Cu.Mt.	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete. (Spec.No. : Bd.A.1/Page No.259) ii. Lift above 1.5 m to 3.00 m.Depth (I -A) ii P- 1	115.00	Rs. One Hundred eleven Only.	316.25
				Including Dewatering			
3	Bd- A-2 /259	2.75	Cu.Mt.	Excavation for foundation in hard murum including removing the excavated material upto distance of 50 meters beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etc. complete.(Spec. No. : Bd.A. 2/Page No. 259)ii. Lift above 1.5 m to 3.00 m.Depth (I - 2A)ii P-1	130.00	Rs. One Hundred twenty Four Only.	357.50
				Including Dewatering			
4	Bd- A-2 /259	0.68	Cu.Mt.	Excavation for foundation in hard murum including removing the excavated material upto distance of 50 meters beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etc. complete.(Spec. No. : Bd.A. 2/Page No. 259) iii Lift above 3.00 m. Depth (I - 2A)iii P-1	140.00	Rs. One Hundred Thirty Six Only.	95.20
				Including Dewatering			
5	Bd-A -14/ 264	0.41	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264 (I -10 P-2)	771.00	Rs. Seven Hundred seventy one Only.	316.11

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
6	Bd- E-1 / 287	0.86	Cu.Mt.	Providing and laying in situ, cement concrete M-15 of trap/ granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood/steel formwork, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I -24 P - 5)	3915.00	Rs.Three thousand nine hundred fifteen Only.	3366.90
7	Bd/G-1 P - 313	3.75	Cu.Mt.	Providing 2nd class Burnt Brick masonry with conventional/I.S. type bricks in cement mortar 1:6 in foundations and plinth of inner walls/in plinth of external walls including bailing out water, striking joints on unexposed faces, racking out joints on exposed faces and watering complete. Spec.No.: Bd.G.1/Page No.313 (I -50 P 11)	3443.00	Rs. Three Thousand Four Hundred Forty Three Only	12911.25
8	Bd/A -13 P 264	5.30	Cu.Mt.	Providing and filling in the foundation and plinth with sand of approved quality including watering, compaction complete.(Spec. No. : Bd.A. 13/Page No. 264) (I - 9 P- 2)	620.00	Rs. Six Hundred Twenty Only.	3286.00
9	BR 6A	45.00	Rmt.	Providing and fixing A.C./ UPVC pipes of 100 mm diameter and of required length for relieving water pressure, stone filter as directed complete. (For vent holes in raft). (I-497 P-73)	118.00	Rs. One hundred and eightin only	5310.00
						Total Rs. =	26547.71
				Add Miscellenious 1 %			265.48
							26813.19
						Say Rs. =	26813

ABSTRACT 2

GHAT WITH FLOWER BED

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1		15.60	Cu.Mt.	Dismantling brick masonry in lime or cement mortar and stacking the materials as directed with all leads, lifts etc. complete. Spec.No. : As directed by Engineer-in-charge. (I-455 P-67)	125.00	Rs. One Hundred Twenty Five Only.	1950.00
2	Bd- A-1 /259	56.70	Cu.Mt.	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete. (Spec.No. : Bd.A.1/Page No.259) Lift upto 1.5 M (I-1A) i P-1 Including Dewatering	107.00	Rs. One Hundred Two Only.	6066.90
3	Bd- A-1 /259	11.81	Cu.Mt.	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete. (Spec.No. : Bd.A.1/Page No.259) ii. Lift above 1.5 m to 3.00 m.Depth (I-A) ii P- 1 Including Dewatering	115.00	Rs. One Hundred eleven Only.	1358.15
4	Bd- A-2 /259	11.81	Cu.Mt.	Excavation for foundation in hard murum including removing the excavated material upto distance of 50 meters beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etc. complete.(Spec. No. : Bd.A. 2/Page No. 259)ii. Lift above 1.5 m to 3.00 m.Depth (I - 2A)ii P-1 Including Dewatering	130.00	Rs. One Hundred Twenty Four Only.	1594.35
5	Bd-A -12/ 264	7.64	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264 (I -10 P-2)	771.00	Rs. Seven Hundred Seventy One Only.	5890.44
6	Bd- E-1 / 287	4.98	Cu.Mt.	Providing and laying in situ, cement concrete M-15 of trap/ granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood/steel formwork, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I-24 P - 5)	3915.00	Rs.Three Thousand Nine Hundred Fifteen Only.	19496.70

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
8	Bd/H-1 P - 329	52.70	Cu.Mt.	Providing uncoursed rubble masonry of trap/granite/quartzite/gneiss stones in cement mortar 1:6 in foundations and plinth of inner walls / in plinth of external walls including bailing out water, striking joints on unexposed faces and watering complete. Spec.No.: Bd.H.1/Page No.329 (I -60 P 12)	1572.00	Rs. One Thousand Five Hundred Seventy Two Only	82844.40
9	Bd- M -4 /380	41.00	Sq.Mt.	Providing and laying polished Shahabad Stone Flooring 20 mm to 25 mm thick and of required width in plain/diamond pattern with black polished kaddappa slab for border or any other design on a bed of C.M. 1:6 including cement float, filling joints with neat cement slurry, curing polishing and cleaning complete. Spec.No.: Bd.M.4/Page No.380 (I -112 P - 21)	546.00	Rs. Five Hundred Forty Six Only.	22386.00
11	C.S.R. Road construction W.B.M. Sr. No. 37, RD-28 P. No. 229, 2011-12.	2.52	Cu.Mt.	Filling fresh garden soil/silt & manure in excavated area including lead up to a distance of 50mtrs.	42.00	Rs. Fourty Two Only.	105.84
12	C.S.R.I. No. 1, Page No. 2, Parks and Garden2011-12	2.52	Cu.Mt.	GARDEN SOIL :- supplying on site garden soil, well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.)	330.00	Rs. Three Hundred Thirty Only.	831.60
13	C.S.R.I. No. 9, Page No. 3, Parks and Garden 2011-12	20.00	No.	Saplings of small and medium ornamental flowering plants, Thuja, Cupresus, Palms, Ornamental Ficus, Musanda etc.	50.00	Rs. Fifty Only.	1000.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
14	Bd/V-36 P- 571	3.00	Rmt.	Providing and fixing 100 mm. Diameter cast iron centrifuguly spurn soil/ vent/ waste pipes with necessary fixtures and fitting such as bends, tees, single junction, double junction, slotted vent offsets on walls or in the ground including filling joints with lead with read lead oil paint coat and two coats of anticorrosive paint including fixing the pipe on walls by means of nails driven through lugs in wooden holder/battens and supported on ground floor by C.C. 1:2:4 of 30 cm. x 30 cm. size blocks complete.Spec. No.: BD.V.36 Page No. 571. (I -403 P-62)	913.00	Rs. Nine Hundred Thirteen Only.	2739.00
						Total Rs. =	146263.38
				Add Miscellenious 1 %			1462.63
							160889.72
						Say Rs. =	160890

ABSTRACT 3
TOILET BLOCK (SMALL)

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	Bd- A-B-2-1 /259	48.89	Cu.Mt.	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete. (Spec.No. : Bd.A.1/Page No.259) Lift upto 1.5 M (I -1A) i P -1	107.00	Rs. One Hundred Two Only.	5231.23
				Including dewatering			
2	Bd- A-B-2-ii-1 /259	4.55	Cu.Mt.	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete. (Spec.No. : Bd.A.1/Page No.259) ii. Lift above 1.5 m to 3.00 m.Depth (I -A) ii P- 1	115.00	Rs. One Hundred eleven Only.	523.25
				Including dewatering			
3	Bd- A-2-B-2-ii /259	4.55	Cu.Mt.	Excavation for foundation in hard murum including removing the excavated material upto distance of 50 meters beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etc. complete.(Spec. No. : Bd.A. 2/Page No. 259)ii. Lift above 1.5 m to 3.00 m.Depth (I - 2A)ii P-1	124.00	Rs. One Hundred twenty Four Only.	564.20
				Including dewatering			
4	Bd-A -14/ 264	7.34	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264 (I -10 P-2)	771.00	Rs. Seven Hundred seventy one Only.	5659.14

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
5	Bd- E-1 / 287	4.79	Cu.Mt.	Providing and laying in situ, cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood/steel formwork, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I -24 P - 5)	3915.00	Rs.Three thousand nine hundred fifteen Only.	18752.85
8	Bd/G-1 P - 313	18.47	Cu.Mt.	Providing 2nd class Burnt Brick masonry with conventional/I.S. type bricks in cement mortar 1:6 in foundations and plinth of inner walls/in plinth of external walls including bailing out water, striking joints on unexposed faces, racking out joints on exposed faces and watering complete. Spec.No.: Bd.G.1/Page No.313 (I -50 P 11)	3443.00	Rs. Three Thousand Four Hundred Forty Three Only	63592.21
9	Bd/A-10 P-262	5.96	Cu.Mt.	Filling in plinth and floors with approved excavated materials in 15 cm. to 20 cm. layers including watering and compaction complete.(Spec. No. : Bd.A. 10/Page No. 262) (I -7 P - 2)	51.00	Rs. Fifty One Only.	303.96
10	Bd- E -1 /287	0.63	Cu.Mt.	Providing and laying in situ, cement concrete M-10/(1:3:6) of trap/granite/quartzite/gneiss metal for foundation and bedding including plywood/steel formwork bailing out water, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I -23 P - 4)	3365.00	Rs. Three Thousand Three Hundred Sixty Five Only.	2119.95
11	Bd/A-14 P-264	2.61	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264) (I -10 P-2)	771.00	Rs. Seven Hundred Seventy One Only.	2012.31

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
12	Bd/E -1 P-287	2.61	Cu.Mt.	Providing and laying in situ, cement concrete M-10/(1:3:6) of trap/granite/quartzite/gneiss metal for foundation and bedding including plywood/steel formwork bailing out water, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I -23 P - 4)	3365.00	Rs. Three Thousand Three Hundred Sixty Five Only.	8782.65
13	Bd/G-5 P - 315	34.83	Cu.Mt.	Providing second class burnt brick masonry with conventional / I.S.Type bricks in cement mortar 1:6 in superstructure as backing in composite masonry including scaffolding , racking out joints and watering etc. Complete. Spec.No.: Bd.G.5/Page No.315 (I - 52 P- 11)	3496.00	Rs. Three Thousand Four Hundred Ninety Six Only.	121765.68
14	Bd/G-7 P-316	11.71	Sq.Mt.	Providing second class Burnt Brick masonry with conventional / I.S. type bricks in cement mortar 1:4 in half brick thick wall including mild steel longitudinal reinforcement of 2 bars of 6 mm. diameter/2 hoop iron strips 25 mm x 1.6 mm placed at every third course, properly bent and bounded at ends scaffolding, racking out joints and watering complete. Spec.No.: Bd.G.7/Page No.316 (I- 54 P - 11)	557.00	Rs. Five Hundred Fifty Seven Only.	6522.47
15	Bd/ F-6 P-300	0.97	Cu.Mt.	Providing and casting in situ cement concrete of required grade of trap / granite /quartzite /gneiss metal for R.C.C. beams and lintels as per detailed design and drawings or as directed,including steel centering, plywood/steel formwork steel props, compaction, finishing uneven and honeycombed surface with C.M.1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish is to be provided and curing etc. complete. Including use of plastisizer wherever necessary as directed by Engineer-In-charge (Excluding reinforcement, including cover block). The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed) b) For C.C.M-25 Spec.No.: Bd.F.6/Page No.300/I.S. 456 (2000) (I - 33b) P - 7	5982.00	Rs. Five Thousand Nine Hundred Eighty Two Only.	5802.54

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
16	Bd/ F-9 P-303	0.57	Cu.Mt.	Providing and casting in situ cement concrete of required grade of trap / quartzite / granite/ gneiss metal for R.C.C. chajja as per detailed design and drawings including steel centering, plywood/steel formwork, steel props, compaction finishing uneven and honeycombed surface with C.M. 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening the surface if special finish is to be provided and curing etc.complete.(Excluding reinforcement, including cover block) The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only.Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed) b) For C.C.M-25 Spec.No.: Bd.F.9/Page No.303/I.S. 456 (2000) (I - 34b) P - 7	6323.00	Rs. Six Thousand Three Hundred Twenty Three Only.	3604.11
17	Bd/ F-6 P-300	2.57	Cu.Mt.	Providing and casting in situ cement concrete of required grade of trap / granite /quartzite /gneiss metal for R.C.C. beams and lintels as per detailed design and drawings or as directed,including steel centering, plywood/steel formwork steel props, compaction, finishing uneven and honeycombed surface with C.M.1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish is to be provided and curing etc. complete. Including use of plastisizer wherever necessary as directed by Engineer-In-charge (Excluding reinforcement, including cover block). The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed) b) For C.C.M-25 Spec.No.: Bd.F.6/Page No.300/I.S. 456 (2000) (I - 33 b) P - 7	5982.00	Rs. Five Thousand Nine Hundred Eighty Two Only.	15373.74
18	Bd/ F-8 P-302	8.31	Cu.Mt.	Providing and casting in situ cement concrete of required grade of trap / granite /quartzite /gneiss metal for R.C.C slabs and landings as per detailed design and drawings including steel centering, plywood /steel formwork, steel props, compaction, finishing uneven and honeycombed surface with C.M. 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening the surface if special finish is to be and painting to exposed surface and curing etc.completed. (Excluding reinforcement, including cover block) The Cement Mortar 1:3 plaster is considered for rendering uneven and honey combed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed) b) For C.C.M-25 Spec.No.: Bd.F.8/Page No.302/I.S. 456 (2000) (I - 39b) P- 9	6586.00	Rs. Six Thousand Eight Hundred Eighty Six Only.	54729.66

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
19	Bd-F- 17/ 306	1.50	M.T.	Providing and fixing in position reinforcement of various diameters for R.C.C. pile caps, footings, foundations, slabs, beams and columns, canopies, staircases, newels, chajjas, lintels, pardies, coping, fins, arches etc. as per detailed design and drawings and schedules including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required completed. b) For TMT steel bars (If TMT steel is to be used prior permission from S.E.should be taken) Spec.No.: Bd.F.17/Page No.306 (I - 46 b) P - 10	57400.00	Rs. Fifty Seven Thousand Four Hundred Only.	86100.00
20		19.38	Sq.Mt.	Providing and Laying vetrified tiles of approved make and quality of required size for flooring in required position laid on bed of C.M.1:4 including cement float, filling joint with white / colour cement slurry, cleaning, curing, complete. a) 600mm x 600mm. size. Spec.No.: As directed by Engineer- in-charge.(I - 157 (a) P 27	1,249.00	Rs. One Thousand Two Hundred Fourty Nine Only.	24205.62
21		69.68	Sq.Mt.	Providing and fixing vetrified tiles of approved make and quality of required size for dado and skirting in required position with ready made adhesive mortar of approved quality in required position after making the wall portion in level in plaster of C.M. 1:4 including joint filling with white/colour cement slurry cleaning curing complete. a) 600 mm x 600 mm. size. Spec.No.: As directed by Engineer- in-charge. (I - 158 a) P - 27	1,294.00	Rs. One Thousand Two Hundred Ninety Four Only.	90165.92

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
22		2.00	No.	Providing and fixing 1st class "Orissa Type" Colour Glazed earthenware 600 x 400 mm. W.C. PAN including 'P' or 'S' trap, UPVC soil and vent pipe upto the out side face of wall, including 100 mm dia. UPVC plug bend, 10 litre UPVC low level flushing cistern with fittings, inlet pipe with stop cock, brackets, 32 mm dia. UPVC flush pipe with fittings and clamps, 20 mm dia. UPVC over flow pipe with mosquito proof coupling, cutting and making good to the walls and floors, testing etc. complete. (Prior approval of sample and brand by Ex.Engineer is necessary before use.) Spec.No.: As directed by Engineer- in-charge. (I - 360 P - 56)	3,800.00	Rs. Three Thousand Eight Hundred Only.	7600.00
23	Bd/V-23 P-562	4.00	No.	Providing and fixing white glazed earthenware full stall type Urinal without cistern, stop tap with inlet pipes and 32 mm dia. UPVC flush pipe, with fitting and flushing arrangement including UPVC soil pipe, UPVC trap and soil pipe connection upto the outside face of the wall, making good to damaged surface testing etc. complete. (Prior approval of sample and brand by Ex.Engineer is necessary before use.) Spec.No.: Bd/V-23 Page No.562 (I - 366 P - 57)	4,671.00	Rs. Four Thousand Six Hundred Seventy One Only.	18684.00
24	Bd/V-30 P-565	4.00	No.	Providing and fixing white glazed earthenware Wash Hand Basin of size 45 cm x 30 cm including cold water pillar tap, brackets, rubber plugs and brass chain, stop tap, chromium plated bottle trap and necessary pipe connection including UPVC waste pipe and trap up to the out side face of the wall, making good the damaged surface, testing etc. complete. (Prior approval of sample and brand by Ex.Engineer is necessary before use.)Spec.No.: Bd.V.30/Page No.565 (I - 374 P - 58)	1,984.00	Rs. One Thousand Nine Hundred Eighty Four Only.	7936.00
25		3.33	Sq.Mt.	Providing and fixing in position Partition of polished Kaddappa / Marble / Granite stone of required thickness ,including making groove in wall / concrete surface filling joints with slurry, curing, polishing, rounding edges, as required cleaning etc. complete. a) Kadappa Partition 25 mm to 30 mm thick Spec.No.: As directed by Engineer- in-charge. (I-137 a P-24)	608.00	Rs. Six Hundred Eight Only.	2024.64

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
26	Bd/M-31 P-392	5.85	Sq.Mt.	a) Providing sills of white marble Makrana slabs or equivalent 15 mm to 18 mm thick of approved quality vein and colour with machine polished surface on a bed of Cement Mortar 1:4 including neat cement float filling joints with neat cement slurry to match the colour of the slabs curing, polishing and rounding edges, cleaning etc. complete. Spec.No.: Bd.M.31/Page No.392 (I - 150 a P - 26)	2,565.00	Rs. Two Thousand Five Hundred Sixty Five Only.	15005.25
27	Bd/F-20 P-307	1.80	Sq.Mt.	Providing and fixing in position after hoisting, precast 1:2 cement mortar reinforced jali 80 mm thick of approved design on both sides fixing in cement mortar 1:3 and curing complete.(with 3 mm diameter mild steel bar reinforcement) Spec.No.: Bd.F.20 / Page No.307 (I - 48 P- 11)	524.00	Rs Five Hundred Twenty Four Only.	943.20
28	Bd/ L-7 P -369	127.50	Sq.Mt.	Providing sand faced plaster for external portion in cement mortar using Kharsalia / Kasaba or similar type of sand, in all positions including base coat of 15 mm. Thick in C.M. 1:4 using water proofing compound at 1 kg per cement bag, curing the same for not less than 3 days and keeping the surface of the base coat rough to receive the sand faced treatment 6 to 8 mm thick in C.M. 1:4 finishing the surface by taking out grains, making grooves and curing for fourteen days scaffolding etc. complete. Spec.No.: Bd.L.7/Page NO.369 (I - 95 P - 19)	280.00	Rs. Two Hundred Eighty Only.	35700.00
29	Bd/ L-4 P -368 & Bd/ L -10 P- 370	119.46	Sq.Mt.	Providing internal cement plaster 20mm thick in a single coat in cement mortar 1:4 without neeru finish to concrete, brick surfaces in all positions including scaffolding and curing. Providing groove at joint of B.B.Masonry and concrete members complete. Spec.No.: Bd/L-4 Page No.368. Providing neeru finish to plastered surfaces in all positions including scaffolding and curing etc. complete. Spec.No.: Bd/L.10 Page No. 370 (I - 92 P -18 + I - 98 P - 19)	211.00	Rs. Two Hundred Eleven Only.	25206.06

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
30	Bd/M-22 P-390	4.50	Sq.Mt.	Providing and laying polished Kota Stone slabs 20mm to 25 mm thick for treads and risers of steps and staircases, with rounded nosing and groove at edge for the treads, on a bed of C.M. 1:4 including cement float filling joints with neat cement slurry, curing, polishing and cleaning complete. Spec.No.: Bd/M-22 Page No.390 (I - 142 P - 25)	850.00	Rs. Eight Hundred Fifty Only.	3825.00
31	Bd/T-30 P-496	4.28	Sq.Mt.	Providing and fixing double leaf door,with country teak wood shutter and panels as per detailed drawing including iron oxidised fixtures and fastening stoppers and finishing with one coat of primer complete. (Excluding door frame) (Sample to be got approved from Ex. Engineer before use) b) panels of 12 mm thick, exterior grade prelaminate particle board laminated on both side. Spec.No.: Bd.T.30/Page No.496 (I - 255(1b) P - 38)	3,385.00	Rs. Three Thousand Three Hundred Eighty Five Only.	14487.80
32		3.21	Sq.Mt.	Providing & fixing approved make solid Panel of 29mm thick PVC single leaf door shutter of approved colour and design made out of rigid PVC hollow section shutter frame in configuration of A section of size 50mm x 29mm as vertical styles, top & bottom rails Machine cut and panel in fill of single panel multi chambers hollow plastic section of size 25mm x 750mm. with solid polymetric 'L' corner reinforcement holding brackets and solid polymetric reinforcement fillers for holding hinges, aldrops, latch, tower bolts, etc. remaking damaged surface etc. compete. Specification - As directed by Engineer Incharge. (I - 279 P - 42)	2,540.00	Rs. Two Thousand Five Hundred Fourty Only.	8153.40
33	Bd/V-32 P-567	4.00	No.	Providing and fixing 10cm C.I.Nahani Trap (long arm) including symet grating, bend, connecting piece of C.I.pipe upto the outside face of the wall, making good the damaged surface, testing etc. complete. (Prior approval of sample and brand by Ex.Engineer is necessary before use.) Spec.No.: Bd.V.32/Page No.567 (I - 384 P - 60)	755.00	Rs. Seven Hundred Fifty Five Only.	3020.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
34	Bd/V-36 P-571	13.00	Rmt.	Providing and fixing asbestos cement soil / vent / waste pipe of required diameter with necessary fixtures and fittings such as bends, tees, single junction, double junction, slotted vent, offsets on walls or in the ground including filling joints with cement mortar 1:2, painting with red lead oil base coat and two coats of anticorrosive paint including fixing pipes on walls by means of nails, driven through wooden lugs in wooden holder battens, fixed with concrete block and supported on ground floor by C.C. 1:2:4, block of 30 x 30 cm size, testing etc. complete. (Prior approval of sample and brand by Ex.Engineer is necessary before use.) (b) 100 mm dia. Pipe Spec.No.: Bd.V.36/Page No.571 (I - 389 b P - 61)	236.00	Rs. Two Hundred Thirty Six Only.	3068.00
35	Bd/V-38 P-572	4.00	No.	Providing and fixing 15 cm x 10 cm salt glazed stoneware gully trap in cement concrete 1:4:8 outside the building including symet grating in the sink, connecting glazed stoneware pipe, brick masonry chamber with R.C.C. lid and Symet grating for the gully trap, testing etc. complete. (Prior approval of sample and brand by Ex.Engineer is necessary before use.) Spec.No.: Bd.V.38/Page No.572 (I - 387 P - 60)	750.00	Rs. Seven Hundred Fifty Only.	3000.00
36		6.00	Nos.	Providing and constructing B.B.Masonry chamber with 100 mm thick 1:3:6 P.C.C. for bed on 100 mm thick oversizer soaling with 80 mm metal including excavation, 23 cm thick B.B.Masonry in c.m.1:6. Inside plaster in c.m.1:5 20 mm thick and outside plaster B) 900 x 600 x 450 mm (I - 677 (B) P - 106)	3,044.00	Rs. Three Thousand Forty Four Only.	18264.00
37		6.00	Rmt.	Providing and fixing 100 mm dia. Salt Glazed Stoneware pipe including fittings such as bends, tees, single junctions, double junctions, laying, jointing (excluding excavation and refilling the trenches) etc. (Cement: 1.87 kg per m) (I - 400 P - 62)	183.00	Rs. One Hundred Eighty Three Only.	1098.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
38		14.50	Rmt.	Providing and fixing 150 mm dia. Salt Glazed Stoneware pipe including fittings such as bends, tees, single junctions, double junctions, laying, jointing (excluding excavation and refilling the trenches) etc. (Cement: 2.24 kg per m) (I - 401 P - 62)	260.00	Rs. Two Hundred Sixty Only.	3770.00
39		5000.00	Litres	Providing, hoisting and fixing in position sintex or equivalent high density polyethylene UV stabilized conforming to I.S.12701, water storage tank with necessary connections, testing etc. complete. (Prior approval of sample by Ex. Engineer is necessary before use.) Spec.No.: As directed by Engineer-in-charge. (I - 339 P- 52).	6.50	Rs. Six Paise Fifty Only.	32500.00
40	Bd/V-5 P-551	10.00	Rmt.	Providing and laying G.I. Pipe in trenches 40mm diameter heavy type having 48.3 mm outer dia and 4.545 kg. per meter weight and having embossed at every metre as ISI mark and name of the manufacturer with screwed sockets, joints, and necessary galvanised iron fittings such as backnuts, elbows, bends, tees reducers, enlargers, plugs etc. including providing and applying two coats of oil paint with one coat of primer and necessary excavation and backfilling complete including removing existing pipe if necessary and conveying and stacking in P.W.D. chowky or as directed. (v) 40 mm dia. Spec.No.: Bd.V.5/Page No.551 (I - 341 (v) P - 53)	419.00	Rs. Four Hundred Nineteen Only.	4190.00
41	Bd/V-5 P-551	10.00	Rmt.	Providing and laying in trenches medium grade (type) galvanised iron pipe having embossed ISI Mark on it, of required diameter with screwed, sockets, joints, necessary galvanised iron fittings such as sockets, back nuts, elbows, bends, tees, reducers, enlargers, plugs, clamps etc. including necessary excavation, back filling, fixing with clamps, testing etc. complete. (Prior approval of sample and brand by Ex. Engineer is necessary before use.) (vi) 50 mm dia. Spec.No.: Bd.V.5/Page No.551 (I - 341 (vi) P - 53)	545.00	Rs. Five Hundred Fourty Five Only.	5450.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
42	Bd/V-5 P-551	40.00	Rmt.	Providing and laying in trenches medium grade (type) galvanised iron pipe having embossed ISI Mark on it, of required diameter with screwed, sockets, joints, necessary galvanised iron fittings such as sockets, back nuts, elbows, bends, tees, reducers, enlargers, plugs, clamps etc. including necessary excavation, back filling, fixing with clamps, testing etc. complete. (Prior approval of sample and brand by Ex. Engineer is necessary before use.) (iv) 32 mm dia. Spec.No.: Bd.V.5/Page No.551 (I - 341 (iv) P - 53)	349.00	Rs. Three Hundred Forty Nine Only.	13960.00
43	Bd/V-5 P-551	42.00	Rmt.	Providing and fixing G.I. Pipes 25 mm diameter heavy type having 33.7 mm outer dia and 3.058 kg. per meter weight and having embossed at every metre as ISI mark and name of the manufacturer to walls ceiling, floors etc. with screwed sockets, backnuts, elbows, bends, tees reducers, enlargers, plugs, clamps etc. including necessary drilling in holes in walls/ slabs etc. and remaking good the demolished portion to restore the same in original condition neatly and applying primer and two coats of oil painting including necessary scaffolding including removing the existing pipe, if necessary and conveying and stacking the same in P.W.D. chowky or as directed. etc. complete. Spec.No.: Bd.V.5/Page No.551 (I - 341 (iii) P - 53)	320.00	Rs. Three Hundred Twenty Only.	13440.00
44	Bd/V-8 P-554	10.00	No	Providing and fixing 25 mm dia. Screw down bib/stop tap of brass including necessary sockets, union nut, testing etc. complete.(Prior approval of sample and brand by Ex. Engineer is necessary before use.) Spec.No.: Bd.V.8/Page No.554 (I - 347 P - 54)	393.00	Rs. Three Hundred Ninety Three Only.	3930.00
45	Bd/V-9 P-555	1.00	No	Providing and fixing screw down required dia. wheeled stop tap of brass including necessary sockets, union nut, testing etc. complete. (Prior approval of sample and brand by Ex.Engineer is necessary before use.) d) 40 mm dia Spec.No.: Bd.V.9/Page No.555 (I - 350 d P - 54)	645.00	Rs. Six Hundred Forty Five Only.	645.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
46	Bd/V-9 P-555	1.00	No	Providing and fixing screw down required dia. wheeled stop tap of brass including necessary sockets, union nut, testing etc. complete. (Prior approval of sample and brand by Ex.Engineer is necessary before use.) Spec.No.: Bd.V.9/Page No.555 (I - 350 (e) P - 54)	1,028.00	Rs. One Thousand Twenty Eight Only.	1028.00
47	Bd/V-9 P-555	6.00	No	Providing and fixing screw down required dia. wheeled stop tap of brass including necessary sockets, union nut, testing etc. complete. (Prior approval of sample and brand by Ex.Engineer is necessary before use.) Spec.No.: Bd.V.9/Page No.555 (I - 350 (c) P - 54)	552.00	Rs. Five Hundred Fifty Two Only.	3312.00
48		2.00	No.	Providing and fixing 450 mm x 550 mm size superior type mirror with 16 mm dia. Nickel plated towel rod etc. complete. (Prior approval of sample and brand by Ex.Engineer is necessary before use.) Spec.No.: As directed by Engineer- in-charge (I - 397 P - 62)	461.00	Rs. Four Hundred Sixty One Only.	922.00
49	As per wording of item	18.00	Points	Point wiring for light / fan bell with I.S.I. mark 2-1 sq.mt. copper PVC insulated wire 1.1 K.V. grade in P.V.C. trunking (P.V.C. casing N - capping) with double locking arrangement with grooves, trunking of not below 12.5 mm in height and 20 mm in width and the thickness not below 1.2 mm as per I.S. 14927 (part- 1) of 2001 and with accessories of PVC / Virgin polypropylene not below 1.8 mm in thickness duly embossed the name of the manufacturer on casing, capping and on accessories duly sealed at joints and erected the trunking (casing N- capping) on wall/ ceiling with necessary nettle folded G.I. screws etc fixed at an interval of not more than 500 mm with Rawl Plug etc. and I.S.I. mark ceilig rose/ batten holder / slanting holder erected on polished double T.W. folded orscrewed board with top of teak wood or 3 mm thick hylam sheet / 4 mm plywood pasted with sunmica thickness not less than 1.5 mm with top of teakwood or 3 mm with round headed brass screws and cup washers complete. (Market Rate).	850.00	Rs. Eight Hundred Fifty Only.	15300.00
50	As per wording of item	8.00	No	Providing and fixing tube lights of 40 watts with prior approval of Engineer-in-Charge. (Market Rate).	500.00	Rs. Five Hundred Only.	4000.00
51	As per wording of item	4.00	No	Providing and fixing bulbs of 100 watts with prior approval of Engineer-in-Charge. (Market Rate).	24.00	Rs. Twenty Four Only.	96.00
52	As per wording of item	4.00	No	Providing and fixing Exhaust fan with prior approval of Engineer-in-Charge. (Market Rate).	1,100.00	Rs. One Thousand One Hundred Only.	4400.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
53	Bd/P-2 P- 412	178.89	Sq.Mt.	Providing & applying colour wash in three coats to old/new plastered or masonry surfaces and asbestos cement sheets including scaffolding and preparing the surface to receive the paint by brushing and brooming down and applying putty etc. complete. Spec.No.: Bd.P.2/Page No.412 (I -201 P-32)	11.00	Rs.Eleven Only.	1967.79
54	Bd/P-3 P- 412	127.50	Sq.Mt.	Providing & applying colour wash in three coats to old/new plastered or masonry surfaces and asbestos cement sheets including scaffolding and preparing the surface to receive the paint by brushing and brooming down and applying putty etc. complete.Spec.No.: Bd.P.3/Page No.412 (I -205 P-32)	11.00	Rs.Eleven Only.	1402.50
55		1.50	M.T.	Providing fusion bonded epoxy coating to reinforcement bars as per IS 13 - 620 /1993 specification for a thickness of 175 (+50) microns including extra cost on account of careful handling, extra cost on account of using PVC coated binding wire instead of G.I. wire, extra cost on account of touch-up material supplied by coating agency and repair work extra cost on account of transportation to and from steel yard at Kalamboli to plant at Daman and Plant at Daman to work site by trailer, loading, unloading, including all taxed (Central and Local), etc. complete. (b) Average rates (for estimation only) 1 - For 8 mm to 20 mm dia(I-15 P-22)Mumbai DSR 11-12	6,099.15	Rs.Six Thousand Ninety Nine & Fifteen Paise Only.	9148.73
56	Bd/V-36 P-571	12.00	Rmt.	Providing and fixing 100 mm. Diameter cast iron centrifugally spun soil/ vent/ waste pipes with necessary fixtures and fitting such as bends, tees, single junction, double junction, slotted vent offsets on walls or in the ground including filling joints with lead with read lead oil paint coat and two coats of anticorrosive paint including fixing the pipe on walls by means of nails driven through lugs in wooden holder/battens and supported on ground floor by C.C. 1:2:4 of 30 cm. x 30 cm. size blocks complete. Spec. No.: BD.V.36 Page No. 571. (I - 403 P- 62)	913.00	Rs. Nine Hundred Thirteen Only.	10956.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
57	Bd/V-35 P-571	24.00	Rmt.	Providing and fixing 75 mm. Diameter cast iron centrifuguly spurn soil/ vent/ waste pipes with necessary fixtures and fitting such as bends, tees, single junction, double junction, slotted vent offsets on walls or in the ground including excavation, laying, refilling the trench and painting the exposed pipe with oil paint complete. Spec. No.: BD.V.35 Page No. 571. (I - 404 P- 62)	761.00	Rs. Seven Hundred Sixty One Only.	18264.00
						Total Rs. =	832508.86
				Add Miscellenious 1 %			8325.09
							840833.94
						Say Rs. =	840834

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
5	Bd- A-9 / 261	20.00	Bhp-Hr	Dewatering the excavated trenches and pools of water in the building trenches/ pipeline treanches, well works by using pumps and other devices including disposing off water to safe distance as directed by Engineer-in-Charge (including cost of machinery, labour, fuel),etc. complete. i)The contractor at his request may be allowed to start construction of masonry steining so as not to allow silting of well on one set of monsoon and while paying masonry, 25% amount shall be withheld and released only when excavation to the full depth is completed. ii) Dewatering : Total dewatering charges are to be proposed in tender as lumpsum amount 75% is payable on completion of excavation and 25% is payable after construction of well/ gallery. Out of 75% payment on completion of excavation breakup shall be as under 25% for last 1 Mtr. Depth. 20% for 2 M depth which just above last 1 M depth. 15% for 2 M depth which just above last 3 M depth 15% for the rest of depth from water table level. (NAGPUR REGION DSR 11-12 / I -14 P -30)	56.00	Rs. Fifty Six Only.	1120.00
6	Bd/F-3 P-298	0.53	Cu.mt.	Providing and laying in situ cement concrete of required grade of trap / granite/ quartzite / gneiss metal for R.C.C. work in foundations like raft, grillages, strip foundations and footings of R.C.C.columns and steel stanchions including bailing out water, plywood/steel formwork, compaction, curing and roughening the surface if special finish is to be provided, finishing uneven and honeycombed surface with C.M. 1:3 of sufficient minimum thickness to give smooth and even surface etc. complete. (Excluding reinforcement and structural steel, including cover block) The Cement Mortar 1:3 plaster is considered for rendering unevenand honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed) b) For C.C.M-25 Spec.No: Bd.F.3/Page No.298/I.S.456 (2000) (I -30 P - 6)	4696.00	Rs. Four Thousand Six Hundred Ninety Six Only.	2488.88

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
7	Bd/F-11 P-304	0.88	Cu.Mt.	Providing and casting in situ cement concrete of required grade of trap / granite / gneiss / quartzite metal for R.C.C. pardi 75 mm thick including steel centering, plywood /steel formwork, compaction, finishing uneven and honeycombed surface with C.M. 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening them if special finish is to be provided and curing etc.complete.(Excluding reinforcement, including cover block) The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only.(Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc.) (Wooden centering will not be allowed) b) For C.C.M-25 Spec.No.: Bd.F.11/Page No.304/I.S. 456 (2000) (I -45 (b) P-10)	8373.00	Rs. Eight Thousand Three Hundred Seventy Three Only.	7368.24
8	Bd-F- 17/ 306	0.16	M.T.	Providing and fixing in position reinforcement of various diameters for R.C.C. pile caps, footings, foundations, slabs, beams and columns, canopies, staircases, newels, chajjas, lintels, pardies, coping, fins, arches etc. as per detailed design and drawings and schedules including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required completed. b) For TMT steel bars (If TMT steel is to be used prior permission from S.E.should be taken) Spec.No.: Bd.F.17/Page No.306 (I -46 b) P - 10	57400.00	Rs. Fifty Seven Thousand Four Hundred Only.	9184.00
9	Bd/A-10 P-262	1.64	Cu.Mt.	Filling in plinth and floors with approved excavated materials in 15 cm. to 20 cm. layers including watering and compaction complete.(Spec. No. : Bd.A. 10/Page No. 262) (I -7 P - 2)	51.00	Rs. Fifty One Only.	83.64
10	Bd/A -11 /263	0.50	Cu.Mt.	Filling in plinth and floors with contractors approved material / murum / in 15cm. to 20cm. layers including watering and compaction complete. (Spec. No. : Bd.A. 11/Page No. 263)(I -8 P - 2)	542.00	Rs. Five Hundred Fourty Two Only.	271.00
11	47 BDW 16	1.43	Cu.mt.	Transportation of material obtained from debris of various sorts including necessary excavation/ loosening including loading, unloading and conveying and disposing as directed. For 5km (Spec.No.: As directed by Engineer- in-charge.) (I -473 P - 66)	267.00	Rs. Two Hundred Sixty Seven Only.	381.81
12	C.S.R. Road construction W.B.M. Sr. No. 37, RD-28 P. No. 229, 2011-12.	0.68	Cu.Mt.	Filling fresh garden soil/silt & manure in excavated area including lead up to a distance of 50mtrs.	42.00	Rs. Fourty Two Only.	28.56

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
13	C.S.R.I. No. 1, Page No. 2, Parks and Garden 2011-12	0.68	Cu.Mt.	GARDEN SOIL :- supplying on site garden soil, well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.)	330.00	Rs. Three Hundred Thirty Only.	224.40
14	C.S.R.I. No. 9, Page No. 3, Parks and Garden 2011-12	4.00	No.	Saplings of small and medium ornamental flowering plants, Thuja, Cupresus, Palms, Ornamental Ficus, Musanda etc.	50.00	Rs. Fifty Only.	200.00
15	(C.S.R.I. No 12, Page No 6, Parks & Garden 2011-12)	4.00	No.	Planting small and medium size ornamental/ Flowering plant :- Digging pit with size 0.6 m x 0.6m x 0.6m. removing and conveying unwanted staff to a required distance as directed. Providing and filling the pit with fresh garden soil and farm yard manure thoroughly well, leveling. Watering on previous night Planting one or two year old healthy plant saplings as per specification Maintenance the well established by watering, stirring, of soil and manure, replacing casualties. etc. complete.	227.00	Rs. Two Hundred Twenty Seven Only.	908.00
						Total Rs. =	23972.85
				Add Miscellenious including drip irrigation 1 %			239.73
							24212.58
						Say Rs. =	24213

ABSTRACT 4**EDGE WALL WITH PLANTATION BED**

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	Bd- A-1 /259	3.06	Cu.Mt.	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete. (Spec.No. : Bd.A.1/Page No.259) Lift upto 1.5 M (I -1A) i P -1	102.00	Rs. One Hundred Two Only.	312.12
				including dewatering			
2	Bd-A -12/ 264	0.60	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264 (I -10 P-2)	771.00	Rs. Seven Hundred seventy one Only.	462.60
3	Bd- E-1 / 287	0.24	Cu.Mt.	Providing and laying in situ, cement concrete M-15 of trap/ granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood/steel formwork, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I -24 P - 5)	3915.00	Rs.Three thousand nine hundred fifteen Only.	939.60

ABSTRACT 5
GRAVEL FILTER

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	Bd-A -12/ 264	0.23	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264 (I -10 P-2)	771.00	Rs. Seven Hundred seventy one Only.	177.33
2	Bd- E-1 / 287	0.15	Cu.Mt.	Providing and laying in situ, cement concrete M-15 of trap/ granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood/steel formwork, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I -24 P - 5)	3915.00	Rs.Three thousand nine hundred fifteen Only.	587.25
3	Bd/G-1 P - 313	0.31	Cu.Mt.	Providing 2nd class Burnt Brick masonry with conventional/I.S. type bricks in cement mortar 1:6 in foundations and plinth of inner walls/in plinth of external walls including bailing out water, striking joints on unexposed faces, racking out joints on exposed faces and watering complete. Spec.No.: Bd.G.1/Page No.313 (I -50 P-11)	3443.00	Rs. Three Thousand Four Hundred Forty Three Only	1067.33
4	Bd.E. 3/288	0.02	Cu.m.	Providing and casting in situ cement concrete M-15 of trap/ granite/quartzite/gneiss metal for coping to plinth or parapet, moulded or chamfered as per drawing or as directed including steel centering, plywood/steel formwork compacting, roughening them if special finish is to be provided, finishing uneven and honeycombed surface and curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 3/Page No. 288/I.S. 456 (2000) (I-26 P-5)	3988.00	Rs. Three thousand nine hundred and eighty eight only.	79.76

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
5	Bd- A-1 /259	1.15	Cu.Mt.	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete. (Spec.No. : Bd.A.1/Page No.259) Lift upto 1.5 M (I -1A) i P -1	102.00	Rs. One Hundred Two Only.	117.30
6	BDV-39 / 573	2.50	Rmt.	Providing and fixing 150 mm dia. Salt Glazed Stoneware pipe including fittings such as bends, tees, single junctions, double junctions, laying, jointing (excluding excavation and refilling the trenches) etc. (Cement: 2.24 kg per m) (I - 401 P-62)	260.00	Rs. Two hundred and sixty only	650.00
7	Bd/A-10 P-262	1.15	Cu.Mt.	Filling in plinth and floors with approved excavated materials in 15 cm. to 20 cm. layers including watering and compaction complete.(Spec. No. : Bd.A. 10/Page No. 262) (I -7 P - 2)	51.00	Rs. Fifty One Only.	58.65
						Total Rs. =	2737.62
				Add Miscellenious including providing and filling gravels 1 %			27.38
							2765.00
						Say Rs. =	2765

ABSTRACT 6
VERMICOMPOST PIT

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	Bd- A-1 /259	1.94	Cu.Mt.	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete. (Spec.No. : Bd.A.1/Page No.259) Lift upto 1.5 M (I -1A) i P -1	102.00	Rs. One Hundred Two Only.	197.88
2	Bd-A -12/ 264	2.45	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264 (I -10 P-2)	771.00	Rs. Seven Hundred Seventy One Only.	1888.95
3	Bd- E-1 / 287	1.60	Cu.Mt.	Providing and laying in situ, cement concrete M-15 of trap/ granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood/steel formwork, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I -24 P - 5)	3915.00	Rs.Three Thousand Nine Hundred Fifteen Only.	6264.00
4	Bd/G-1 P 313	2.17	Cu.Mt.	Providing Fly ash lime brick masonry (bricks conforming to I.S.12894 : 1990 of size 19 cm x 9 cm x 9 cm) in cement mortar 1:6 in foundations and plinth of inner walls / in plinth of external walls including bailing out water, striking joints on unexposed faces, racking out joints on exposed faces and watering complete. Spec.No.: Bd.G.1/Page No.313 (I -49 P - 11)	3574.00	Rs.Three Thousand Five Hundred Seventy Four Only.	7755.58
5	Bd/G-7 P 316	1.58	Sq.Mt.	Providing Fly ash lime Brick masonry (Bricks conforming to I.S. 12894:1990 and of size19 cm x 9 cm x 9 cm) bricks in cement mortar 1:4 in half brick thick wall including mild steel longitudinal reinforcement of 2 bars of 6 mm.diameter/2 hoop iron strips 25 mm x 1.6 mm placed at every third course, properly bent and bounded at ends scaffolding, racking out joints and watering complete. Spec.No.: Bd.G.7/Page No.316 (I -53 P - 11)	578.00	Rs. Five Hundred Seventy Eight Only.	913.24

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
6	Bd/V-36 P-571	0.90	Rmt.	Providing and fixing 100 mm. Diameter cast iron centrifuguly spurn soil/vent/ waste pipes with necessary fixtures and fitting such as bends, tees, single junction, double junction, slotted vent offsets on walls or in the ground including filling joints with lead with read lead oil paint coat and two coats of anticorrosive paint including fixing the pipe on walls by means of nails driven through lugs in wooden holder/battens and supported on ground floor by C.C. 1:2:4 of 30 cm. x 30 cm. size blocks complete. Spec. No.: BD.V.36 Page No. 571. (I -403 P - 62)	913.00	Rs. Nine Hundred Thirteen Only.	821.70
7	Bd/C-2 P-275	0.24	M.T.	Providing and fabricating structural steel work in rolled sections like joists, channels, angles, tees etc. as per detailed design and drawings or as directed including cutting, fabricating, hoisting, erecting, fixing in position making riveted / bolted / welded connections without connecting plates, braces etc. and including one coat of anticorrosive paint and over it two coats of oil painting of approved quality and shade complete.(Spec. No. : Bd.C. 2/Page No. 275) (I -13 P - 3)	62575.00	Rs. Sixty Two Thousand Five Hundred Seventy Five Only.	15018.00
8	Bd/R-8 P-454	17.64	Sq.Mt.	Providing and fixing 6 mm thick Asbestos Cement Semi Corrugated/ Trafford sheet roofing including galvanised iron J and L hook bolts, galvanised iron and bituminous washers,galvanised iron clamps, bolts and nuts and scaffolding etc. complete. Spec.No.: Bd.R.8/Page No.454 (I -227 P-35)	398.00	Rs. Three Hundred Ninety Eight Only.	7020.72
						Total Rs. =	39880.07
				Add Miscellenious 1 %			398.80
							40278.87
						Say Rs. =	40279

ABSTRACT 7
TOILET BLOCK (LARGE)

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	Bd- A-1 /259	144.97	Cu.Mt.	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete. (Spec.No. : Bd.A.1/Page No.259) Lift upto 1.5 M (I -1A) i P -1	107.00	Rs. One Hundred Two Only.	15511.79
				including dewatering			
2	Bd- A-1 /259	22.78	Cu.Mt.	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete. (Spec.No. : Bd.A.1/Page No.259) ii. Lift above 1.5 m to 3.00 m.Depth (I -A) ii P- 1	111.00	Rs. One Hundred Eleven Only.	2528.58
3	Bd- A-2 /259	22.78	Cu.Mt.	Excavation for foundation in hard murum including removing the excavated material upto distance of 50 meters beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etc. complete.(Spec. No. : Bd.A. 2/Page No. 259)ii. Lift above 1.5 m to 3.00 m.Depth (I - 2A)ii P-1	124.00	Rs. One Hundred Twenty Four Only.	2824.72
4	Bd-A -14/ 264	17.27	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264 (I -10 P-2)	771.00	Rs. Seven Hundred Seventy One Only.	13315.17

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
5	Bd- E-1 / 287	11.26	Cu.Mt.	Providing and laying in situ, cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood/steel formwork, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I-24 P - 5)	3915.00	Rs.Three Thousand Nine Hundred Fifteen Only.	44082.90
6	Bd/G-1 P - 313	39.37	Cu.Mt.	Providing 2nd class Burnt Brick masonry with conventional/I.S. type bricks in cement mortar 1:6 in foundations and plinth of inner walls/in plinth of external walls including bailing out water, striking joints on unexposed faces, racking out joints on exposed faces and watering complete. Spec.No.: Bd.G.1/Page No.313 (I-50 P 11)	3443.00	Rs. Three Thousand Four Hundred Forty Three Only	135550.91
7	Bd/A-10 P-262	16.24	Cu.Mt.	Filling in plinth and floors with approved excavated materials in 15 cm. to 20 cm. layers including watering and compaction complete.(Spec. No. : Bd.A. 10/Page No. 262) (I-7 P - 2)	51.00	Rs. Fifty One Only.	828.24
8	Bd- E -1 /287	2.54	Cu.Mt.	Providing and laying in situ, cement concrete M-10/(1:3:6) of trap/granite/quartzite/gneiss metal for foundation and bedding including plywood/steel formwork bailing out water, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I-23 P - 4)	3365.00	Rs. Three Thousand Three Hundred Sixty Five Only.	8547.10
9	Bd/A-14 P-264	16.98	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264) (I-10 P-2)	771.00	Rs. Seven Hundred Seventy One Only.	13091.58

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
10	Bd/E -1 P-287	7.38	Cu.Mt.	Providing and laying in situ, cement concrete M-10/(1:3:6) of trap/granite/quartzite/gneiss metal for foundation and bedding including plywood/steel formwork bailing out water, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I-23 P - 4)	3365.00	Rs. Three Thousand Three Hundred Sixty Five Only.	24833.70
11	Bd/G-5 P - 315	33.11	Cu.Mt.	Providing second class burnt brick masonry with conventional / I.S.Type bricks in cement mortar 1:6 in superstructure as backing in composite masonry including scaffolding , racking out joints and watering etc. Complete. Spec.No.: Bd.G.5/Page No.315 (I- 52 P- 11)	3496.00	Rs. Three Thousand Four Hundred Ninety Six Only.	115752.56
12	Bd/G-7 P-316	81.25	Sq.Mt.	Providing second class Burnt Brick masonry with conventional / I.S. type bricks in cement mortar 1:4 in half brick thick wall including mild steel longitudinal reinforcement of 2 bars of 6 mm. diameter/2 hoop iron strips 25 mm x 1.6 mm placed at every third course, properly bent and bounded at ends scaffolding, racking out joints and watering complete. Spec.No.: Bd.G.7/Page No.316 (I- 54 P - 11)	557.00	Rs. Five Hundred Fifty Seven Only.	45256.25
13	Bd/ F-6 P-300	1.63	Cu.Mt.	Providing and casting in situ cement concrete of required grade of trap / granite /quartzite /gneiss metal for R.C.C. beams and lintels as per detailed design and drawings or as directed,including steel centering, plywood/steel formwork steel props, compaction, finishing uneven and honeycombed surface with C.M.1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish is to be provided and curing etc. complete. Including use of plastisizer wherever necessary as directed by Engineer-In-charge (Excluding reinforcement, including cover block). The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed) b) For C.C.M-25 Spec.No.: Bd.F.6/Page No.300/I.S. 456 (2000) (I - 33b) P - 7	5982.00	Rs. Five Thousand Nine Hundred Eighty Two Only.	9750.66

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
14	Bd/ F-9 P-303	0.96	Cu.Mt.	Providing and casting in situ cement concrete of required grade of trap / quartzite / granite/ gneiss metal for R.C.C. chajja as per detailed design and drawings including steel centering, plywood/steel formwork, steel props, compaction finishing uneven and honeycombed surface with C.M. 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening the surface if special finish is to be provided and curing etc.complete.(Excluding reinforcement, including cover block) The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only.Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed) b) For C.C.M-25 Spec.No.: Bd.F.9/Page No.303/I.S. 456 (2000) (I - 34b) P - 7	6323.00	Rs. Six Thousand Three Hundred Twenty Three Only.	6070.08
15	Bd/ F-6 P-300	5.42	Cu.Mt.	Providing and casting in situ cement concrete of required grade of trap / granite /quartzite /gneiss metal for R.C.C. beams and lintels as per detailed design and drawings or as directed,including steel centering, plywood/steel formwork steel props, compaction, finishing uneven and honeycombed surface with C.M.1:3 of sufficient minimum thickness to give a smooth and even surface or roughening if special finish is to be provided and curing etc. complete. Including use of plastisizer wherever necessary as directed by Engineer-In-charge (Excluding reinforcement, including cover block). The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed) b) For C.C.M-25 Spec.No.: Bd.F.6/Page No.300/I.S. 456 (2000) (I - 33 b) P - 7	5982.00	Rs. Five Thousand Nine Hundred Eighty Two Only.	32422.44

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
16	Bd/ F-8 P-302	18.10	Cu.Mt.	Providing and casting in situ cement concrete of required grade of trap / granite /quartzite /gneiss metal for R.C.C slabs and landings as per detailed design and drawings including steel centering, plywood /steel formwork, steel props, compaction, finishing uneven and honeycombed surface with C.M. 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening the surface if special finish is to be and painting to exposed surface and curing etc.completed. (Excluding reinforcement, including cover block) The Cement Mortar 1:3 plaster is considered for rendering uneven and honey combed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed) b) For C.C.M-25 Spec.No.: Bd.F.8/Page No.302/I.S. 456 (2000) (I-39b) P- 9	6586.00	Rs. Six Thousand Eight Hundred Eighty Six Only.	119206.60
17	Bd-F- 17/ 306	3.00	M.T.	Providing and fixing in position reinforcement of various diameters for R.C.C. pile caps, footings, foundations, slabs, beams and columns, canopies, staircases, newels, chajjas, lintels, pardies, coping, fins, arches etc. as per detailed design and drawings and schedules including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required completed. b) For TMT steel bars (If TMT steel is to be used prior permission from S.E.should be taken) Spec.No.: Bd.F.17/Page No.306 (I-46 b) P - 10	57400.00	Rs. Fifty Seven Thousand Four Hundred Only.	172200.00
18		69.04	Sq.Mt.	Providing and Laying vetrified tiles of approved make and quality of required size for flooring in required position laid on bed of C.M.1:4 including cement float, filling joint with white / colour cement slurry, cleaning, curing, complete. a) 600mm x 600mm. size. Spec.No.: As directed by Engineer- in-charge.(I-157 (a) P 27	1,249.00	Rs. One Thousand Two Hundred Fourty Nine Only.	86230.96
19		260.12	Sq.Mt.	Providing and fixing vetrified tiles of approved make and quality of required size for dado and skirting in required position with ready made adhesive mortar of approved quality in required position after making the wall portion in level in plaster of C.M. 1:4 including joint filling with white/colour cement slurry cleaning curing complete. a) 600 mm x 600 mm. size. Spec.No.: As directed by Engineer- in-charge. (I - 158 a) P - 27	1,294.00	Rs. One Thousand Two Hundred Ninety Four Only.	336595.28

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
20		11.00	No.	Providing and fixing 1st class "Orissa Type" Colour Glazed earthenware 600 x 400 mm. W.C. PAN including 'P' or 'S' trap, UPVC soil and vent pipe upto the out side face of wall, including 100 mm dia. UPVC plug bend, 10 litre UPVC low level flushing cistern with fittings, inlet pipe with stop cock, brackets, 32 mm dia. UPVC flush pipe with fittings and clamps, 20 mm dia. UPVC over flow pipe with mosquito proof coupling, cutting and making good to the walls and floors, testing etc. complete. (Prior approval of sample and brand by Ex.Engineer is necessary before use.) Spec.No.: As directed by Engineer- in-charge. (I - 360 P - 56)	3,800.00	Rs. Three Thousand Eight Hundred Only.	41800.00
21	Bd/V-23 P-562	10.00	No.	Providing and fixing white glazed earthenware full stall type Urinal without cistern, stop tap with inlet pipes and 32 mm dia. UPVC flush pipe, with fitting and flushing arrangement including UPVC soil pipe, UPVC trap and soil pipe connection upto the outside face of the wall, making good to damaged surface testing etc. complete. (Prior approval of sample and brand by Ex.Engineer is necessary before use.) Spec.No.: Bd/V-23 Page No.562 (I - 366 P - 57)	4,671.00	Rs. Four Thousand Six Hundred Seventy One Only.	46710.00
22	Bd/V-30 P-565	18.00	No.	Providing and fixing white glazed earthenware Wash Hand Basin of size 45 cm x 30 cm including cold water pillar tap, brackets, rubber plugs and brass chain, stop tap, chromium plated bottle trap and necessary pipe connection including UPVC waste pipe and trap up to the out side face of the wall, making good the damaged surface, testing etc. complete. (Prior approval of sample and brand by Ex.Engineer is necessary before use.)Spec.No.: Bd.V.30/Page No.565 (I - 374 P - 58)	1,984.00	Rs. One Thousand Nine Hundred Eighty Four Only.	35712.00
23		5.55	Sq.Mt.	Providing and fixing in position Partition of polished Kaddappa / Marble / Granite stone of required thickness ,including making groove in wall / concrete surface filling joints with slurry, curing, polishing, rounding edges, as required cleaning etc. complete. a) Kadappa Partition 25 mm to 30 mm thick Spec.No.: As directed by Engineer- in-charge. (I -137 a P-24)	608.00	Rs. Six Hundred Eight Only.	3374.40
24	Bd/M-31 P-392	24.68	Sq.Mt.	a) Providing sills of white marble Makrana slabs or equivalent 15 mm to 18 mm thick of approved quality vein and colour with machine polished surface on a bed of Cement Mortar 1:4 including neat cement float filling joints with neat cement slurry to match the colour of the slabs curing, polishing and rounding edges, cleaning etc. complete. Spec.No.: Bd.M.31/Page No.392 (I - 150 a P - 26)	2,565.00	Rs. Two Thousand Five Hundred Sixty Five Only.	63304.20

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
25	Bd/F-20 P-307	10.08	Sq.Mt.	Providing and fixing in position after hoisting, precast 1:2 cement mortar reinforced jali 80 mm thick of approved design on both sides fixing in cement mortar 1:3 and curing complete.(with 3 mm diameter mild steel bar reinforcement) Spec.No.: Bd.F.20 / Page No.307 (I - 48 P- 11)	524.00	Rs Five Hundred Twenty Four Only.	5281.92
26	Bd/ L-7 P -369	189.09	Sq.Mt.	Providing sand faced plaster for external portion in cement mortar using Kharsalia / Kasaba or similar type of sand, in all positions including base coat of 15 mm. Thick in C.M. 1:4 using water proofing compound at 1 kg per cement bag, curing the same for not less than 3 days and keeping the surface of the base coat rough to receive the sand faced treatment 6 to 8 mm thick in C.M. 1:4 finishing the surface by taking out grains, making grooves and curing for fourteen days scaffolding etc. complete. Spec.No.: Bd.L.7/Page NO.369 (I - 95 P - 19)	280.00	Rs. Two Hundred Eighty Only.	52945.20
27	Bd/ L-4 P -368 & Bd/ L -10 P- 370	340.70	Sq.Mt.	Providing internal cement plaster 20mm thick in a single coat in cement mortar 1:4 without neeru finish to concrete, brick surfaces in all positions including scaffolding and curing. Providing groove at joint of B.B.Masonry and concrete members complete. Spec.No.: Bd/L-4 Page No.368. Providing neeru finish to plastered surfaces in all positions including scaffolding and curing etc. complete. Spec.No.: Bd/L.10 Page No. 370 (I - 92 P -18 + I - 98 P - 19)	211.00	Rs. Two Hundred Eleven Only.	71887.70
28	Bd/M-22 P-390	8.64	Sq.Mt.	Providing and laying polished Kota Stone slabs 20mm to 25 mm thick for treads and risers of steps and staircases, with rounded nosing and groove at edge for the treads, on a bed of C.M. 1:4 including cement float filling joints with neat cement slurry, curing, polishing and cleaning complete. Spec.No.: Bd/M-22 Page No.390 (I - 142 P - 25)	850.00	Rs. Eight Hundred Fifty Only.	7344.00
29	Bd/T-30 P-496	8.56	Sq.Mt.	Providing and fixing double leaf door,with country teak wood shutter and panels as per detailed drawing including iron oxidised fixtures and fastening stoppers and finishing with one coat of primer complete. (Excluding door frame) (Sample to be got approved from Ex. Engineer before use) b) panels of 12 mm thick, exterior grade prelaminate particle board laminated on both side. Spec.No.: Bd.T.30/Page No.496 (I - 255(1b) P - 38)	3,385.00	Rs. Three Thousand Three Hundred Eighty Five Only.	28975.60

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
30		17.66	Sq.Mt.	Providing & fixing approved make solid Panel of 29mm thick PVC single leaf door shutter of approved colour and design made out of rigid PVC hollow section shutter frame in configuration of A section of size 50mm x 29mm as vertical styles, top & bottom rails Machine cut and panel in fill of single panel multi chambers hollow plastic section of size 25mm x 750mm. with solid polymetric 'L' corner reinforcement holding brackets and solid polymetric reinforcement fillers for holding hinges, aldrops, latch, tower bolts, etc. remaking damaged surface etc. compete. Specification - As directed by Engineer Incharge. (I - 279 P - 42)	2,540.00	Rs. Two Thousand Five Hundred Fourty Only.	44856.40
31	Bd/V-32 P-567	24.00	No.	Providing and fixing 10cm C.I.Nahani Trap (long arm) including symet grating, bend, connecting piece of C.I.pipe upto the outside face of the wall, making good the damaged surface, testing etc. complete. (Prior approval of sample and brand by Ex.Engineer is necessary before use.) Spec.No.: Bd.V.32/Page No.567 (I - 384 P - 60)	755.00	Rs. Seven Hundred Fifty Five Only.	18120.00
32	Bd/V-36 P-571	54.00	Rmt.	Providing and fixing asbestos cement soil / vent / waste pipe of required diameter with necessary fixtures and fittings such as bends, tees, single junction, double junction, slotted vent, offsets on walls or in the ground including filling joints with cement mortar 1:2, painting with red lead oil base coat and two coats of anticorrosive paint including fixing pipes on walls by means of nails, driven through wooden lugs in wooden holder battens, fixed with concrete block and supported on ground floor by C.C. 1:2:4, block of 30 x 30 cm size, testing etc. complete. (Prior approval of sample and brand by Ex.Engineer is necessary before use.) (b) 100 mm dia. Pipe Spec.No.: Bd.V.36/Page No.571 (I - 389 b P - 61)	236.00	Rs. Two Hundred Thirty Six Only.	12744.00
33	Bd/V-38 P-572	10.00	No.	Providing and fixing 15 cm x 10 cm salt glazed stoneware gully trap in cement concrete 1:4:8 outside the building including symet grating in the sink, connecting glazed stoneware pipe, brick masonry chamber with R.C.C. lid and Symet grating for the gully trap, testing etc. complete. (Prior approval of sample and brand by Ex.Engineer is necessary before use.) Spec.No.: Bd.V.38/Page No.572 (I - 387 P - 60)	750.00	Rs. Seven Hundred Fifty Only.	7500.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
34		10.00	Nos.	Providing and constructing B.B.Masonry chamber with 100 mm thick 1:3:6 P.C.C. for bed on 100 mm thick oversize soiling with 80 mm metal including excavation, 23 cm thick B.B.Masonry in c.m.1:6. Inside plaster in c.m.1:5 20 mm thick and outside plaster B) 900 x 600 x 450 mm (I - 677 (B) P - 106)	3,044.00	Rs. Three Thousand Forty Four Only.	30440.00
35		15.00	Rmt.	Providing and fixing 100 mm dia. Salt Glazed Stoneware pipe including fittings such as bends, tees, single junctions, double junctions, laying, jointing (excluding excavation and refilling the trenches) etc. (Cement: 1.87 kg per m) (I - 400 P - 62)	183.00	Rs. One Hundred Eighty Three Only.	2745.00
36		22.50	Rmt.	Providing and fixing 150 mm dia. Salt Glazed Stoneware pipe including fittings such as bends, tees, single junctions, double junctions, laying, jointing (excluding excavation and refilling the trenches) etc. (Cement: 2.24 kg per m) (I - 401 P - 62)	260.00	Rs. Two Hundred Sixty Only.	5850.00
37		5000.00	Litres	Providing, hoisting and fixing in position sintex or equivalent high density polyethylene UV stabilized conforming to I.S.12701, water storage tank with necessary connections, testing etc. complete. (Prior approval of sample by Ex. Engineer is necessary before use.) Spec.No.: As directed by Engineer-in-charge. (I - 339 P - 52).	6.50	Rs. Six Paise Fifty Only.	32500.00
38	Bd/V-5 P-551	20.00	Rmt.	Providing and laying G.I. Pipe in trenches 40mm diameter heavy type having 48.3 mm outer dia and 4.545 kg. per meter weight and having embossed at every metre as ISI mark and name of the manufacturer with screwed sockets, joints, and necessary galvanised iron fittings such as backnuts, elbows, bends, tees reducers, enlargers, plugs etc. including providing and applying two coats of oil paint with one coat of primer and necessary excavation and backfilling complete including removing existing pipe if necessary and conveying and stacking in P.W.D. chowky or as directed. (v) 40 mm dia. Spec.No.: Bd.V.5/Page No.551 (I - 341 (v) P - 53)	419.00	Rs. Four Hundred Nineteen Only.	8380.00
39	Bd/V-5 P-551	20.00	Rmt.	Providing and laying in trenches medium grade (type) galvanised iron pipe having embossed ISI Mark on it, of required diameter with screwed, sockets, joints, necessary galvanised iron fittings such as sockets, back nuts, elbows, bends, tees, reducers, enlargers, plugs, clamps etc. including necessary excavation, back filling, fixing with clamps, testing etc. complete. (Prior approval of sample and brand by Ex. Engineer is necessary before use.) (vi) 50 mm dia. Spec.No.: Bd.V.5/Page No.551 (I - 341 (vi) P - 53)	545.00	Rs. Five Hundred Forty Five Only.	10900.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
40	Bd/V-5 P-551	125.00	Rmt.	Providing and laying in trenches medium grade (type) galvanised iron pipe having embossed ISI Mark on it, of required diameter with screwed, sockets, joints, necessary galvanised iron fittings such as sockets, back nuts, elbows, bends, tees, reducers, enlargers, plugs, clamps etc. including necessary excavation, back filling, fixing with clamps, testing etc. complete. (Prior approval of sample and brand by Ex. Engineer is necessary before use.) (iv) 32 mm dia. Spec.No.: Bd.V.5/Page No.551 (I - 341 (iv) P - 53)	349.00	Rs. Three Hundred Fourty Nine Only.	43625.00
41	Bd/V-5 P-551	167.00	Rmt.	Providing and fixing G.I. Pipes 25 mm diameter heavy type having 33.7 mm outer dia and 3.058 kg. per meter weight and having embossed at every metre as ISI mark and name of the manufacturer to walls ceiling, floors etc. with screwed sockets, backnuts, elbows, bends, tees reducers, enlargers, plugs, clamps etc. including necessary drilling in holes in walls/ slabs etc. and remaking good the demolished portion to restore the same in original condition neatly and applying primer and two coats of oil painting including necessary scaffolding including removing the existing pipe, if necessary and conveying and stacking the same in P.W.D. chowky or as directed. etc. complete. Spec.No.: Bd.V.5/Page No.551 (I - 341 (iii) P - 53)	320.00	Rs. Three Hundred Twenty Only.	53440.00
42	Bd/V-8 P-554	39.00	No	Providing and fixing 25 mm dia. Screw down bib/stop tap of brass including necessary sockets, union nut, testing etc. complete.(Prior approval of sample and brand by Ex. Engineer is necessary before use.) Spec.No.: Bd.V.8/Page No.554 (I - 347 P - 54)	393.00	Rs. Three Hundred Ninety Three Only.	15327.00
43	Bd/V-9 P-555	1.00	No	Providing and fixing screw down required dia. wheeled stop tap of brass including necessary sockets, union nut, testing etc. complete. (Prior approval of sample and brand by Ex.Engineer is necessary before use.) d) 40 mm dia Spec.No.: Bd.V.9/Page No.555 (I - 350 d P - 54)	645.00	Rs. Six Hundred Fourty Five Only.	645.00
44	Bd/V-9 P-555	1.00	No	Providing and fixing screw down required dia. wheeled stop tap of brass including necessary sockets, union nut, testing etc. complete. (Prior approval of sample and brand by Ex.Engineer is necessary before use.) Spec.No.: Bd.V.9/Page No.555 (I - 350 (e) P - 54)	1,028.00	Rs. One Thousand Twenty Eight Only.	1028.00
45	Bd/V-9 P-555	39.00	No	Providing and fixing screw down required dia. wheeled stop tap of brass including necessary sockets, union nut, testing etc. complete. (Prior approval of sample and brand by Ex.Engineer is necessary before use.) Spec.No.: Bd.V.9/Page No.555 (I - 350 (c) P - 54)	552.00	Rs. Five Hundred Fifty Two Only.	21528.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
46		10.00	No.	Providing and fixing 450 mm x 550 mm size superior type mirror with 16 mm dia. Nickel plated towel rod etc. complete. (Prior approval of sample and brand by Ex.Engineer is necessary before use.) Spec.No.: As directed by Engineer- in-charge (I - 397 P - 62)	461.00	Rs. Four Hundred Sixty One Only.	4610.00
47	As per wording of item	35.00	Points	Point wiring for light / fan bell with I.S.I. mark 2-1 sq.mt. copper PVC insulated wire 1.1 K.V. grade in P.V.C. trunking (P.V.C. casing N - capping) with double locking arrangement with grooves, trunking of not below 12.5 mm in height and 20 mm in width and the thickness not below 1.2 mm as per I.S. 14927 (part- 1) of 2001 and with accessories of PVC / Virgin polypropylene not below 1.8 mm in thickness duly embossed the name of the manufacturer on casing, capping and on accessories duly sealed at joints and erected the trunking (casing N- capping) on wall/ ceiling with necessary nettle folded G.I. screws etc fixed at an interval of not more than 500 mm with Rawl Plug etc. and I.S.I. mark ceilig rose/ batten holder / slanting holder erected on polished double T.W. folded orscrewed board with top of teak wood or 3 mm thick hylam sheet / 4 mm plywood pasted with sunmica thickness not less than 1.5 mm with top of teakwood or 3 mm with round headed brass screws and cup washers complete. (Market Rate).	850.00	Rs. Eight Hundred Fifty Only.	29750.00
48	As per wording of item	12.00	No	Providing and fixing tube lights of 40 watts with prior approval of Engineer-in-Charge. (Market Rate).	500.00	Rs. Five Hundred Only.	6000.00
49	As per wording of item	11.00	No	Providing and fixing bulbs of 100 watts with prior approval of Engineer-in-Charge. (Market Rate).	24.00	Rs. Twenty Four Only.	264.00
50	As per wording of item	8.00	No	Providing and fixing Exhaust fan with prior approval of Engineer-in-Charge. (Market Rate).	1,100.00	Rs. One Thousand One Hundred Only.	8800.00
51	Bd/P-2 P- 412	408.84	Sq.Mt.	Providing & applying colour wash in three coats to old/new plastered or masonry surfaces and asbestos cement sheets including scaffolding and preparing the surcface to receive the paint by brushing and brooming down and applying putty etc. complete. Spec.No.: Bd.P.2/Page No.412 (I -201 P- 32)	11.00	Rs.Eleven Only.	4497.24
52	Bd/P-3 P- 412	226.91	Sq.Mt.	Providing & applying colour wash in three coats to old/new plastered or masonry surfaces and asbestos cement sheets including scaffolding and preparing the surcface to receive the paint by brushing and brooming down and applying putty etc. complete.Spec.No.: Bd.P.3/Page No.412 (I -205 P-32)	11.00	Rs.Eleven Only.	2496.01

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
53		3.00	M.T.	Providing fusion bonded epoxy coating to reinforcement bars as per IS 13 620 /1993 specification for a thickness of 175 (+50) microns including extra cost on account of careful handling, extra cost on account of using PVC coated binding wire instead of G.I. wire, extra cost on account of touch-up material supplied by coating agency and repair work extra cost on account of transportation to and from steel yard at Kalamboli to plant at Daman and Plant at Daman to work site by trailer, loading, unloading, including all taxed (Central and Local), etc. complete. (b) Average rates (for estimation only) 1 - For 8 mm to 20 mm dia(I-15 P-22)Mumbai DSR 11-12	6,099.15	Rs.Six Thousand Ninety Nine & Fifteen Paise Only.	18297.45
54	Bd/V-36 P-571	66.00	Rmt.	Providing and fixing 100 mm. Diameter cast iron centrifugally spun soil/ vent/ waste pipes with necessary fixtures and fitting such as bends, tees, single junction, double junction, slotted vent offsets on walls or in the ground including filling joints with lead with red lead oil paint coat and two coats of anticorrosive paint including fixing the pipe on walls by means of nails driven through lugs in wooden holder/battens and supported on ground floor by C.C. 1:2:4 of 30 cm. x 30 cm. size blocks complete. Spec. No.: BD.V.36 Page No. 571. (I - 403 P- 62)	913.00	Rs. Nine Hundred Thirteen Only.	60258.00
55	Bd/V-35 P-571	66.00	Rmt.	Providing and fixing 75 mm. Diameter cast iron centrifugally spun soil/ vent/ waste pipes with necessary fixtures and fitting such as bends, tees, single junction, double junction, slotted vent offsets on walls or in the ground including excavation, laying, refilling the trench and painting the exposed pipe with oil paint complete. Spec. No.: BD.V.35 Page No. 571. (I - 404 P- 62)	761.00	Rs. Seven Hundred Sixty One Only.	50226.00
						Total Rs. =	2036761.64
				Add Miscellaneous 1 %			20367.62
							2057129.26
						Say Rs. =	2057129

ABSTRACT 8
COIR BUND

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	Bd- A-2 /259	11.81	Cu.Mt.	Excavation for foundation in hard murum including removing the excavated material upto distance of 50 meters beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etc. complete.(Spec. No. : Bd.A. 2/Page No. 259)ii. Lift above 1.5 m to 3.00 m.Depth (I - 2A)ii P-1	130.00	Rs. One Hundred Twenty Four Only.	1535.30
				including dewatering			
2	Bd-A -12/ 264	0.58	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264 (I -10 P-2)	771.00	Rs. Seven Hundred Seventy One Only.	443.33
3	Bd- E-1 / 287	0.33	Cu.Mt.	Providing and laying in situ, cement concrete M-15 of trap/ granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood/steel formwork, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I -24 P - 5)	3915.00	Rs.Three Thousand Nine Hundred Fifteen Only.	1291.95
4		4.20	Sq.Mt	Providing shoring and strutting to excavated work for foundation pits, trenches etc wherever necessary & as directed for supporting earth from sliding with 30 cm wide of 25 mm thick jungle wood planks on all sides of frame 8 cm x 10 cm thick jungle wood runners at 1.50 m C/C horizontally and vertically and removing the same as directed. (Market Rate)	100.00	Rs. One Hundred Only	420.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
5	Bd/H-1 P - 329	0.94	Cu.Mt.	Providing uncoursed rubble masonry of trap/granite/quartzite/gneiss stones in cement mortar 1:6 in foundations and plinth of inner walls / in plinth of external walls including bailing out water, striking joints on unexposed faces and watering complete. Spec.No.: Bd.H.1/Page No.329 (I -60 P 12)	1572.00	Rs. One Thousand Five Hundred Seventy Two Only	1477.68
7		2.12	Sq.Mt	Providing and fixing coir mat	50.00	Rs Fifty Only	106.00
8	C.S.R.I. No. 1, Page No. 2, Parks and Garden2011-12	0.11	Cu.Mt.	GARDEN SOIL :- supplying on site garden soil, well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.)	330.00	Rs. Three Hundred Thirty Only.	36.30
9	C.S.R.I. No. 9, Page No. 3, Parks and Garden 2011-12	5.00	No.	Saplings of small and medium ornamental flowering plants, Thuja, Cupresus, Palms, Ornamental Ficus, Musanda etc.	50.00	Rs. Fifty Only.	250.00
						Total Rs. =	5560.56
				Add Miscellenious 1 %			55.61
							5616.16
						Say Rs. =	5616

ABSTARCT 9
CHAIN LINK FENCING

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
	Misc (c), 426 (2)	1.00	Rmt.	Providing and erecting including fabricating 0.90 Mt.high decorative type chain link fencing with panelling made out of M.S. angle 50 mm x 50 mm x 6 mm for frame work with M.S. flat 40 mm x 5 mm welded for fastening chain link with frame angle and chain link mesh of 10 gauge & having hole size 65 mm x 65 mm panelling supported on post made of M.S. flat 50 mm x 6 mm on either side of pannel including fixing posts in C.C. 1:4:8 block and fastening the chain link, painting the exposed structural steel work with oil paint (M.S.flat post to be 1.05 Mtr. in height above ground level), including constructing BB masonry 23 cm thick 0.50 m. in ht. (0.20 m below G.L. and 0.30 m. above G.L.) including cement plaster in C.M.1:5 and colour washing etc. complete.	1522.00	one thousand five hundred twenty two only	1522.00
						Total Rs. =	1522.00
						Say Rs. =	1522

ABSTRACT 10

MONITORING ROOM

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	Bd- A-1 /259	14.75	Cu.Mt.	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete. (Spec.No. : Bd.A.1/Page No.259) Lift upto 1.5 M (I -1A) i P -1	107.00	Rs. One Hundred Two Only.	1578.25
				including dewatering			
2	Bd-A -12/ 264	2.55	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264 (I -10 P-2)	771.00	Rs. Seven Hundred Seventy One Only.	1966.05
3	Bd- E-1 / 287	1.67	Cu.Mt.	Providing and laying in situ, cement concrete M-15 of trap/ granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood/steel formwork, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I -24 P - 5)	3915.00	Rs.Three Thousand Nine Hundred Fifteen Only.	6538.05
4	Bd/G-1 P 313	5.46	Cu.Mt.	Providing 2nd class Burnt brick masonry with conventional / I.S. type bricks incement mortar 1:6 in foundation and plinth of inner walls / in plinth of external walls including bailing out water, striking joints on unexposed faces, racking out joints on exposed faces and watering complete. Spec.No.: Bd.G.1/Page No.313 (I -50 P - 11)	3443.00	Rs.Three Thousand Four Hundred Forty Three Only.	18798.78
5	Bd/G-5 P - 315	5.35	Cu.Mt.	Providing second class burnt brick masonry with conventional / I.S.Type bricks in cement mortar 1:6 in superstructure as backing in composite masonry including scaffolding , racking out joints and watering etc. Complete. Spec.No.: Bd.G.5/Page No.315 (I - 52 P- 11)	3496.00	Rs. Three Thousand Four Hundred Ninety Six Only.	18703.60

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
6	Bd/V-36 P-571	0.90	Rmt.	Providing and fixing 100 mm. Diameter cast iron centrifugally spun soil/vent/ waste pipes with necessary fixtures and fitting such as bends, tees, single junction, double junction, slotted vent offsets on walls or in the ground including filling joints with lead with red lead oil paint coat and two coats of anticorrosive paint including fixing the pipe on walls by means of nails driven through lugs in wooden holder/battens and supported on ground floor by C.C. 1:2:4 of 30 cm. x 30 cm. size blocks complete. Spec. No.: BD.V.36 Page No. 571. (I -403 P - 62)	913.00	Rs. Nine Hundred Thirteen Only.	821.70
7	Bd/C-2 P-275	1.04	M.T.	Providing and fabricating structural steel work in rolled sections like joists, channels, angles, tees etc. as per detailed design and drawings or as directed including cutting, fabricating, hoisting, erecting, fixing in position making riveted / bolted / welded connections without connecting plates, braces etc. and including one coat of anticorrosive paint and over it two coats of oil painting of approved quality and shade complete.(Spec. No. : Bd.C. 2/Page No. 275) (I -13 P - 3)	62575.00	Rs. Sixty Two Thousand Five Hundred Seventy Five Only.	65078.00
8	Bd/R-2 P-450	14.85	Sq.Mt.	Providing and fixing Mangalore tiled roofing with class "AA" tiles including securing the last course of tiles near the eaves with steel flat 40 mm x 3 mm and 1.22 mm wire, fixing country teak wood sloping battens of 25 mm x 12 mm, teak wood horizontal battens of 50 mm x 25 mm over the sloping battens, all iron works and coal tarring the battens complete. (excluding ridge and hip tiles) Spec.No.: Bd.R.2/Page No. 450 (I- 247 P - 38)	356.00	Rs. Three Hundred Fifty Six Only.	5286.60
9	Bd/R-3 P-450	3.60	Rmt.	Providing and fixing Mangalore tile ridge and hip tiles of class "AA" including scaffolding if necessary, pointing with coloured cement mortar and curing complete. Spec.No.: Bd.R.3/Page No. 450 (I- 248 P - 38)	99.00	Rs. Ninety Nine Only.	356.40
10	Bd/R-7 P-369	33.00	Sq.Mt.	Providing sand faced plaster for external portion in cement mortar using Kharsalia / Kasaba or similar type of sand, in all positions including base coat of 15 mm. Thick in C.M. 1:4 using water proofing compound at 1 kg per cement bag, curing the same for not less than 3 days and keeping the surface of the base coat rough to receive the sand faced treatment 6 to 8 mm thick in C.M. 1:4 finishing the surface by taking out grains, making grooves and curing for fourteen days scaffolding etc. complete. Spec.No.: Bd.L.7/Page NO.369 (I- 95 P - 19)	280.00	Rs. Two Hundred Eighty Only.	9240.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
11	Bd/L-5 P-368 & Bd/L- 10 P-370	36.24	Sq.Mt.	Providing internal cement plaster 25 mm thick in single coat in cement mortar 1:4 without neeru finish to concrete, brick, stone surfaces in all positions including scaffolding and curing. Providing groove at joint of B.B. Masonry and concrete members complete. Spec.No.: Bd.L.5/Page No. 368 Providing neeru finish / neat cement finish to plastered surfaces for ceiling. Spec.No.: Bd.L.10/Page No.370 (I - 94 P -18 + I - 99 P- 19)	253.00	Rs.Two Hundred Fifty Three Only.	9168.72
12	Bd/P-2 P- 412	43.48	Sq.Mt.	Providing & applying colour wash in three coats to old/new plastered or masonry surfaces and asbestos cement sheets including scaffolding and preparing the surface to receive the paint by brushing and brooming down and applying putty etc. complete. Spec.No.: Bd.P.2/Page No.412 (I -201 P- 32)	11.00	Rs.Eleven Only.	478.28
13	Bd/P-3 P- 412	39.60	Sq.Mt.	Providing & applying colour wash in three coats to old/new plastered or masonry surfaces and asbestos cement sheets including scaffolding and preparing the surface to receive the paint by brushing and brooming down and applying putty etc. complete.Spec.No.: Bd.P.3/Page No.412 (I -205 P-32)	11.00	Rs.Eleven Only.	435.60
14	Bd/M-22 P-390	2.25	Sq.Mt.	Providing and laying polished Kota Stone slabs 20mm to 25 mm thick for treads and risers of steps and staircases, with rounded nosing and groove at edge for the treads, on a bed of C.M. 1:4 including cement float filling joints with neat cement slurry, curing, polishing and cleaning complete. Spec.No.: Bd.M.22/Page No.390 (I- 142 P - 25)	850.00	Rs. Eight Hundred Fifty Only.	1912.50
15	Bd/T-30 P-496	2.00	Sq.Mt.	Providing and fixing double leaf door,with country teak wood shutter and panels as per detailed drawing including iron oxidised fixtures and fastening stoppers and finishing with one coat of primer complete. (Excluding door frame) (Sample to be got approved from Ex. Engineer before use) (1-b) panels of 12 mm thick, exterior grade prelaminated particle board laminated on both side. Spec.No.: Bd.T.30/Page No.496 (I- 255 (1-b) P - 39)	3385.00	Rs. Three Thousand Three Hundred Eighty Five Only.	6770.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
16		0.54	Sq.Mt.	Supplying and fixing in position aluminium extruded section Two track sliding windows upto 1.2 metre height, outer frame made from section of over all size 62 mm x 45 mm, bottom section with or without drain section, track weighing 0.90 kg per metre and top and side section weighing 0.838 kg per running metre with shutter or sections made of 19 mm x 40 mm size having average weight of 0.6 kg per running metre(or as required size) with change in proportionate weight,with 5.5 mm selected quality plain sheet glass fixed with new neoprene gasket shutters to be provided with nylon encased stainless rollers, necessary locks and handles complete. (As per Architect's drawing no.Job No. T- MISC/5000 Drg.No.22 dated 3.2.1992) Spec.No.: As directed by Engineer- in-charge. (I- 290 P - 44)	3894.00	Rs. Three Thousand Eight Hundred Ninety Four Only.	2102.76
						Total Rs. =	149235.29
				Add Miscellenious 1 %			1492.35
							150727.64
						Say Rs. =	150728

ABSTRACT 11
DECK ALONG RIVER EDGE

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	Bd- A-1 /259	23.76	Cu.Mt.	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete. (Spec.No. : Bd.A.1/Page No.259) Lift upto 1.5 M (I -1A) i P -1	107.00	Rs. One Hundred Two Only.	2542.32
				including dewatering			
2	Bd-A -12/ 264	5.38	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264 (I -10 P-2)	771.00	Rs. Seven Hundred seventy one Only.	4147.98
3	Bd- E-1 / 287	3.51	Cu.Mt.	Providing and laying in situ, cement concrete M-15 of trap/ granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood/steel formwork, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I -24 P - 5)	3915.00	Rs.Three thousand nine hundred fifteen Only.	13741.65
4		8.10	Cu.Mt.	Dismantling brick masonry in lime or cement mortar and stacking the materials as directed with all leads, lifts etc. complete. Spec.No. : As directed by Engineer-in-charge. (I -455 P -67)	125.00	Rs. One Hundred Twenty Five Only.	1012.50

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
5	Bd/F-3 P-298	5.94	Cu.mt.	Providing and laying in situ cement concrete of required grade of trap / granite/ quartzite / gneiss metal for R.C.C. work in foundations like raft, grillages, strip foundations and footings of R.C.C.columns and steel stanchions including bailing out water, plywood/steel formwork, compaction, curing and roughening the surface if special finish is to be provided, finishing uneven and honeycombed surface with C.M. 1:3 of sufficient minimum thickness to give smooth and even surface etc. complete. (Excluding reinforcement and structural steel, including cover block) The Cement Mortar 1:3 plaster is considered for rendering unevenand honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed) b) For C.C.M-25 Spec.No: Bd.F.3/Page No.298/I.S.456 (2000) (I -30 P - 6)	4696.00	Rs. Four Thousand Six Hundred Ninety Six Only.	27894.24
6	Bd/F-11 P-304	15.04	Cu.Mt.	Providing and casting in situ cement concrete of required grade of trap / granite / gneiss / quartzite metal for R.C.C. pardi 75 mm thick including steel centering, plywood /steel formwork, compaction, finishing uneven and honeycombed surface with C.M. 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening them if special finish is to be provided and curing etc.complete.(Excluding reinforcement, including cover block) The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only.(Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc.) (Wooden centering will not be allowed) b) For C.C.M-25 Spec.No.: Bd.F.11/Page No.304/I.S. 456 (2000) (I -45 (b) P-10)	8373.00	Rs. Eight Thousand Three Hundred Seventy Three Only.	125929.92
7	Bd-F- 17/ 306	2.41	M.T.	Providing and fixing in position reinforcement of various diameters for R.C.C. pile caps, footings, foundations, slabs, beams and columns, canopies, staircases, newels, chajjas, lintels, pardies, coping, fins, arches etc. as per detailed design and drawings and schedules including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required completed. b) For TMT steel bars (If TMT steel is to be used prior permission from S.E.should be taken) Spec.No.: Bd.F.17/Page No.306 (I -46 b) P - 10	57400.00	Rs. Fifty Seven Thousand Four Hundred Only.	138334.00
8	Bd/A-10 P-262	10.80	Cu.Mt.	Filling in plinth and floors with approved excavated materials in 15 cm. to 20 cm. layers including watering and compaction complete.(Spec. No. : Bd.A. 10/Page No. 262) (I -7 P - 2)	51.00	Rs. Fifty One Only.	550.80

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
9	Bd/A -11 /263	12.00	Cu.Mt.	Filling in plinth and floors with contractors approved material / murum / in 15cm. to 20cm. layers including watering and compaction complete. (Spec. No. : Bd.A. 11/Page No. 263)(I -8 P - 2)	542.00	Rs. Five Hundred Fourty Two Only.	6504.00
10	As per wording of item	12.96	Cu.mt.	Removing excavated materials including debris from the site of the work including all lead & lift to any distance as designated by BMC at dumping centre or as directed.(MHADA 2012-13, I-29 P-25).	240.00	Rs. Two Hundred Fourty Only.	3110.40
11	As per wording of item.	20.26	Sq.Mt	Railing Steel as per detailed drawings & designs by Consultant & as per instruction of City Engineer. (Market Rate)	5000.00	Rs. Five Thousand Only	101300.00
						Total Rs. =	425067.81
				Add Miscellenious 1 %			4250.68
							429318.49
						Say Rs. =	429318

ABSTRACT 12
FOOT PATH FOR NODE 9-10

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	Bd- A-1 /259	154.08	Cu.Mt.	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete. (Spec.No. : Bd.A.1/Page No.259)Lift upto 1.5 M I -1A)i P -1	107.00	Rs. One Hundred Two Only.	16486.56
				including dewatering			
2	Bd-A -14/ 264	85.60	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264 (I -10 P-2)	771.00	Rs. Seven Hundred seventy one Only.	65997.60
3	Bd- E-1 / 287	34.24	Cu.Mt.	Providing and laying in situ, cement concrete M-15 of trap/ granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood/steel formwork, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) I -24 P- 5)	3915.00	Rs.Three thousand nine hundred fifteen Only.	134049.60
4	Bd/A-10 P- 262	496.48	Cu.Mt.	Filling in plinth and floors with approved excavated materials in 15 cm. to 20 cm. layers including watering and compaction complete.(Spec. No. : Bd.A. 10/Page No. 262) (I -7 P - 2)	51.00	Rs. Fifty One Only.	25320.48
5	Bd/A -11 /263	496.48	Cu.Mt.	Filling in plinth and floors with contractors approved material / murum / in 15cm. to 20cm. layers including watering and compaction complete. (Spec. No. : Bd.A. 11/Page No. 263) (I -8 P - 2)	542.00	Rs. Five Hundred Fourty Two Only.	269092.16

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
6	47 BDW 16	496.48	Cu.mt.	Transportation of material obtained from debris of various sorts including necessary excavation/ loosening including loading, unloading and conveying and disposing as directed. For 5km (Spec.No.: As directed by Engineer- in-charge.) (I -473 P - 66)	267.00	Rs. Two Hundred Sixty Seven Only.	132560.16
7		107.00	Sq.Mt.	Providing and fixing 60mm thick factory made Hydraulically pressed Mechanically vibrated and compacted precast inter locking cement concrete paving blocks in M-40 grade of approved size and shape as specified 50 mm in gray cement and top surface 10 mm in white cement with coloured pigment including cost of all materials, manufacturing, curing, transportation of blocks to work site including loading, unloading and stacking as directed, laying paving blocks in position over prepared bed of sand of 50 mm thickness including necessary excavation in all stratas, spreading blinding of fine sand over the prepared bed, compacting blocks by plate vibrator etc. complete. Spec.No.: As directed by Engineer-in-charge. (I -155 P - 27)	620.00	Rs. Six Hundred Twenty Only.	66340.00
						Total Rs. =	709846.56
						Say Rs. =	709847

ABSTRACT 13
PLANTATION NODE 9-10

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	Bd- A-2 B-ii /259	330	Cu.Mt.	Excavation for foundation in hard murum including removing the excavated material upto distance of 50 meters beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etc. complete.(Spec. No. : Bd.A. 2/Page No. 259)ii. Lift above 1.5 m to 3.00 m.Depth (I - 2A)ii P-1 Including Dewatering	130.00	Rs. One Hundred Twenty Four Only.	42900.00
2	Bd-A -12/ 264	151.80	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264 (I-10 P-2)	771.00	Rs. Seven Hundred Seventy One Only.	117037.80
3	Bd- E-1 / 287	99.00	Cu.Mt.	Providing and laying in situ, (P.C.C)cement concrete M-15 of trap/ granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood/steel formwork, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I-24 P - 5)	3915.00	Rs.Three Thousand Nine Hundred Fifteen Only.	387585.00
6	Bd/H-1 P - 329	618.75	Cu.Mt.	Providing uncoursed rubble masonry of trap/granite/quartzite/gneiss stones in cement mortar 1:6 in foundations and plinth of inner walls / in plinth of external walls including bailing out water, striking joints on unexposed faces and watering complete. Spec.No.: Bd.H.1/Page No.329 (I -60 P 12)	1572.00	Rs. One Thousand Five Hundred Seventy Two Only	972675.00
7	Bd/ L-7 P -369	618.75	Sq.Mt.	Providing sand faced plaster for external portion in cement mortar using Kharsalia / Kasaba or similar type of sand, in all positions including base coat of 15 mm. Thick in C.M. 1:4 using water proofing compound at 1 kg per cement bag, curing the same for not less than 3 days and keeping the surface of the base coat rough to receive the sand faced treatment 6 to 8 mm thick in C.M. 1:4 finishing the surface by taking out grains, making grooves and curing for fourteen days scaffolding etc. complete. Spec.No.: Bd.L.7/Page NO.369 (I - 95 P - 19)	280.00	Rs. Two Hundred Eighty Only.	173250.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
8	C.S.R. Road construction W.B.M. Sr. No. 37, RD-28 P. No. 229, 2011-12.	825.00	Cu.Mt.	Filling fresh garden soil/silt & manure in excavated area including lead up to a distance of 50mtrs.	42.00	Rs. Fourty Two Only.	34650.00
9	C.S.R.I. No. 1, Page No. 2, Parks and Garden2011-12	618.75	Cu.Mt.	GARDEN SOIL :- supplying on site garden soil, well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.)	330.00	Rs. Three Hundred Thirty Only.	204187.50
	(C.S.R.I. No 11, Page No 6, Parks & Garden2011-12)	100.00	No.	Planting large flowering/Shady trees:- Digging pit with size 0.9m x 0.9m x 0.9m, removing and conveying unwanted stuff to a required distance as directed. Providing and filling the pit with approved excavated material up to a height of 0.30 m and remaining height of 0.60 m with fresh garden soil & manure in 3.1 proportion. Mixing soil and manure thoroughly well, leveling, as directed. Watering previous night, planting one or two year old healthily trees sapling as per specifications. Maintaining till well established by watering. Weeding stirring of soil replacing of casualties etc. complete.	365.00	Rs Three Hundred and sixty five only	36500.00
10	C.S.R.I. No. 9, Page No. 3, Parks and Garden 2011-12	100.00	No.	Saplings of flowering / shady trees, Gulmohar, Raintree, Paltophorum etc. (Minimum 1.20m height. (C.S.R.I. No. 8, Page No. 3, Parks and Garden2011-12)	25.00	Rs. Fifty Only.	2500.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
11	Bd/V-36 P- 571	37.50	Rmt.	Providing and fixing 100 mm. Diameter cast iron centrifuguly spurn soil/ vent/ waste pipes with necessary fixtures and fitting such as bends, tees, single junction, double junction, slotted vent offsets on walls or in the ground including filling joints with lead with read lead oil paint coat and two coats of anticorrosive paint including fixing the pipe on walls by means of nails driven through lugs in wooden holder/battens and supported on ground floor by C.C. 1:2:4 of 30 cm. x 30 cm. size blocks complete.Spec. No.: BD.V.36 Page No. 571. (I -403 P-62)	913.00	Rs. Nine Hundred Thirteen Only.	34237.50
	Misc (c), 426 (2)	275.00	Rmt.	Providing and erecting including fabricating 0.90 Mt.high decorative type chain link fencing with panelling made out of M.S. angle 50 mm x 50 mm x 6 mm for frame work with M.S. flat 40 mm x 5 mm welded for fastening chain link with frame angle and chain link mesh of 10 gauge & having hole size 65 mm x 65 mm panelling supported on post made of M.S. flat 50 mm x 6 mm on either side of pannel including fixing posts in C.C. 1:4:8 block and fastening the chain link, painting the exposed structural steel work with oil paint (M.S.flat post to be 1.05 Mtr. in height above ground level), including constructing BB masonary 23 cm thick 0.50 m. in ht. (0.20 m below G.L. and 0.30 m. above G.L.) including cement plaster in C.M.1:5 and colour washing etc. complete.	1522.00	one thousand five hundred twenty two only	418550.00
						Total Rs. =	2424072.80
				Add Miscellenious 1 %			24240.73
							2448313.53
						Say Rs. =	2448314

ABSTRACT 14

PLANTATION AND WALL NODE 11

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	Bd.A.1/Page No.259			Excavation for foundation in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete.			
				B) Including Dewatering			
		375.00	Cu.Mt.	i. Lift upto 1.5 m.	107.00	Rs. One Hundred and seven only	40125.00
2	Bd-A -12/ 264	172.50	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264 (I -10 P-2)	771.00	Rs. Seven Hundred Seventy One Only.	132997.50
3	Bd- E-1 / 287	112.50	Cu.Mt.	Providing and laying in situ, (P.C.C)cement concrete M-15 of trap/ granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood/steel formwork, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I -24 P - 5)	3915.00	Rs.Three Thousand Nine Hundred Fifteen Only.	440437.50
4	Bd/G-1 P 313	31.05	Cu.Mt.	Providing Fly ash lime brick masonry (bricks conforming to I.S.12894 : 1990 of size 19 cm x 9 cm x 9 cm) in cement mortar 1:6 in foundations and plinth of inner walls / in plinth of external walls including bailing out water, striking joints on unexposed faces, racking out joints on exposed faces and watering complete. Spec.No.: Bd.G.1/Page No.313 (I -49 P - 11)	3574.00	Rs.Three Thousand Five Hundred Seventy Four Only.	110972.70
5	Bd/H-1 P - 329	160.00	Cu.Mt.	Providing uncoursed rubble masonry of trap/granite/quartzite/gneiss stones in cement mortar 1:6 in foundations and plinth of inner walls / in plinth of external walls including bailing out water, striking joints on unexposed faces and watering complete. Spec.No.: Bd.H.1/Page No.329 (I -60 P 12)	1572.00	Rs. One Thousand Five Hundred Seventy Two Only	251520.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
6	Bd/ L-7 P -369	317.50	Sq.Mt.	Providing sand faced plaster for external portion in cement mortar using Kharsalia / Kasaba or similar type of sand, in all positions including base coat of 15 mm. Thick in C.M. 1:4 using water proofing compound at 1 kg per cement bag, curing the same for not less than 3 days and keeping the surface of the base coat rough to receive the sand faced treatment 6 to 8 mm thick in C.M. 1:4 finishing the surface by taking out grains, making grooves and curing for fourteen days scaffolding etc. complete. Spec.No.: Bd.I. 7/Page NO.369 (I - 95 P - 19)	280.00	Rs. Two Hundred Eighty Only.	88900.00
				compound wall			
				brick wall as a bund for pathway			
7		650.00	Sq.Mt.	Providing and fixing 60mm thick factory made Hydraulically pressed Mechanically vibrated and compacted precast inter locking cement concrete paving blocks in M-40 grade of approved size and shape as specified 50 mm in gray cement and top surface 10 mm in white cement with coloured pigment including cost of all materials, manufacturing, curing, transportation of blocks to work site including loading, unloading and stacking as directed, laying paving blocks in position over prepared bed of sand of 50 mm thickness including necessary excavation in all stratas, spreading blindge of fine sand over the prepared bed, compacting blocks by plate vibrator etc. complete. Spec.No.: As directed by Engineer- in-charge. (I -155 P - 27)	620.00	Rs. Six Hundred Twenty Only.	403000.00
8	Bd- E-1 / 287	31.05	Cu.Mt.	Providing 2nd class Burnt Brick masonry with conventional/I.S. type bricks in cement mortar 1:6 in foundations and plinth of inner walls/in plinth of external walls including bailing out water, striking joints on unexposed faces, racking out joints on exposed faces and watering complete. Spec.No.: Bd.G.1/Page No.313 (I -50 P 11)	3443.00	Rs. Three Thousand Four Hundred Forty Three Only	106905.15
9	C.S.R. Road construction W.B.M. Sr. No. 37, RD-28 P. No. 229, 2011-12.	750.00	Cu.Mt.	Filling fresh garden soil/silt & manure in excavated area including lead up to a distance of 50mtrs.	42.00	Rs. Fourty Two Only.	31500.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
10	C.S.R.I. No. 1, Page No. 2, Parks and Garden2011-12	750.00	Cu.Mt.	GARDEN SOIL :- supplying on site garden soil, well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.)	330.00	Rs. Three Hundred Thirty Only.	247500.00
11	(C.S.R.I. No 11, Page No 6,Parks & Garden2011-12)	300.00	No.	Planting large flowering/Shady trees:- Digging pit with size 0.9m x 0.9m x 0.9m, removing and conveying unwanted stuff to a required distance as directed. Providing and filling the pit with approved excavated material up to a height of 0.30 m and remaining height of 0.60 m with fresh garden soil & manure in 3.1 proportion. Mixing soil and manure thoroughly well, leveling, as directed. Watering previous night, planting one or two year old healthily trees sapling as per specifications. Maintaining till well established by watering. Weeding stirring of soil replacing of casualties etc. complete.	365.00	Rs Three Hundred and sixty five only	109500.00
12	C.S.R.I. No. 9, Page No. 3, Parks and Garden 2011-12	600.00	No.	Saplins of small and medium ornamental flowering plants, Thuja, Cupresus, Palms, Ornamental Ficus, Musanda etc.	50.00	Rs. Fifty Only.	30000.00
13	Bd/V-36 P- 571	37.50	Rmt.	Providing and fixing 100 mm. Diameter cast iron centrifuguly spurn soil/ vent/ waste pipes with necessary fixtures and fitting such as bends, tees, single junction, double junction, slotted vent offsets on walls or in the ground including filling joints with lead with read lead oil paint coat and two coats of anticorrosive paint including fixing the pipe on walls by means of nails driven through lugs in wooden holder/battens and supported on ground floor by C.C. 1:2:4 of 30 cm. x 30 cm. size blocks complete.Spec. No.: BD.V.36 Page No. 571. (I -403 P-62)	913.00	Rs. Nine Hundred Thirteen Only.	34237.50

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
14	Misc (c), 426 (2)	250.00	Rmt.	Providing and erecting including fabricating 0.90 Mt.high decorative type chain link fencing with panelling made out of M.S. angle 50 mm x 50 mm x 6 mm for frame work with M.S. flat 40 mm x 5 mm welded for fastening chain link with frame angle and chain link mesh of 10 gauge & having hole size 65 mm x 65 mm panelling supported on post made of M.S. flat 50 mm x 6 mm on either side of pannel including fixing posts in C.C. 1:4:8 block and fastening the chain link, painting the exposed structural steel work with oil paint (M.S.flat post to be 1.05 Mtr. in height above ground level), including constructing BB masonry 23 cm thick 0.50 m. in ht. (0.20 m below G.L. and 0.30 m. above G.L.) including cement plaster in C.M.1:5 and colour washing etc. complete.	1522.00	one thousand five hundred twenty two only	380500.00
						Total Rs. =	2408095.35
				Add Miscellenious 1 %			24080.95
							2432176.30
						Say Rs. =	2432176

ABSTRACT 15

PLANTATION AND WALL NODE 15

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	Bd- A-2 B-ii /259	551.25	Cu.Mt.	Excavation for foundation in hard murum including removing the excavated material upto distance of 50 meters beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etc. complete.(Spec. No. : Bd.A. 2/Page No. 259)ii. Lift above 1.5 m to 3.00 m.Depth (I - 2A)ii P-1 Including Dewatering	130.00	Rs. One Hundred Twenty Four Only.	71662.50
2	Bd-A -12/ 264	289.80	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264 (I -10 P-2)	771.00	Rs. Seven Hundred Seventy One Only.	223435.80
3	Bd- E-1 / 287	157.50	Cu.Mt.	Providing and laying in situ, (P.C.C)cement concrete M-15 of trap/ granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood/steel formwork, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I -24 P - 5)	3915.00	Rs.Three Thousand Nine Hundred Fifteen Only.	616612.50
6	Bd/H-1 P - 329	574.00	Cu.Mt.	Providing uncoursed rubble masonry of trap/granite/quartzite/gneiss stones in cement mortar 1:6 in foundations and plinth of inner walls / in plinth of external walls including bailing out water, striking joints on unexposed faces and watering complete. Spec.No.: Bd.H.1/Page No.329 (I -60 P 12)	1572.00	Rs. One Thousand Five Hundred Seventy Two Only	902328.00
8	C.S.R. Road construction W.B.M. Sr. No. 37, RD-28 P. No. 229, 2011-12.	1260.00	Cu.Mt.	Filling fresh garden soil/silt & manure in excavated area including lead up to a distance of 50mtrs.	42.00	Rs. Forty Two Only.	52920.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
9	C.S.R.I. No. 1, Page No. 2, Parks and Garden2011-12	1260.00	Cu.Mt.	GARDEN SOIL :- supplying on site garden soil, well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.)	330.00	Rs. Three Hundred Thirty Only.	415800.00
	(C.S.R.I. No 11, Page No 6, Parks & Garden2011-12)	200.00	No.	Planting large flowering/Shady trees:- Digging pit with size 0.9m x 0.9m x 0.9m, removing and conveying unwanted stuff to a required distance as directed. Providing and filling the pit with approved excavated material up to a height of 0.30 m and remaining height of 0.60 m with fresh garden soil & manure in 3:1 proportion. Mixing soil and manure thoroughly well, leveling, as directed. Watering previous night, planting one or two year old healthy trees sapling as per specifications. Maintaining till well established by watering. Weeding stirring of soil replacing of casualties etc. complete.	365.00	Rs Three Hundred and sixty five only	73000.00
10	C.S.R.I. No. 9, Page No. 3, Parks and Garden 2011-12	200.00	No.	Saplings of small and medium ornamental flowering plants, Thuja, Cupresus, Palms, Ornamental Ficus, Musanda etc.	50.00	Rs. Fifty Only.	10000.00
11	Bd/V-36 P- 571	37.50	Rmt.	Providing and fixing 100 mm. Diameter cast iron centrifuguly spurn soil/ vent/ waste pipes with necessary fixtures and fitting such as bends, tees, single junction, double junction, slotted vent offsets on walls or in the ground including filling joints with lead with read lead oil paint coat and two coats of anticorrosive paint including fixing the pipe on walls by means of nails driven through lugs in wooden holder/battens and supported on ground floor by C.C. 1:2:4 of 30 cm. x 30 cm. size blocks complete.Spec. No.: BD.V.36 Page No. 571. (I -403 P-62)	913.00	Rs. Nine Hundred Thirteen Only.	34237.50

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
	Misc (c), 426 (2)	350.00	Rmt.	Providing and erecting including fabricating 0.90 Mt.high decorative type chain link fencing with panelling made out of M.S. angle 50 mm x 50 mm x 6 mm for frame work with M.S. flat 40 mm x 5 mm welded for fastening chain link with frame angle and chain link mesh of 10 gauge & having hole size 65 mm x 65 mm panelling supported on post made of M.S. flat 50 mm x 6 mm on either side of pannel including fixing posts in C.C. 1:4:8 block and fastening the chain link, painting the exposed structural steel work with oil paint (M.S.flat post to be 1.05 Mtr. in height above ground level), including constructing BB masonary 23 cm thick 0.50 m. in ht. (0.20 m below G.L. and 0.30 m. above G.L.) including cement plaster in C.M.1:5 and colour washing etc. complete.	1522.00	one thousand five hundred twenty two only	532700.00
						Total Rs. =	2932696.30
				Add Miscellenious 1 %			29326.96
							2962023.26
						Say Rs. =	2962023

ABSTRACT 16

PLANTATION - RAVI NAGAR

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	C.S.R. Road construction W.B.M. Sr. No. 37, RD-28 P. No. 229, 2011-12.	216.75	Cu.Mt.	Filling fresh garden soil/silt & manure in excavated area including lead up to a distance of 50mtrs.	42.00	Rs. Fourty Two Only.	9103.50
3	C.S.R.I. No. 1, Page No. 2, Parks and Garden2011-12	216.75	Cu.Mt.	GARDEN SOIL :- supplying on site garden soil, well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.)	330.00	Rs. Three Hundred Thirty Only.	71527.50
4	(C.S.R.I. No 11, Page No 6, Parks & Garden2011-12)	30.00	No.	Planting large flowering/Shady trees:- Digging pit with size 0.9m x 0.9m x 0.9m, removing and conveying unwanted stuff to a required distance as directed. Providing and filling the pit with approved excavated material up to a height of 0.30 m and remaining height of 0.60 m with fresh garden soil & manure in 3:1 proportion. Mixing soil and manure thoroughly well, leveling, as directed. Watering previous night, planting one or two year old healthy trees sapling as per specifications. Maintaining till well established by watering. Weeding stirring of soil replacing of casualties etc. complete.	365.00	Rs Three Hundred and sixty five only	10950.00
5		30.00	No.	Saplings of flowering / shady trees, Gulmohar, Raintree, Paltophorum etc. (Minimum 1.20m height.	25.00	Rs twenty five only	750.00
				(C.S.R.I. No. 8, Page No. 3, Parks and Garden2011-12)			
						Total Rs. =	92331.00
				Add Miscellenious 1 %			923.31
							93254.31
						Say Rs. =	93254

ABSTRACT 17
MAHARAJA BAUG

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	Bd.A.1/Page No.259			Excavation for foundation in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete.			
				B) Including Dewatering			
		450.00	Cu.Mt.	i. Lift upto 1.5 m.	107.00	Rs. One Hundred and seven only	48150.00
2	Bd-A -12/ 264	207.00	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264 (I-10 P-2)	771.00	Rs. Seven Hundred Seventy One Only.	159597.00
3	Bd- E-1 / 287	135.00	Cu.Mt.	Providing and laying in situ, (P.C.C)cement concrete M-15 of trap/ granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood/steel formwork, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I-24 P - 5)	3915.00	Rs.Three Thousand Nine Hundred Fifteen Only.	528525.00
4	Bd- E-1 / 287	62.10	Cu.Mt.	Providing 2nd class Burnt Brick masonry with conventional/I.S. type bricks in cement mortar 1:6 in foundations and plinth of inner walls/in plinth of external walls including bailing out water, striking joints on unexposed faces, racking out joints on exposed faces and watering complete. Spec.No.: Bd.G.1/Page No.313 (I-50 P 11)	3443.00	Rs. Three Thousand Four Hundred Forty Three Only	213810.30
5	Bd/ L-7 P -369	135.00	Sq.Mt.	Providing sand faced plaster for external portion in cement mortar using Kharsalia / Kasaba or similar type of sand, in all positions including base coat of 15 mm. Thick in C.M. 1:4 using water proofing compound at 1 kg per cement bag, curing the same for not less than 3 days and keeping the surface of the base coat rough to receive the sand faced treatment 6 to 8 mm thick in C.M. 1:4 finishing the surface by taking out grains, making grooves and curing for fourteen days scaffolding etc. complete. Spec.No.: Bd.I. 7/Page NO.369 (I- 95 P - 19)	280.00	Rs. Two Hundred Eighty Only.	37800.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
				compound wall			
				brick wall as a bund for pathway			
6		650.00	Sq.Mt.	Providing and fixing 60mm thick factory made Hydraulically pressed Mechanically vibrated and compacted precast inter locking cement concrete paving blocks in M-40 grade of approved size and shape as specified 50 mm in gray cement and top surface 10 mm in white cement with coloured pigment including cost of all materials, manufacturing, curing, transportation of blocks to work site including loading, unloading and stacking as directed, laying paving blocks in position over prepared bed of sand of 50 mm thickness including necessary excavation in all stratas, spreading blinding of fine sand over the prepared bed, compacting blocks by plate vibrator etc. complete. Spec.No.: As directed by Engineer- in-charge. (I -155 P - 27)	620.00	Rs. Six Hundred Twenty Only.	403000.00
7	(C.S.R.I. No 11, Page No 6,Parks & Garden2011-12)	300.00	No.	Planting large flowering/Shady trees:- Digging pit with size 0.9m x 0.9m x 0.9m, removing and conveying unwanted stuff to a required distance as directed. Providing and filling the pit with approved excavated material up to a height of 0.30 m and remaining height of 0.60 m with fresh garden soil & manure in 3:1 proportion. Mixing soil and manure thoroughly well, leveling, as directed. Watering previous night, planting one or two year old healthy trees sapling as per specifications. Maintaining till well established by watering. Weeding stirring of soil replacing of casualties etc. complete.	365.00	Rs Three Hundred and sixty five only	109500.00
8	C.S.R.I. No. 9, Page No. 3, Parks and Garden 2011-12	300.00	No.	Saplings of flowering / shady trees, Gulmohar, Raintree, Paltothorum etc. (Minimum 1.20m height. (C.S.R.I. No. 8, Page No. 3, Parks and Garden2011-12)	50.00	Rs. Fifty Only.	15000.00
						Total Rs. =	1515382.30
				Add Miscellaneous 1 %			15153.82
							1530536.12
						Say Rs. =	1530536

ABSTRACT 18
SANGAM - NAG AND PILI

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	C.S.R. Road construction W.B.M. Sr. No. 37, RD-28 P. No. 229, 2011-12.	900.00	Cu.Mt.	Filling fresh garden soil/silt & manure in excavated area including lead up to a distance of 50mtrs.	42.00	Rs. Fourty Two Only.	37800.00
3	C.S.R.I. No. 1, Page No. 2, Parks and Garden2011-12	900.00	Cu.Mt.	GARDEN SOIL :- supplying on site garden soil, well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.)	330.00	Rs. Three Hundred Thirty Only.	297000.00
4	(C.S.R.I. No 11, Page No 6, Parks & Garden2011-12)	160.00	No.	Planting large flowering/Shady trees:- Digging pit with size 0.9m x 0.9m x 0.9m, removing and conveying unwanted stuff to a required distance as directed. Providing and filling the pit with approved excavated material up to a height of 0.30 m and remaining height of 0.60 m with fresh garden soil & manure in 3:1 proportion. Mixing soil and manure thoroughly well, leveling, as directed. Watering previous night, planting one or two year old healthy trees sapling as per specifications. Maintaining till well established by watering. Weeding stirring of soil replacing of casualties etc. complete.	365.00	Rs Three Hundred and sixty five only	58400.00
5		160.00	No.	Saplins of flowering / shady trees, Gulmohar, Raintree, Paltophorum etc. (Minimum 1.20m height.	25.00	Rs twenty five only	4000.00
				(C.S.R.I. No. 8, Page No. 3, Parks and Garden2011-12)			
						Total Rs. =	397200.00
				Add Miscellenious 1 %			3972.00
							401172.00
						Say Rs. =	401172

ABSTRACT 19
ELEVATED PATHWAY - NODE 5

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	Bd- A-1 /259	5.10	Cu.Mt.	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete. (Spec.No. : Bd.A.1/Page No.259) Lift upto 1.5 M (I -1A) i P -1	107.00	Rs. One Hundred Two Only.	545.70
				including dewatering			
2	Bd- A-1 /259	0.61	Cu.Mt.	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete. (Spec.No. : Bd.A.1/Page No.259) ii. Lift above 1.5 m to 3.00 m.Depth (I - A) ii P- 1	111.00	Rs. One Hundred eleven Only.	67.71
3	Bd- A-2 /259	0.61	Cu.Mt.	Excavation for foundation in hard murum including removing the excavated material upto distance of 50 meters beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etc. complete.(Spec. No. : Bd.A. 2/Page No. 259)ii. Lift above 1.5 m to 3.00 m.Depth (I - 2A)ii P-1	124.00	Rs. One Hundred twenty Four Only.	75.64
4	Bd-A -14/ 264	0.45	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264 (I -10 P-2)	771.00	Rs. Seven Hundred seventy one Only.	346.95

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
5	Bd- E-1 / 287	0.29	Cu.Mt.	Providing and laying in situ, cement concrete M-15 of trap/ granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood/steel formwork, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I -24 P - 5)	3915.00	Rs.Three thousand nine hundred fifteen Only.	1135.35
6	Bd/F-3 P-298	0.50	Cu.mt.	Providing and laying in situ cement concrete of required grade of trap / granite/ quartzite / gneiss metal for R.C.C. work in foundations like raft, grillages, strip foundations and footings of R.C.C.columns and steel stanchions including bailing out water, plywood/steel formwork, compaction, curing and roughening the surface if special finish is to be provided, finishing uneven and honeycombed surface with C.M. 1:3 of sufficient minimum thickness to give smooth and even surface etc. complete. (Excluding reinforcement and structural steel, including cover block) The Cement Mortar 1:3 plaster is considered for rendering unevenand honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed) b) For C.C.M-25 Spec.No: Bd.F.3/Page No.298/I.S.456 (2000) (I -30 P - 6)	4696.00	Rs. Four Thousand Six Hundred Ninety Six Only.	2348.00
7	Bd/F-11 P-304	1.53	Cu.Mt.	Providing and casting in situ cement concrete of required grade of trap / granite / gneiss / quartzite metal for R.C.C. pardi 75 mm thick including steel centering, plywood /steel formwork, compaction, finishing uneven and honeycombed surface with C.M. 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening them if special finish is to be provided and curing etc.complete.(Excluding reinforcement, including cover block) The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only.(Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc.) (Wooden centering will not be allowed) b) For C.C.M-25 Spec.No.: Bd.F.11/Page No.304/I.S. 456 (2000) (I -45 (b) P -10)	8373.00	Rs. Eight Thousand Three Hundred Seventy Three Only.	12810.69

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
8	Bd-F- 17/ 306	0.23	M.T.	Providing and fixing in position reinforcement of various diameters for R.C.C. pile caps, footings, foundations, slabs, beams and columns, canopies, staircases, newels, chajjas, lintels, pardies, coping, fins, arches etc. as per detailed design and drawings and schedules including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required completed. b) For TMT steel bars (If TMT steel is to be used prior permission from S.E.should be taken) Spec.No.: Bd.F.17/Page No.306 (I -46 b) P - 10	57400.00	Rs. Fifty Seven Thousand Four Hundred Only.	13374.20
9	Bd/A-10 P- 262	1.43	Cu.Mt.	Filling in plinth and floors with approved excavated materials in 15 cm. to 20 cm. layers including watering and compaction complete.(Spec. No. : Bd.A. 10/Page No. 262) (I -7 P - 2)	51.00	Rs. Fifty One Only.	72.93
10	Bd/A -11 /263	0.50	Cu.Mt.	Filling in plinth and floors with contractors approved material / murum / in 15cm. to 20cm. layers including watering and compaction complete. (Spec. No. : Bd.A. 11/Page No. 263)(I -8 P - 2)	542.00	Rs. Five Hundred Fourty Two Only.	271.00
11	47 BDW 16	1.08	Cu.mt.	Transportation of material obtained from debris of various sorts including necessary excavation/ loosening including loading, unloading and conveying and disposing as directed. For 5km (Spec.No.: As directed by Engineer- in-charge.) (I -473 P - 66)	267.00	Rs. Two Hundred Sixty Seven Only.	288.36
12	As per wording of item.	1.20	Sq.Mt	Railing Steel as per detailed drawings & designs by Consultant & as per instruction of City Engineer. (Market Rate)	5000.00	Rs. Five Thousand Only	6000.00
13	Bd/H -1 P-329	0.48	Cu.Mt.	Providing uncoursed rubble masonry of trap/granite/quartzite/gneiss stones in cement mortar 1:6 in foundations and plinth of inner walls / in plinth of external walls including bailing out water, striking joints on unexposed faces and watering complete. Spec.No.: Bd.H.1/Page No.329 (I - 60 P -12)	1572.00	Rs. One Thousand Five Hundred Seventy Two Only.	754.56
14	Bd- M -4 /380	2.80	Sq.Mt.	Providing and laying polished Shahabad Stone Flooring 20 mm to 25 mm thick and of required width in plain/diamond pattern with black polished kaddappa slab for border or any other design on a bed of C.M. 1:6 including cement float, filling joints with neat cement slurry, curing polishing and cleaning complete. Spec.No.: Bd.M.4/Page No.380 (I -112 P - 21)	546.00	Rs. Five Hundred Fourty Six Only.	1528.80
						Total Rs. =	39619.89
				Add Miscellenious including drip irrigation 1 %			396.20
							40016.09

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
						Say Rs. =	40016

ABSTRACT 20**LOWER PATHWAY - NODE 5**

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	Bd- A-1 /259	2.95	Cu.Mt.	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete. (Spec.No. : Bd.A.1/Page No.259) Lift upto 1.5 M (I -1A) i P -1	102.00	Rs. One Hundred Two Only.	300.90
2	Bd-A -14/ 264	0.76	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264 (I -10 P-2)	771.00	Rs. Seven Hundred seventy one Only.	585.96
3	Bd- E-1 / 287	0.11	Cu.Mt.	Providing and laying in situ, cement concrete M-15 of trap/ granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood/steel formwork, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I -24 P - 5)	3915.00	Rs.Three thousand nine hundred fifteen Only.	430.65
4	Bd/A-10 P-262	0.05	Cu.Mt.	Filling in plinth and floors with approved excavated materials in 15 cm. to 20 cm. layers including watering and compaction complete.(Spec. No. : Bd.A. 10/Page No. 262) (I -7 P - 2)	51.00	Rs. Fifty One Only.	2.55
5	Bd/A -11 /263	0.05	Cu.Mt.	Filling in plinth and floors with contractors approved material / murum / in 15cm. to 20cm. layers including watering and compaction complete. (Spec. No. : Bd.A. 11/Page No. 263)(I -8 P - 2)	542.00	Rs. Five Hundred Fourty Two Only.	27.10
6	47 BDW 16	2.90	Cu.mt.	Transportation of material obtained from debris of various sorts including necessary excavation/ loosening including loading, unloading and conveying and disposing as directed. For 5km (Spec.No.: As directed by Engineer- in-charge.) (I -473 P - 66)	267.00	Rs. Two Hundred Sixty Seven Only.	774.30

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
7		2.30	Sq.Mt.	Providing and fixing 60mm thick factory made Hydraulically pressed Mechanically vibrated and compacted precast inter locking cement concrete paving blocks in M-40 grade of approved size and shape as specified 50 mm in gray cement and top surface 10 mm in white cement with coloured pigment including cost of all materials, manufacturing, curing, transportation of blocks to work site including loading, unloading and stacking as directed, laying paving blocks in position over prepared bed of sand of 50 mm thickness including necessary excavation in all stratas, spreading blinding of fine sand over the prepared bed, compacting blocks by plate vibrator etc. complete. Spec.No.: As directed by Engineer-in-charge. (I -155 P - 27)	620.00	Rs. Six Hundred Twenty Only.	1426.00
8	Bd/A-10 P-262	0.03	Cu.mt	Providing and casting in situ cement concrete M-15 of trap/granite/quartzite/gneiss metal for coping to plinth or parapet, moulded or chamfered as per drawing or as directed including steel centering, plywood/steel formwork compacting, roughening them if special finish is to be provided, finishing uneven and honeycombed surface and curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 3/Page No. 288/I.S. 456 (2000) (I - 26 P - 5)	3988.00	Rs. Three Thousand Nine Hundred Eighty Eight Only.	119.64
9	As per wording of item.	1.20	Sq.Mt	Railing Steel as per detailed drawings & designs by Consultant & as per instruction of City Engineer. (Market Rate)	5000.00	Rs. Five Thousand Only	6000.00
10	C.S.R. Road construction W.B.M. Sr. No. 37, RD-28 P. No. 229, 2011-12.	1.20	Cu.Mt.	Filling fresh garden soil/silt & manure in excavated area including lead up to a distance of 50mtrs.	42.00	Rs. Forty Two Only.	50.40

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
11	C.S.R.I. No. 1, Page No. 2, Parks and Garden 2011-12	1.20	Cu.Mt.	GARDEN SOIL :- supplying on site garden soil, well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.)	330.00	Rs. Three Hundred Thirty Only.	396.00
12	C.S.R.I. No. 9, Page No. 3, Parks and Garden 2011-12	10.00	No.	Saplings of small and medium ornamental flowering plants, Thuja, Cupresus, Palms, Ornamental Ficus, Musanda etc.	50.00	Rs. Fifty Only.	500.00
13	(C.S.R.I. No 12, Page No 6, Parks & Garden 2011-12)	10.00	No.	Planting small and medium size ornamental/ Flowering plant :- Digging pit with size 0.6 m x 0.6m x 0.6m. removing and conveying unwanted staff to a required distance as directed. Providing and filling the pit with fresh garden soil and farm yard manure thoroughly well, leveling. Watering on previous night Planting one or two year old healthy plant saplings as per specification Maintenance the well established by watering, stirring, of soil and manure, replacing casualties. etc. complete.	227.00	Rs. Two Hundred Twenty Seven Only.	2270.00
						Total Rs. =	12883.50
				Add Miscellenious including drip irrigation 1 %			128.84
							13012.34
						Say Rs. =	13012

ABSTRACT 21**AMPHI-SEATING - NODE 5**

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	Bd- A-1 /259	36.00	Cu.Mt.	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete. (Spec.No. : Bd.A.1/Page No.259) Lift upto 1.5 M (I -1A) i P -1	102.00	Rs. One Hundred Two Only.	3672.00
2	Bd-A -14/ 264	101.10	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264 (I -10 P-2)	771.00	Rs. Seven Hundred seventy one Only.	77948.10
3	Bd- E-1 / 287	39.06	Cu.Mt.	Providing and laying in situ, cement concrete M-15 of trap/ granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood/steel formwork, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I -24 P - 5)	3915.00	Rs.Three thousand nine hundred fifteen Only.	152919.90
4	Bd/A -11 /263	68.04	Cu.Mt.	Filling in plinth and floors with contractors approved material / murum / in 15cm. to 20cm. layers including watering and compaction complete. (Spec. No. : Bd.A. 11/Page No. 263)(I -8 P - 2)	542.00	Rs. Five Hundred Fourty Two Only.	36877.68

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
5		16.00	Sq.Mt.	Providing and fixing 60mm thick factory made Hydraulically pressed Mechanically vibrated and compacted precast inter locking cement concrete paving blocks in M-40 grade of approved size and shape as specified 50 mm in gray cement and top surface 10 mm in white cement with coloured pigment including cost of all materials, manufacturing, curing, transportation of blocks to work site including loading, unloading and stacking as directed, laying paving blocks in position over prepared bed of sand of 50 mm thickness including necessary excavation in all stratas, spreading blinding of fine sand over the prepared bed, compacting blocks by plate vibrator etc. complete. Spec.No.: As directed by Engineer-in-charge. (I -155 P - 27)	620.00	Rs. Six Hundred Twenty Only.	9920.00
6	Bd/H -1 P-329	25.20	Cu.Mt.	Providing uncoursed rubble masonry of trap/granite/quartzite/gneiss stones in cement mortar 1:6 in foundations and plinth of inner walls / in plinth of external walls including bailing out water, striking joints on unexposed faces and watering complete. Spec.No.: Bd.H.1/Page No.329 (I - 60 P -12)	1572.00	Rs. One Thousand Five Hundred Seventy Two Only.	39614.40
7	Bd- M -4 /380	50.40	Sq.Mt.	Providing and laying polished Shahabad Stone Flooring 20 mm to 25 mm thick and of required width in plain/diamond pattern with black polished kaddappa slab for border or any other design on a bed of C.M. 1:6 including cement float, filling joints with neat cement slurry, curing polishing and cleaning complete. Spec.No.: Bd.M.4/Page No.380 (I -112 P - 21)	546.00	Rs. Five Hundred Fourty Six Only.	27518.40
						Total Rs. =	348470.48
				Add Miscellenious including drip irrigation 1 %			3484.70
							351955.18
						Say Rs. =	351955

ABSTRACT 22**PLANTATION AND EDGE WALL - NODE 12**

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	Bd- A-1 /259	1836	Cu.Mt.	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete. (Spec.No. : Bd.A.1/Page No.259) Lift upto 1.5 M (I-1A) i P-1 including dewatering	102.00	Rs. One Hundred Two Only.	187272.00
2	Bd-A -12/ 264	360.00	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264 (I -10 P-2)	771.00	Rs. Seven Hundred seventy one Only.	277560.00
3	Bd- E-1 / 287	144.00	Cu.Mt.	Providing and laying in situ, cement concrete M-15 of trap/ granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood/steel formwork, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I-24 P - 5)	3915.00	Rs.Three thousand nine hundred fifteen Only.	563760.00
5	Bd- A-9 / 261	24000.00	Bhp-Hr	Dewatering the excavated trenches and pools of water in the building trenches/ pipeline treanches, well works by using pumps and other devices including disposing off water to safe distance as directed by Engineer-in-Charge (including cost of machinery, labour, fuel),etc. complete. i)The contractor at his request may be allowed to start construction of masonry steining so as not to allow silting of well on one set of monsoon and while paying masonry, 25% amount shall be withheld and released only when excavation to the full depth is completed. ii) Dewatering : Total dewatering charges are to be proposed in tender as lumpsum amount 75% is payable on completion of excavation and 25% is payable after construction of well/ gallery. Out of 75% payment on completion of excavation breakup shal be as under 25% for last 1 Mtr. Depth. 20% for 2 M depth which just above last 1 M depth. 15% for 2 M depth which just above last 3 M depth 15% for the rest of depth from water table level. (NAGPUR REGION DSR 11-12 / I - 14 P- 30)	56.00	Rs. Fifty Six Only.	1344000.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
6	Bd/F-3 P-298	315.00	Cu.mt.	Providing and laying in situ cement concrete of required grade of trap / granite/ quartzite / gneiss metal for R.C.C. work in foundations like raft, grillages, strip foundations and footings of R.C.C.columns and steel stanchions including bailing out water, plywood/steel formwork, compaction, curing and roughening the surface if special finish is to be provided, finishing uneven and honeycombed surface with C.M. 1:3 of sufficient minimum thickness to give smooth and even surface etc. complete. (Excluding reinforcement and structural steel, including cover block) The Cement Mortar 1:3 plaster is considered for rendering unevenand honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed) b) For C.C.M-25 Spec.No: Bd.F.3/Page No.298/I.S.456 (2000) (I -30 P - 6)	4696.00	Rs. Four Thousand Six Hundred Ninety Six Only.	1479240.00
7	Bd/F-11 P-304	525.00	Cu.Mt.	Providing and casting in situ cement concrete of required grade of trap / granite / gneiss / quartzite metal for R.C.C. pardi 75 mm thick including steel centering, plywood /steel formwork, compaction, finishing uneven and honeycombed surface with C.M. 1:3 of sufficient minimum thickness to give a smooth and even surface or roughening them if special finish is to be provided and curing etc.complete.(Excluding reinforcement, including cover block) The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only.(Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc.) (Wooden centering will not be allowed) b) For C.C.M-25 Spec.No.: Bd.F.11/Page No.304/I.S. 456 (2000) (I -45 (b) P-10)	8373.00	Rs. Eight Thousand Three Hundred Seventy Three Only.	4395825.00
8	Bd-F- 17/ 306	193.20	M.T.	Providing and fixing in position reinforcement of various diameters for R.C.C. pile caps, footings, foundations, slabs, beams and columns, canopies, staircases, newels, chajjas, lintels, pardies, coping, fins, arches etc. as per detailed design and drawings and schedules including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required completed. b) For TMT steel bars (If TMT steel is to be used prior permission from S.E.should be taken) Spec.No.: Bd.F.17/Page No.306 (I -46 b) P - 10	57400.00	Rs. Fifty Seven Thousand Four Hundred Only.	11089680.00
9	Bd/A-10 P-262	1962.00	Cu.Mt.	Filling in plinth and floors with approved excavated materials in 15 cm. to 20 cm. layers including watering and compaction complete.(Spec. No. : Bd.A. 10/Page No. 262) (I -7 P - 2)	51.00	Rs. Fifty One Only.	100062.00
10	Bd/A -11 /263	600.00	Cu.Mt.	Filling in plinth and floors with contractors approved material / murum / in 15cm. to 20cm. layers including watering and compaction complete. (Spec. No. : Bd.A. 11/Page No. 263)(I -8 P - 2)	542.00	Rs. Five Hundred Fourty Two Only.	325200.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
11	As per wording of item	1710.00	Cu.mt.	Removing excavated materials including debris from the site of the work including all lead & lift to any distance as designated by BMC at dumping centre or as directed.(MHADA 2012-13, I-29 P-25).	240.00	Rs. Two Hundred Fourty Only.	410400.00
12	C.S.R. Road construction W.B.M. Sr. No. 37, RD-28 P. No. 229, 2011-12.	810.00	Cu.Mt.	Filling fresh garden soil/silt & manure in excavated area including lead up to a distance of 50mtrs.	42.00	Rs. Fourty Two Only.	34020.00
13	C.S.R.I. No. 1, Page No. 2, Parks and Garden 2011-12	810.00	Cu.Mt.	GARDEN SOIL :- supplying on site garden soil, well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.)	330.00	Rs. Three Hundred Thirty Only.	267300.00
14	C.S.R.I. No. 9, Page No. 3, Parks and Garden 2011-12	810.00	No.	Saplins of small and medium ornamental flowering plants, Thuja, Cupresus, Palms, Ornamental Ficus, Musanda etc.	50.00	Rs. Fifty Only.	40500.00
15		1200.00	rmt	Drip Irrigation	100.00		120000.00
						Total Rs. =	20634819.00
				Add Miscellenious 1 %			206348.19
							20841167.19
						Say Rs. =	2.08 CR
PLANTATION WITH EDGE WALL							
1	Bd- A-2 B-ii /259	168	Cu.Mt.	Excavation for foundation in hard murum including removing the excavated material upto distance of 50 meters beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering including shoring and strutting etc. complete.(Spec. No. : Bd.A. 2/Page No. 259)ii. Lift above 1.5 m to 3.00 m.Depth (I - 2A)ii P-1	130.00	Rs. One Hundred Twenty Four Only.	21840.00
				Including Dewatering			

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
2	Bd-A -12/ 264	151.80	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264 (I -10 P-2)	771.00	Rs. Seven Hundred Seventy One Only.	117037.80
3	Bd- E-1 / 287	99.00	Cu.Mt.	Providing and laying in situ, (P.C.C)cement concrete M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood/steel formwork, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I.S. 456 (2000) (I -24 P - 5)	3915.00	Rs.Three Thousand Nine Hundred Fifteen Only.	387585.00
6	Bd/H-1 P - 329	352.00	Cu.Mt.	Providing uncoursed rubble masonry of trap/granite/quartzite/gneiss stones in cement mortar 1:6 in foundations and plinth of inner walls / in plinth of external walls including bailing out water, striking joints on unexposed faces and watering complete. Spec.No.: Bd.H.1/Page No.329 (I -60 P 12)	1572.00	Rs. One Thousand Five Hundred Seventy Two Only	972675.00
7	Bd/ L-7 P -369	618.75	Sq.Mt.	Providing sand faced plaster for external portion in cement mortar using Kharsalia / Kasaba or similar type of sand, in all positions including base coat of 15 mm. Thick in C.M. 1:4 using water proofing compound at 1 kg per cement bag, curing the same for not less than 3 days and keeping the surface of the base coat rough to receive the sand faced treatment 6 to 8 mm thick in C.M. 1:4 finishing the surface by taking out grains, making grooves and curing for fourteen days scaffolding etc. complete. Spec.No.: Bd.L.7/Page NO.369 (I - 95 P - 19)	280.00	Rs. Two Hundred Eighty Only.	173250.00
8	C.S.R. Road construction W.B.M. Sr. No. 37, RD-28 P. No. 229, 2011-12.	825.00	Cu.Mt.	Filling fresh garden soil/silt & manure in excavated area including lead up to a distance of 50mtrs.	42.00	Rs. Fourty Two Only.	34650.00

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
9	C.S.R.I. No. 1, Page No. 2, Parks and Garden2011-12	618.75	Cu.Mt.	GARDEN SOIL :- supplying on site garden soil, well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.)	330.00	Rs. Three Hundred Thirty Only.	204187.50
	(C.S.R.I. No 11, Page No 6,Parks & Garden2011-12)	100.00	No.	Planting large flowering/Shady trees:- Digging pit with size 0.9m x 0.9m x 0.9m, removing and conveying unwanted stuff to a required distance as directed. Providing and filling the pit with approved excavated material up to a height of 0.30 m and remaining height of 0.60 m with fresh garden soil & manure in 3:1 proportion. Mixing soil and manure thoroughly well, leveling, as directed. Watering previous night, planting one or two year old healthy trees sapling as per specifications. Maintaining till well established by watering. Weeding stirring of soil replacing of casualties etc. complete.	365.00	Rs Three Hundred and sixty five only	36500.00
10	C.S.R.I. No. 9, Page No. 3, Parks and Garden 2011-	100.00	No.	Saplings of flowering / shady trees, Gulmohar, Raintree, Paltophorum etc. (Minimum 1.20m height. (C.S.R.I. No. 8, Page No. 3, Parks and Garden2011-12)	25.00	Rs. Fifty Only.	2500.00
11	Bd/V-36 P-571	37.50	Rmt.	Providing and fixing 100 mm. Diameter cast iron centrifuguly spurn soil/ vent/ waste pipes with necessary fixtures and fitting such as bends, tees, single junction, double junction, slotted vent offsets on walls or in the ground including filling joints with lead with read lead oil paint coat and two coats of anticorrosive paint including fixing the pipe on walls by means of nails driven through lugs in wooden holder/battens and supported on ground floor by C.C. 1:2:4 of 30 cm. x 30 cm. size blocks complete.Spec. No.: BD.V.36 Page No. 571. (I -403 P-62)	913.00	Rs. Nine Hundred Thirteen Only.	34237.50

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
	Misc (c), 426 (2)	140.00	Rmt.	Providing and erecting including fabricating 0.90 Mt.high decorative type chain link fencing with panelling made out of M.S. angle 50 mm x 50 mm x 6 mm for frame work with M.S. flat 40 mm x 5 mm welded for fastening chain link with frame angle and chain link mesh of 10 gauge & having hole size 65 mm x 65 mm panelling supported on post made of M.S. flat 50 mm x 6 mm on either side of pannel including fixing posts in C.C. 1:4:8 block and fastening the chain link, painting the exposed structural steel work with oil paint (M.S.flat post to be 1.05 Mtr. in height above ground level), including constructing BB masonry 23 cm thick 0.50 m. in ht. (0.20 m below G.L. and 0.30 m. above G.L.) including cement plaster in C.M.1:5 and colour washing etc. complete.	1522.00	one thousand five hundred twenty two only	418550.00
						Total Rs. =	2403012.80
				Add Miscellenious 1 %			24030.13
							2427042.93
						Say Rs. =	2025578
						TOTAL	23268210.1
						SAY	2.32 CR

ABSTRACT 23
CLEANING RIVER BED

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	1 BDA 1	4.50	Cu.Mt.	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum , including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete. (Spec.No. : Bd.A.1/Page No.259) Including dewatering	107.00	Rs. One Hundred and seven only	1950.00
2	Bd- A-1 /259	4.50	Cu.Mt.	Transportation of material obtained from debris of various sorts including necessary excavation/ loosing including loading, unloading and conveying and disposing as directed. (e) For 5 Km.	267.00	Rs. Two hundred and sixty seven only	6066.90
						Total Rs. =	8016.90
						Say Rs. =	8017

ABSTRACT 24
FOOTPATH DETAIL

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
1	Bd- A-1 /259	0.68	Cu.Mt.	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 m. beyond the building area and stacking or spreading as directed, preparing the bed for the foundation and necessary back filling, ramming, watering, including shoring and strutting as necessary complete. (Spec.No. : Bd.A.1/Page No.259)Lift upto 1.5 M I -1A)i P -1	102.00	Rs. One Hundred Two Only.	69.36
2	Bd-A -14/ 264	0.38	Cu.Mt.	Providing soling using 80 mm size granite / quartzite / gneiss / trap metal in 15 cm. layer including hand packing filling voids with sand / grit, ramming, watering complete.(Spec. No. : As directed by Engineer-in-charge. Spec. No. : Bd.A. 14/Page No. 264 (I -10 P-2)	771.00	Rs. Seven Hundred seventy one Only.	292.98
3	Bd- E-1 / 287	0.15	Cu.Mt.	Providing and laying in situ, cement concrete M-15 of trap/ granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood/steel formwork, compacting, finishing uneven and honeycombed surface, curing etc. complete. The Cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (Wooden centering will not be allowed.) Spec. No. : Bd.E. 1/Page No. 287/I S. 456 (2000) I -24 P- 5)	3915.00	Rs.Three thousand nine hundred fifteen Only.	587.25
4	Bd/A-10 P- 262	0.05	Cu.Mt.	Filling in plinth and floors with approved excavated materials in 15 cm. to 20 cm. layers including watering and compaction complete.(Spec. No. : Bd.A. 10/Page No. 262) (I -7 P - 2)	51.00	Rs. Fifty One Only.	2.55
5	Bd/A -11 /263	0.05	Cu.Mt.	Filling in plinth and floors with contractors approved material / murum / in 15cm. to 20cm. layers including watering and compaction complete. (Spec. No. : Bd.A. 11/Page No. 263) (I -8 P - 2)	542.00	Rs. Five Hundred Fourty Two Only.	27.10
6	47 BDW 16	0.63	Cu.mt.	Transportation of material obtained from debris of various sorts including necessary excavation/ loosing including loading, unloading and conveying and disposing as directed. For 5km (Spec.No.: As directed by Engineer- in-charge.) (I -473 P - 66)	267.00	Rs. Two Hundred Sixty Seven Only.	168.21

Sr. No.	Item Code	Quantity	unit.	Description	Rate	In word	Total
7		1.50	Sq.Mt.	Providing and fixing 60mm thick factory made Hydraulically pressed Mechanically vibrated and compacted precast inter locking cement concrete paving blocks in M-40 grade of approved size and shape as specified 50 mm in gray cement and top surface 10 mm in white cement with coloured pigment including cost of all materials, manufacturing, curing, transportation of blocks to work site including loading, unloading and stacking as directed, laying paving blocks in position over prepared bed of sand of 50 mm thickness including necessary excavation in all stratas, spreading blinding of fine sand over the prepared bed, compacting blocks by plate vibrator etc. complete. Spec.No.: As directed by Engineer- in-charge. (L-155 P-27)	620.00	Rs. Six Hundred Twenty Only.	930.00
						Total Rs. =	2077.45
				Add Miscellenious including drip irrigation 1 %			20.77
							2098.22
						Say Rs. =	2098

NAGPUR MUNICIPAL CORPORATION

PENCH PROJECT CELL

Augmenting to Water Supply of Nagpur City, Pench-IV Laying of Proposed Pure Water Feeder Mains

Name of Work:- Proposed Pipe Line Crossing at Ramdaspath Nallah for 1100 dia pipe.
(Length 20 m)

DETAILED ESTIMATE

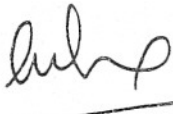
ABSTRACT 25

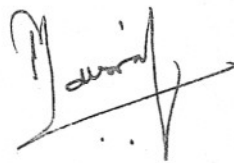
Estimated Cost Rs 915400.00

(As per PWD/MJP CSR 2011-12)

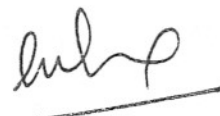
Qty.	Unit	DESCRIPTION OF ITEM	Rate	Amount
1	2	3	4	5
19.32	Cum	ITEM NO. 1 Excavation for foundation in earth, soils of all types, sand, gravel and soft murrum, including shoring and strutting as necessary and disposing off excavated stuff within lead of 100 m as directed etc. complete. (i) Lift upto 1.5 m. (As Per PWD CSR 2011-12, 1 BR 3A1, Page No. 191)	131.25	2536
38.64	Cum	ITEM NO. 2 Excavation for foundation in hard murrum, including shoring and strutting as necessary and disposing off excavated stuff within lead of 100 m as directed etc. complete. (i) Lift above 1.5 m to 3.00 m depth (As Per PWD CSR 2011-12, 4 BR 3B, Page No. 192)	176.40	6816
28.98	Cum	ITEM NO. 3 Excavation for foundation in hard murrum and boulders including shoring and strutting as necessary and disposing off excavated stuff within lead of 100 m as directed etc. complete. (i) Lift above 3.00 m to 4.5 m (As Per PWD CSR 2011-12, 5 BR 3C, Page No. 192)	195.30	5660
9.66	Cum	ITEM NO. 4 Excavation for foundation in soft rock including shoring and strutting as necessary and disposing off excavated stuff within lead of 100 m as directed etc. complete. (i) Above 3 to 6 m (As Per PWD CSR 2011-12, 6 BR 3D, Page No. 192)	320.25	3094
2.14	Cum	ITEM NO. 5 Providing and laying in situ, cement concrete in M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood, steel form work, compacting, finishing uneven and honeycombed surface curing etc. complete. The cement mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. (As Per PWD CSR 2011-12, 11 BR 5F, Page No. 195)	3507.00	7512

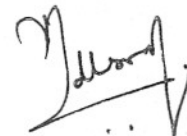
Qty.	Unit	DESCRIPTION OF ITEM	Rate	Amount
1	2	3	4	5
		ITEM NO. 6 Providing and laying in situ cement concrete of required grade of trap/ granite/quartzite/gneiss metal for R.C.C.raft/columns as per detailed design and drawings or as directed, including steel centering, plywood/steel formwork, compacting, finishing uneven and honeycombed surface with C.M.1:3 of sufficient minimum thickness to give smooth and even surface or roughening the surface if special finish is to be provided and curing ect. complete. Including use of plastisizer wherever necessary as directed by Engineer (excluding reinforcement, including cover block). The cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic tarpaulin etc. (Wooden centering will not be allowed)		
28.50	Cum	(i) For Footing (AS PER PWD CSR 2011-12, 15 BR 5C, Page No. 198)	4462.50	127181.25
		ITEM NO. 7 Providing and fixing in position reinforcement of various diameters for RCC pile caps, footings, foundations, slabs, beams and columns, canopies, staircases, newels, chajjas, lintels, pardies, coping, fins, arches etc. as per detailed design and drawings and schedules including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required completed.		
1.16	M.T.	(i) For TMT/HYSD steel Bars (As Per PWD CSR 2011-12, 35 BR 35, Page No. 206)	57256.50	66371.2
		ITEM NO. 8 Providing and fabricating structural steel plate girder including fabrication of built up section as per detail design and drawing including cutting, fabricating erecting hoisting, fixing in position, making riveted /bolted / weld connection and including two coat of red oxide and two coat of oil paint of approved quality etc. complete		
4.99	M.T.	(As Per PWD CSR 2011-12, 68, Page No. 221)	100380.00	500662


 LEE CAPC



Qty.	Unit	DESCRIPTION OF ITEM	Rate	Amount
1	2	3	4	5
350.00	Cum	ITEM NO. 9 Providing, constructing coffer dam in river basin / dam storages as per type design including excavation, filling, the middle portion with B.C. soil (in gunny bags if required). Providing impervious / sempervious materials on bothside of B.C. soil (in gunny bags if required) including ramming, compacting to the satisfaction of Engineer-in-charge, till the complection of work including dismenteling coffer dam after completion of works and disposing off the material as directed by the Engineer-in-charge. (As Per MJP CSR 2011-12, Sr. No. 1 , Page No. 249)	519.75	181912.5
20.00	Rmt	ITEM NO. 10 Dewatering the excavated trenches and pools of water in the building trenches / pipelind trenches, well works by using pups and other devices including disposing off water to safe distance as directed by Engineer-in-charge (including cost of machinery, labour, fuel), etc. complete. (As Per MJP CSR 2011-12, Sr. No. 15, Page No. 251)	681.45	13629
		TOTAL		915373
		SAY		915400


EECPPC)



NAGPUR MUNICIPAL CORPORATION NAGPUR

Rejuvenation of Nag River

Name of work :- Providing, lowering , laying & jointing of Sewer Mains in Nag River for Central Zone

Abstract 26 A

Estimated cost Rs.

291450000.00

Reference to CSR

As per Latest MJP-CSR-2011-12

Description	Quantity	Unit	Rate (Rs.)	Amount
A Sewer mains				
A-1: Providing and laying of gravity sewer in Nag River of Central Zone				
ITEM No. 1.(i) Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete.				
0 to 1.5 m lift	35997.00	cum	138.65	4991092.00
1.5 to 3.0 m lift	3381.40	cum	151.36	511819.00
3.0 to 4.5 m lift	618.70	cum	164.07	101512.00
ITEM No. 1.(ii) Excavation for foundation / pipe trenches in hard murum including removing the excavated material upto a distace of 50 M and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete.				
0 to 1.5 m lift	4369.20	cum	154.83	676479.00
1.5 to 3.0 m lift	1665.70	cum	167.54	279070.00
3.0 to 4.50 m lift	613.70	cum	180.25	110619
ITEM No. 1.(iii) Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatreing, preparing the bed for foundation and excluding backfilling, etc. complete.				
0 to 1.5 m lift	8788.40	cum	173.32	1523170.00
1.5 to 3.0 m lift	3331.40	cum	186.03	619727.00
3.0 to 4.50 m lift	1227.40	cum	198.74	243929.00

Description	Quantity	Unit	Rate (Rs.)	Amount
ITEM No. 1.(iv) Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road by all means including removing the excavated material upto a distance of 50 M beyond area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. filling, etc. complete.				
0 to 1.5 m lift	8738.4	cum	485.29	4240614.00
1.5 to 3.0 m lift	3331.40	cum	508.39	1693664.00
3.0 to 4.50 m lift	1227.40	cum	531.50	652367.00
ITEM No. 1.(v) Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by any other means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding back filling, etc. complete.				
0 to 1.5 m lift	8738.4	cum	905.87	7915811.00
1.5 to 3.0 m lift	3331.40	cum	928.97	3094784.00
3.0 to 4.50 m lift	1277.40	cum	952.08	1216191.00
ITEM No. 2 A) For Non-water logged area 0 to 1.5 m lift Open timbering in trenches of depth more than 1.5 m for shoring and strutting including use of and waste of all necessary timber works including walling, strutts, open polling boards / horizontal sheeting, runners, etc. as may be necessary and fixing and removal asurements to be taken of the face/area timbered) A) For Non-water logged area				
0 to 1.5 m lift				
1.5 to 3.5 m lift	2382.00	Sq.m	251.47	598992.00
3.0 to 4.50 m lift	594.00	Sq.m	280.14	166404.00
4.5 to 6.00 m lift	594.00	Sq.m	308.82	183438.00
6.0 to 7.5 m lift	594.00	Sq.m	337.49	200471.00
B) For water logged area		Sq.m		
0 to 1.5 m lift	7314.00	Sq.m	229.41	1677890.00
1.5 to 3.0 m lift	2382.00	Sq.m	250.36	596365.00
3.0 to 4.50 m lift	594.00	Sq.m	271.32	161163.00
3.0 to 4.50 m lift	594.00	Sq.m	292.27	173611.00
	594.00	Sq.m	313.23	186059.00

Description	Quantity	Unit	Rate (Rs.)	Amount
ITEM No. 3				
Lowering, laying and jointing in proper grade and alignment R.C.C. pipes with rubber ring joints (excluding cost of rubber ring) including cost of conveyance from stores to site of work jointing material, labour, giving satisfactory hydraulic testing etc. complete as directed by Engineer- in-charge.(For all class of pipes)				
Dia.150 mm	1230.00	M	57.35	70543.00
Dia.200 mm	210.00	M	75.00	15750.00
Dia.225 mm	694.00	M	89.34	62000.00
Dia.250 mm	197.00	M	99.26	19555.00
Dia.300 mm	1212.00	M	120.22	145705.00
Dia.350 mm	386.00	M	123.53	47682.00
Dia.400 mm	407.00	M	157.72	64191.00
Dia.450 mm		M	190.81	
Dia.500 mm	254.00	M	207.35	52667.00
Dia.600 mm	148.00	M	263.60	39013.00
Dia.700 mm		M	298.89	
Dia.800 mm	341.00	M	344.11	117342.00
Dia.900 mm	1651.00	M	379.41	626398.00
Dia.1000 mm	561.00	M	414.70	232646.00
Dia.1100 mm		M	577.93	
Dia.1200 mm		M	613.22	
Dia.1500 mm	551.00	M	682.71	376172.00
Dia.1600 mm	740.00	M	753.30	557438.00
Dia.1700 mm	723.00	M	823.88	595667.00
Dia.1800 mm	774.00	M	823.88	637685.00
Dia.1900 mm	401.00	M	894.47	358682.00
Dia.2000 mm	1579.00	M	965.06	1523822.00
Dia.2100 mm M		M	1035.64	
Dia.2200 mm M	287.00	M	1106.23	317488.00
ITEM No. 4				
Transporting within 500 meters, laying in position to correct line and level M. S. pipes with / without any outcoating, on prepared bedding in trenches including marginal cutting wherever required, assembling tack welding the same. The rate to include loading, unloading, hoisting, ect. complete as specified.				
Dia.2200 mm	39.00	M	1311.37	51144.00

Description	Quantity	Unit	Rate (Rs.)	Amount
ITEM No. 5 Manufacturing, providing and supplying spirally welded / ERW / SAW / fabricated M. S. pipes (Commercial Quality) including procurements of plates, gas cutting to required size rolling, tack welding assembling in suitable lengths to form pipes, welding on automatic welding machine and forming 'V' edge on both ends of pipes including all taxes (Central and local), railway freight, insurance unloading from railway wagon, loading into truck, transport to stores / site, unloading, stacking, etc, complete as per IS - 3589 and IS-5504 as applicable as per specifications (No negative tolerance in thickness is permissible). Dia.2200 mm	29.70	M	42109.49	1250652.00
ITEM No. 6 Gas cutting (either square cut or V cut) pipes, plates, Gas cutting (either square cut or V cut) pipes, plates, etc. of thickness 5 mm to 12 mm	2.00	M	105.88	212.00
ITEM No. 7 Welding in all positions with required number of runs, for M. S. pipes internally and / or externally including gauging wherever necessary, fixing appurtenances and other accessories in connection with pipe laying work as per specification. Lengths But Joint Plate thickness in mm 12 mm Lap jt. Plate thickness in mm 12 mm	35.00	M	832.71	29145.00
	35.00	M	506.24	17718.00
ITEM No. 8 Providing and applying with mechanical arrangement 1:3 proportion cement sand gunite, 40 to 50 mm thick to M. S. pipe surface under 2.1 kg. per sqcm. to 2.80 kg.per sqcm. pressure including removing the loose materials as directed by Engineer-in-charge and including scrapping the surface with wire brushes, degreasing, cleaning by compressed air and providing fixing BRC fabric no.14 as reinforcement, curing for 21 days, disposing off the rebound materials within a lead of 50 M, etc. complete as directed by Engineer-incharge of 50 M, etc. complete as directed by Engineer-incharge	207	Sqm	404.77	83788.00

Description	Quantity	Unit	Rate (Rs.)	Amount
ITEM No. 9 Providing and making inner cement mortar lining to M.S. pipes with mechanical devices in cement mortar 1:1 proportion, including cost of all materials, labour, special sand required, machinery, power generation, all equipments and taking necessary access openings and manholes, cuts at suitable intervals as directed by Engineer-in-charge and rewelding the same after done with doubler plates pipes including necessary excavation, refilling concrete breaking and remaking if any, breaking guniting and remaking the same, repainting wherever required with epoxy paint in 3 coats, all dewatering including emptying the pipeline and refilling the same after done with (water to be supplied by department free of cost within 5 km. lead at fixed point and all other arrangements to be done by agency), including carrying out "C" value performance test of pipeline, complete job as per the directions of the Engineer-in-charge.				
12 mm thick	285.00	sqm	368.38	104987.00
ITEM No. 10 Providing ISI standard stoneware pipes including all taxes (Central and local), inspection charges, railway freight, unloading from railway wagons, loading into trucks, transport to departmental stores, unloading, stacking etc. complete. Dia.150 mm Dia.200 mm Dia.225 mm Dia.250 mm Dia.300 mm		M M M M M	151.91 205.24 247.82 277.95 327.04	
ITEM No. 11 Providing ISI standard R.C.C. pipes in standard lengths of following class and diameter suitable for either collar joints or rubber rings joints, including all taxes Central and local), inspection charges, transport to departmental stores/ site, unloading and stacking etc. complete..Pipes with internal cement mortar lining including all taxes, insurance, railway freight, unloading from railway wagon, loading into truck, transport to departmental stores / sites loading / unloading, stacking, etc, complete. Dia 150 mm Dia.200 mm Dia.225 mm Dia.250 mm				
	1283.00	M	539.96	692767.00
	214.00	M	753.77	161306.00
	788.00	M	889.06	700578.00
	201.00	M	996.57	200310.00

Description	Quantity	Unit	Rate (Rs.)	Amount
Dia.300 mm	1236.00	M	1244.20	1537830.00
Dia.350 mm	312.00	M	2089.77	652009.00
Dia.400 mm	587.00	M	2442.50	1433745.00
Dia.450 mm		M	2572.96	
Dia.500 mm	259.00	M	3336.39	864124.00
Dia.600 mm	151.00	M	3585.23	541369.00
Dia.700 mm		M	5598.90	
Dia.800 mm	348.00	M	6856.38	2386021.00
Dia.900 mm	1690.00	M	7877.11	13312313.00
Dia.1000 mm	572.00	M	10114.25	5785351.00
Dia.1100 mm		M	11010.56	
Dia.1200 mm		M	11550.51	
Dia.1500 mm	562.00	M	17220.68	9678021.00
Dia.1600 mm	763.00	M	22477.72	17150500.00
Dia.1700 mm	743.00	M	26477.72	19672946.00
Dia.1800 mm	789.00	M	30811.44	24310223.00
Dia.1900 mm	449.00	M	35811.44	16079335.00
Dia.2000 mm	1617.00	M	41811.44	67609092.00
Dia.2100 mm		M	48811.44	
Dia.2200 mm	303.00	M	56811.44	17213865.00
ITEM No. 12 Providing granular bedding with graded hard broken stone 100% passing through 20mm sieve, 20 to 50%passing through 10mm sieve and 100% retained on 6mm sieve, laying in layers of 15cm thick including ramming, consolidation etc., complete for pipe bedding	5220.00	cum	1459.50	7618564.00
ITEM No. 13 Laying of M.S cover pipes ,minimum 2.00 m below IRDP Roads, cement concrete and major roads by horizontal directional drilling method / push on method including all operations such as making pits for installation of achine, excavation starting and end point for laying of pipes etc. complete. (Including cost of cover pipe but excluding cost of inner pipe)	100.00	cum	39396.50	3939650.00
ITEM No. 14 Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.	50244.00	cum	61.76	3103270.00
ITEM No. 15				

Description	Quantity	Unit	Rate (Rs.)	Amount
Backfilling of trenches and pits with selected excavated materials brought from outside, watering, refilling and ramming with selected earth for foundation and rounding the bottom of trenches for pipe bedding, consolidation in layers of 15cms including guarding , lighting, fencing the trenches and pits, supporting public utilities such as cables, drains, service pipes, sewers etc., complete	18235.00	cum	54.04	985492.00
ITEM No. 16 Reinstating the road surface with excavation, 30 cm soling, murum blinding, 40 mm size metal, 25 mm thick premixed bitumen, carpet with hot mixed seal coat, including compacting at all stages etc. complete	100.00 100.00	sqm M	920.51 1375.00	92051.00 137500.00
ITEM No. 17 Disposal of surplus excavated stuff by truck including loading, unloading and stacking as directed lead upto 20 Km.	30017.00	cum	503.68	15119023.00
ITEM No. 18 Detecting under ground services such as telephone, electric cables, water & sewer pipe line by advance technology/ by trial pits including all operations such as installation of system, etc. complete. along the route of pipe line.				
ITEM No. 19 Dismantling dead pipeline of M.S./R.C.C./ C.I./ P.S.C. and G.I./ A. C. / P. V. C. / S. W. / H. D. P. E. pipe including cost of necessary excavation and refilling of trenches, breaking the joints, lifting the pipes and stacking to the place as directed by Engineer-in-charge with all leads and lifts including cleaning the surface, etc. complete.				
Dia.500	234.00	m	276.83	64779.00
Dia.600	148.00	m	338.60	50112.00
Dia.700		m	395.95	
Dia.800	341.00	m	166.54	56790.00
Dia.900	1583.00	m	473.15	749001.00
Dia.1000	561.00	m	555.87	311844.00
Dia.1500	551.00	m	1173.51	646602.00
Dia.1600	696.00	m	1873.51	1303961.00
Dia.1700	658.00	m	2673.51	1759168.00
Dia.1800	439.00	m	3573.51	1568770.00
Dia.1900	29.00	m	4573.51	132632.00
			Total A-1Rs.	276834247.00

Description	Quantity	Unit	Rate (Rs.)	Amount
<u>A-2: Man hole Chambers</u>				
ITEM No. 1 Providing and constructing on sewer, B.B. masonry circular manhole concentric cone 1.2 M dia. at bottom and 0.5 M dia. at top and upto a depth of 2.00 M with 23 cm brick work in CM 1:4 proportion excluding excavation including foundation concrete 250 mm thick and haunches and channels in c.c.1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56 cm.dia. etc. complete as directed by Engineer-in-charge.				
Depth up to 1.5 M	20.00	No	11125.15	222503.00
Depth up to 2.0 M	20.00	No	13236.14	264723.00
ITEM No. 2 Providing and constructing on sewer, B.B. masonry circular manhole concentric cone 1.5 M dia. at bottom and 0.5 M dia. at top and upto a depth of 5.00 M with 23 cm brick work up to depth of 2 M from top and 35 cm thick brick work for balance depth in CM 1:4 proportion with 20 mm thick smooth plaster on both side in cm 1:2 proportion excluding excavation including foundation concrete 250 mm thick and haunches and channels in c.c.1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56 cm.dia. etc. complete as directed by Engineer-in-charge.				
Depth up to 2.0 M	7.00	No	22124.58	154872.00
Depth up to 2.5 M	20.00	No	27049.11	540982.00
Depth up to 3.0 M	7.00	No	31973.65	223816.00
Depth up to 3.5 M	8.00	No	36898.19	295186.00
Depth up to 4.0 M	30.00	No	41822.73	1254682.00
Depth up to 4.5 M	9.00	No	46747.27	420725.00

Description	Quantity	Unit	Rate (Rs.)	Amount
ITEM No. 3 Providing and constructing on sewer, B.B. masonry circular manhole with concentric cone 1.5 M dia. at bottom and 0.5 M dia. at top and upto a depth of 9.00 M with 23 cm brick work, upto depth of 2 M from top and 35 cm thick brick work for depth of 2 M and 45 cm thick brick work for remaining depth upto 9 M in CM 1:4 proporpion with 20 mm thick smooth plaster on both sides in CM 1:2 proportion excluding excavation, including foundation concrete 250 mm thick and haunches and channels in c.c.1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56 cm.dia. etc. complete as directed by Engineer-in-charge.				
Depth up to 5.5 M	15	No	63471.94	952079.00
Depth up to 6.0 M	15	No	69587.64	1043815.00
Depth up to 6.5 M	5	No	75703.33	378517.00
Depth up to 7.0 M		No	81819.02	
Depth up to 7.5 M		No	87934.71	
Depth up to 4.5 M	21	No	46747.27	981693.00
Depth up to 6.0 M	3	No	69587.64	208763.00

Description	Quantity	Unit	Rate (Rs.)	Amount
ITEM No. 5 Providing and constructing on sewer, B.B. masonry circular manhole with concentric cone 2.4 M dia. at bottom and 0.5 M dia. at top and upto a depth of 9.00 M with 23 cm brick work, upto depth of 2 M from top and 35 cm thick brick work for depth of 2 M and 45 cm thick brick work for remaining depth upto 9 M in CM 1:4 proportion with 20 mm thick smooth plaster on both sides in CM 1:2 proportion excluding excavation, including foundation concrete 250 mm thick and haunches and channels in c.c.1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56 cm.dia. etc. complete as directed by Engineer-in-charge.				
Depth up to 3.0 M	20	No	31973.65	639473.00
Depth up to 4.5 M	20	No	46747.27	934945.00
Providing and constructing on sewer, B.B. masonry circular manhole with concentric cone 3.0 M dia. at bottom and 0.5 M dia. at top and upto a depth of 9.00 M with 23 cm brick work, upto depth of 2 M from top and 35 cm thick brick work for depth of 2 M and 45 cm thick brick work for remaining depth upto 9 M in CM 1:4 proportion with 20 mm thick smooth plaster on both sides in CM 1:2 proportion excluding excavation, including foundation concrete 250 mm thick and haunches and channels in c.c.1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56 cm.dia. etc. complete as directed by Engineer-in-charge.				
Depth up to 4.5 M	13	No	46747.27	607714.00
ITEM No. 7 Providing and fixing in position steel fibre reinforced concrete (S.F.R.C.) frame and covers of approved make including loading, unloading, transportation, all taxes, etc. complete as directed by Engineer-in-charge (20 tonnes capacity)				
	279	No	2688.92	750208.00
			Total of A 2)Rs.	9874696.00

Description	Quantity	Unit	Rate (Rs.)	Amount
A-3) Providing chairs , encasing , thrust blocks to <u>sewer mains</u>				
ITEM No. 1 Providing and laying in situ following grades of C.C. trap / granite / quartzite / gneiss metal for bedding including dewatering form work, compacting and curing, finishing etc., complete	221	cum	3177.72	702276.12
ITEM No. 2 Providing and laying in situ Cement concrete of trap/ granite/ quartzite / gneiss metal for RCC work in foundation like raft, grillage, strip foundation and footing of RCC columns and steel stanchions including normal dewatering, formwork, compaction, finishing and curing, In RCC M20 0 - 1.50 m depth 1.5 - 3.0 m depth 3.0 - 4.50 m depth	55.00 21.50 25.00	cum cum cum	4477.20 4477.20 4611.52	246246.00 96259.80 115287.90
ITEM No. 3 Providing and laying RCC (M20) for encasing RCC pipes including the cost for required formwork, reinforcement and curing etc., complete In RCC M20 0 - 1.50 m depth 1.5 - 3.0 m depth 3.0 - 4.50 m depth 49.32 cum 4451.76 219563 4.5 - 6.00 m depth 6.0 - 7.50 m depth	110.47 85.33 85.33	cum cum cum cum	4477.20 4477.20 4611.52 4611.52	494596.28 382039.48 393500.66
ITEM No. 4 Providing and fixing in position steel bar reinforcement of various diameters for RCC pipes, caps, footings , foundations, slabs, beams, columns, canopies, staircases, newels, chajjas, lintels, pargies, copings, fins, arches, etc., as per detailed designs, drawings required etc., complete (including cost of binding wire)	17	M.T	59710.56	1015079.52

Description	Quantity	Unit	Rate (Rs.)	Amount
ITEM No. 5				
Providing and constructing RCC ventilating shaft of diameters and height mentioned below with required number of RCC 15 x 15 cm size columns and RCC circular slab or dome over the pillars in M-150 including cost of all material and labour, providing and fixing steel or wooden frame & providing & fixing G.I. fly proof mesh of 26 gauge and providing and applying in 3 coats of oil paint to wooden or steel frame and cement paint to concrete structure. etc. complete as directed by Engineer-in-charge.				
	10.00	No	8933.65	89336.52
			Total of A- 3)Rs.	3534622.28
<u>A-4) Providing coffer dam to divert flow of river</u>				
ITEM No. 1				
Providing, constructing cofferdam in river basin/ dam storage as per type design including excavation, filling the middle portion with B.C. soil (in gunny bags if required). Providing impervious / semi pervious material on both side of B.C. soil (in gunny bags if required) including ramming, compacting to the satisfaction of Engineer-in-charge, till the completion of work including dismantling cofferdam after completion of works and disposing off the material as per direction of Engineer-incharge	1875.00	cum	545.95	1023648.75
ITEM No. 2				
Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by Engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.	2888	bhphr	61.76	178374.43
			Total of A- 4)Rs.	1202023.18
Total of A1 A- 4				291445588.46
Say Rs.				291450000.00

NAGPUR MUNICIPAL CORPORATION NAGPUR

Rejuvenation to Nag River

Abstract 26 B

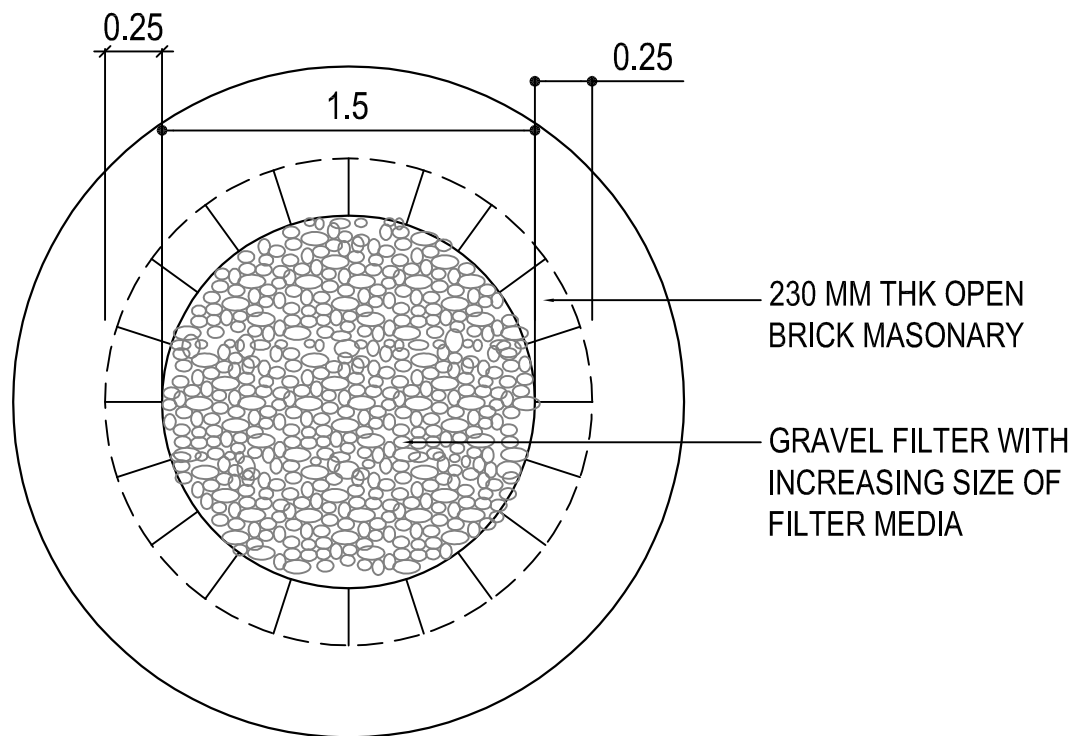
Sewage Pumping Station 2011 to2026

S.No	Description	Quantity	Unit	Rate (Rs.)	Amount (Rs.)
1	Sewage Pumping Station at (CZ 2-8)	136	lps	53,500	7,276,000
2	Sewage Pumping Station at (CZ 2-9)	33	lps	53,500	1,765,500
3	Sewage Pumping Station at (CZ 3-2)	23	lps	53,500	1,230,500
4	Sewage Pumping Station at (CZ 3-3)	1360	lps	53,500	72,760,000
5	Sewage Pumping Station at (CZ 4-1)	1850	lps	53,500	98,975,000
6	Sewage Pumping Station at (CZ 5-3)	2235	lps	53,500	119,572,500
	Total				301,579,500

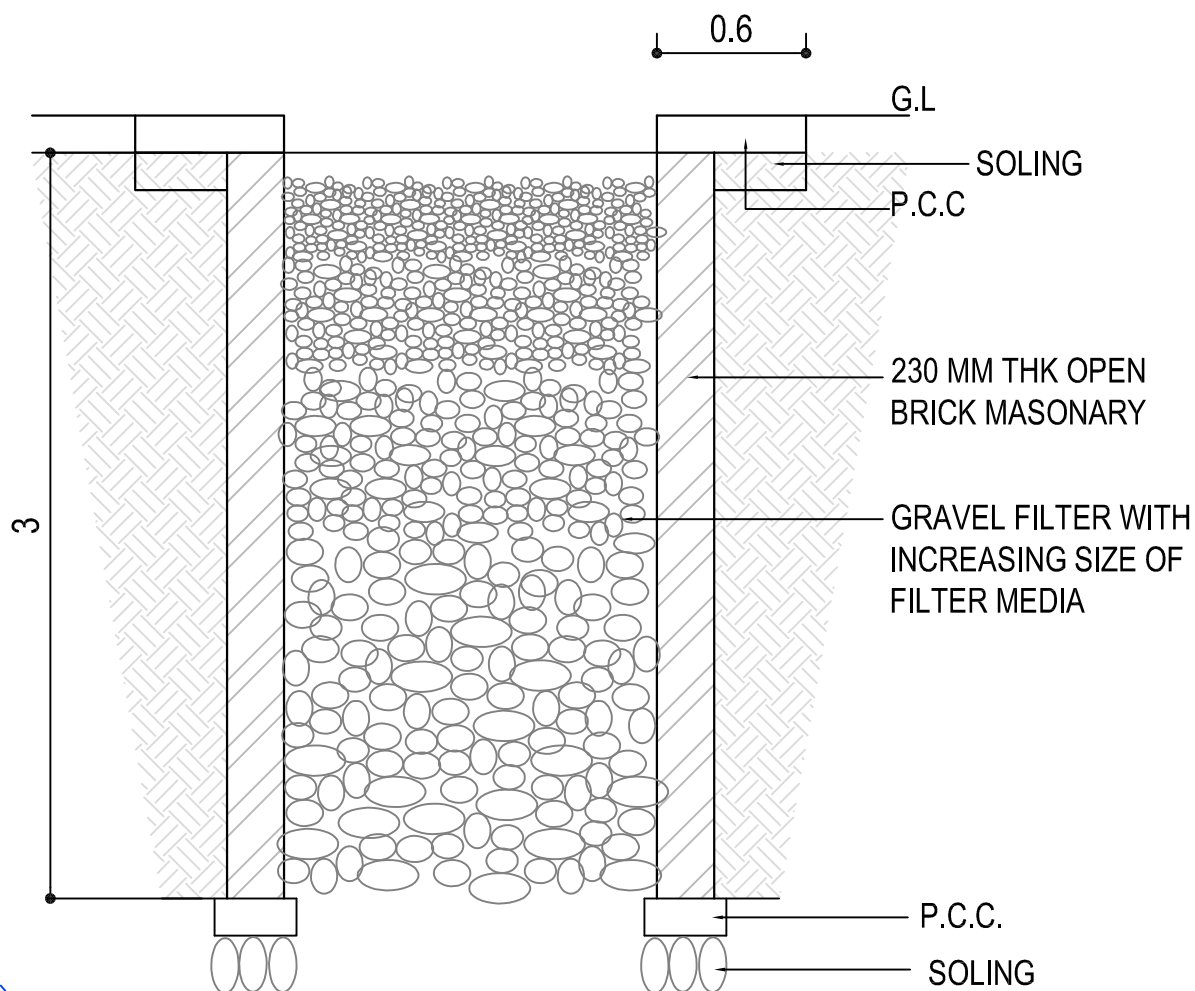
NAGPUR MUNICIPAL CORPORATION NAGPUR**Rejuvenation to Nag River****Abstract 26 C****Pumping Mains**

S.No	Description	Quantity	Unit	Rate (Rs.)	Amount (Rs.)
1	Sewage Pumping Station at (CZ 2-8) 400mm dia M.S. Pipe 10mm thick	100	m	13,575	1,357,472
2	Sewage Pumping Station at (CZ 2-9) 200mm dia D.I Pipes K-9	100	m	4,674	467,371
3	Sewage Pumping Station at (CZ 3-2) 150mm dia D.I Pipes K-9	100	m	3,899	389,919
4	Sewage Pumping Station at (CZ 3-3) 1200mm dia M.S Pipe thick 10 mm	100	m	50,629	5,062,879
5	Sewage Pumping Station at (CZ 4-1) 1400mm dia M.S Pipe thick 10 mm	100	m	58,892	5,889,199
6	Sewage Pumping Station at (CZ 5-3) 1500mm dia M.S Pipe thick 10 mm	100	m	62,858	6,285,768
	Total				19,452,607

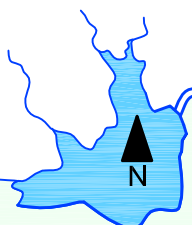
DETAIL DRAWINGS



PLAN OF THE PERCOLATION PIT



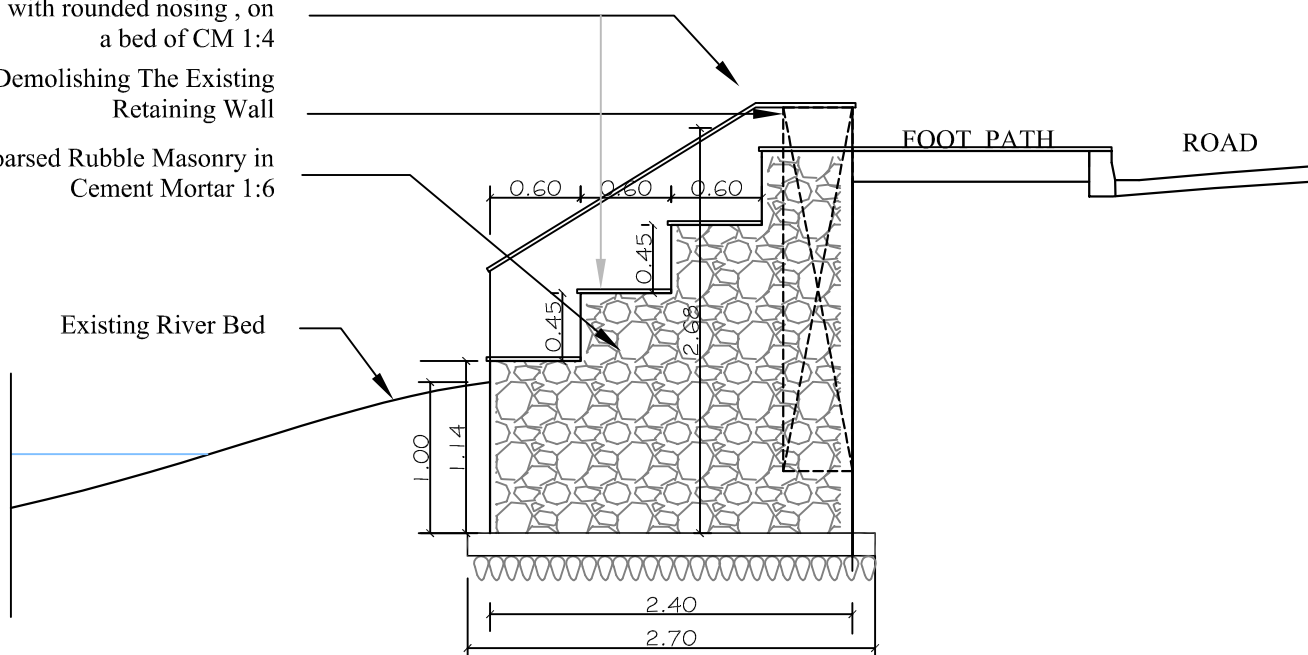
SECTION THROUGH THE PERCOLATION PIT



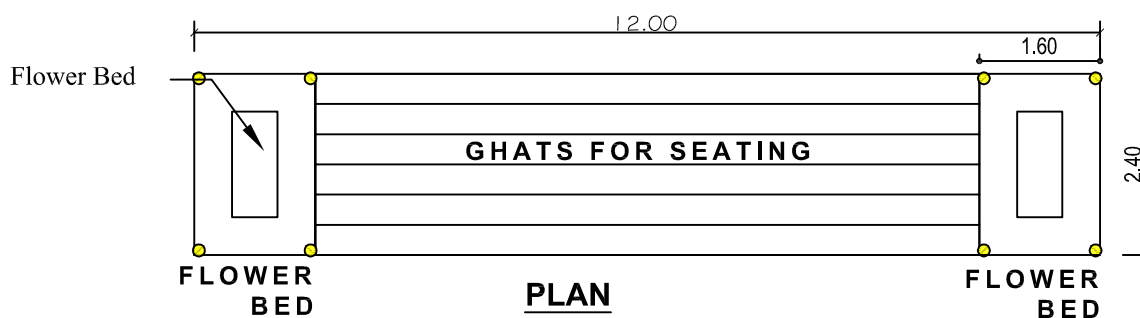
DETAIL OF PERCOLATION PIT

Uncoarsed Rubble Masonry in Cement Mortar 1:6

Existing River Bed

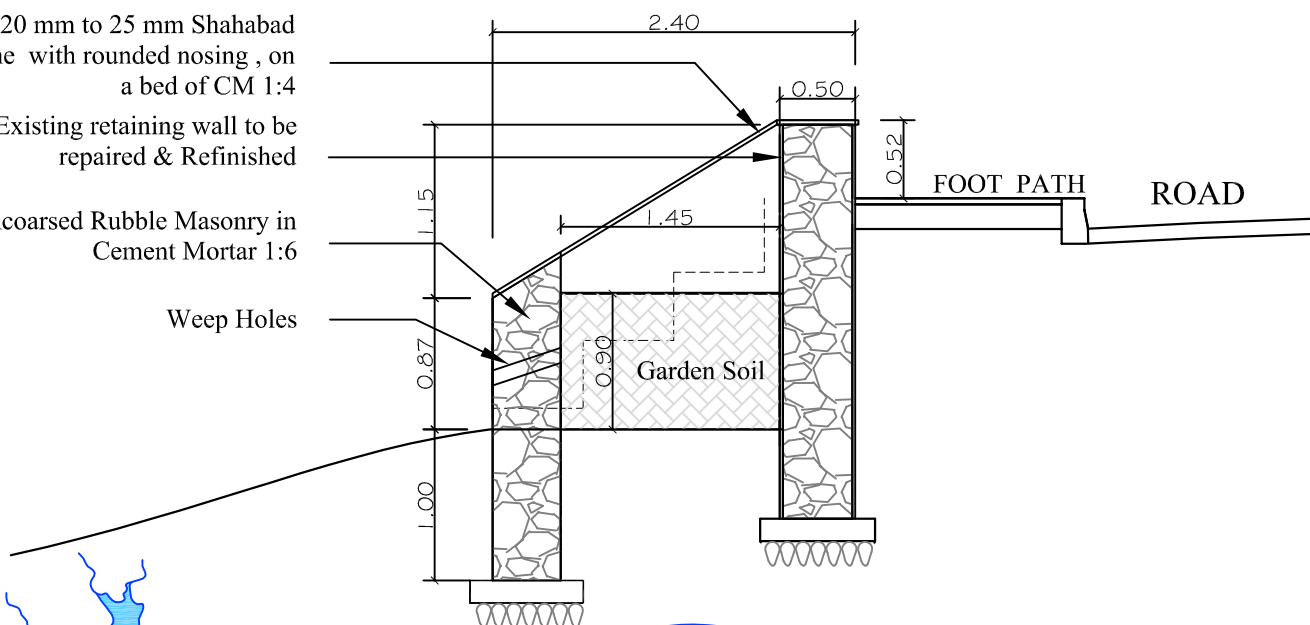


SECTION D-D

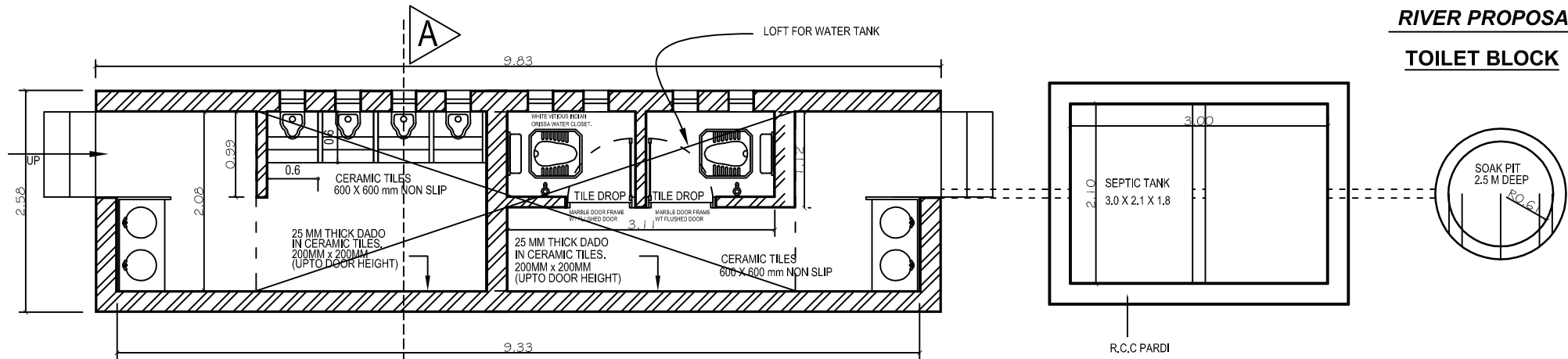


Uncoarsed Rubble Masonry in Cement Mortar 1:6

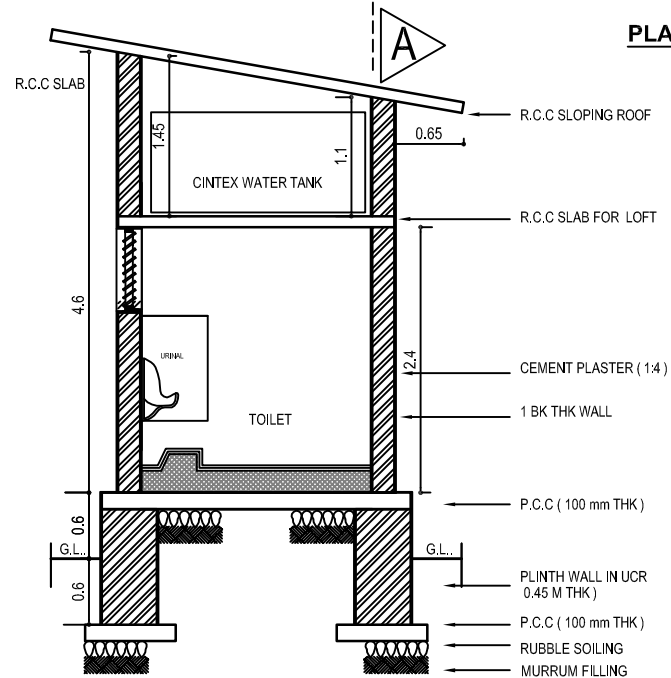
Weep Holes



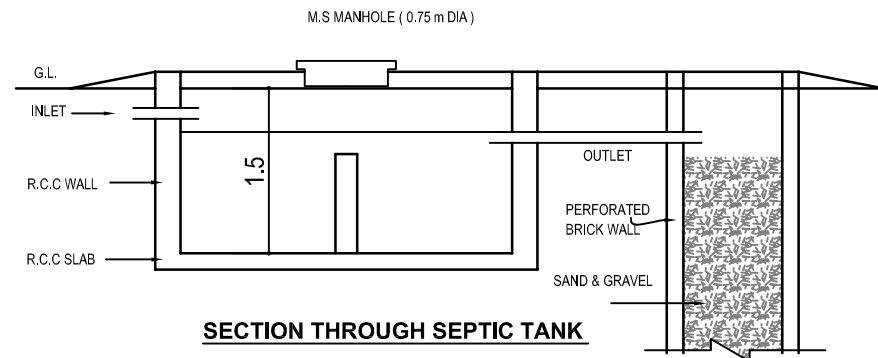
DETAIL OF GHAT



PLAN



SECTION A-A



SECTION THROUGH SEPTIC TANK



NAG RIVER - TOILET BLOCK (SMALL)

REJUUVINATION OF LAKES AND RIVERS OF NAGPUR CITY

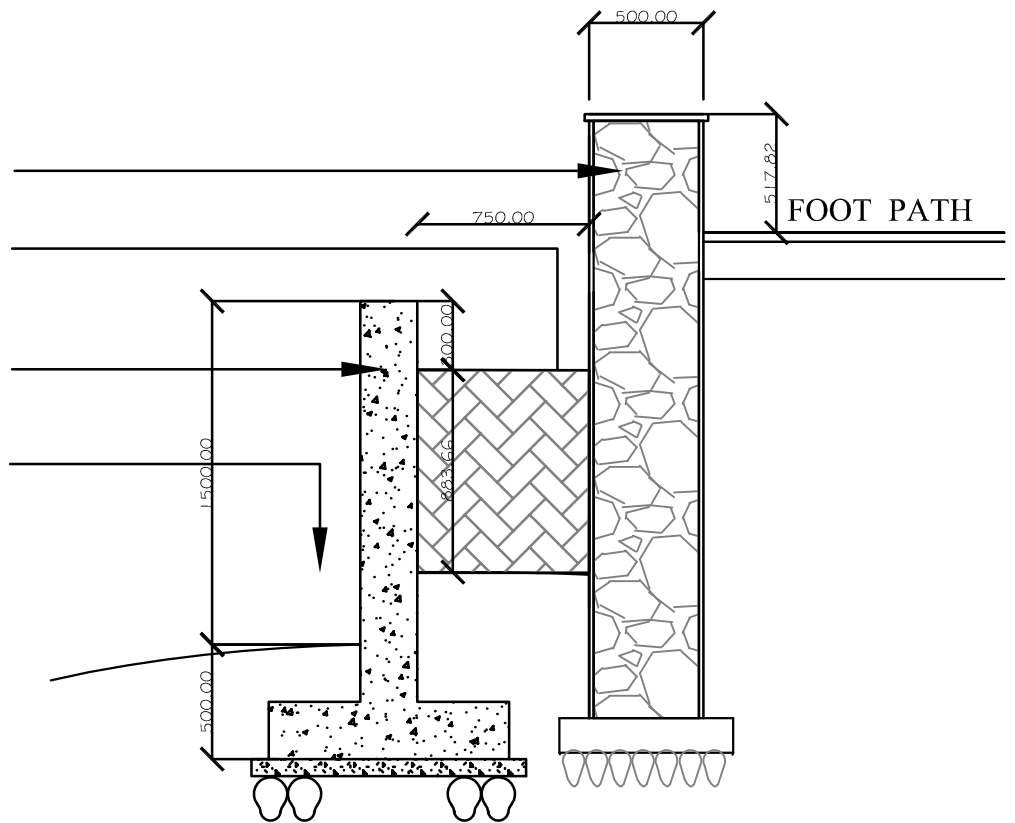
SHAH TECHNICAL CONSULTANTS (STC), DINESH RATHI AND ASSOCIATES (DRA) AND GRASSROOTS RESEARCH AND CONSULTANCY (GRC)

Existing retaining wall to be
repaired & Refinished

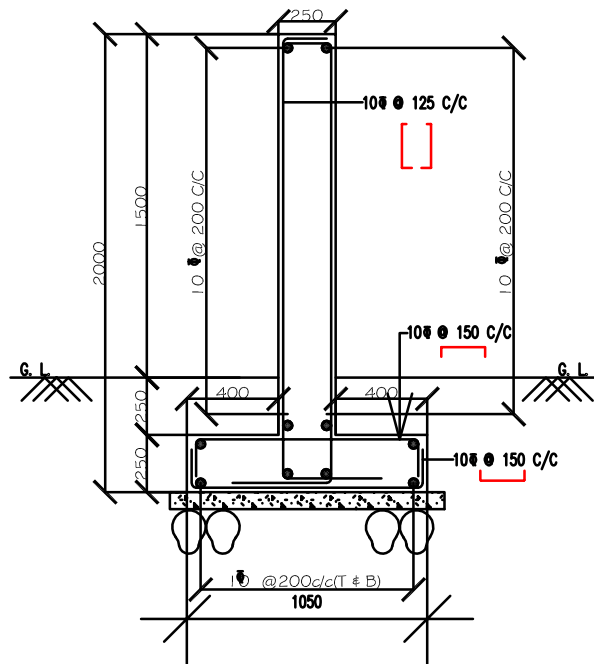
Garden Soil

R.C.C Retaining wall
(see detail - A)

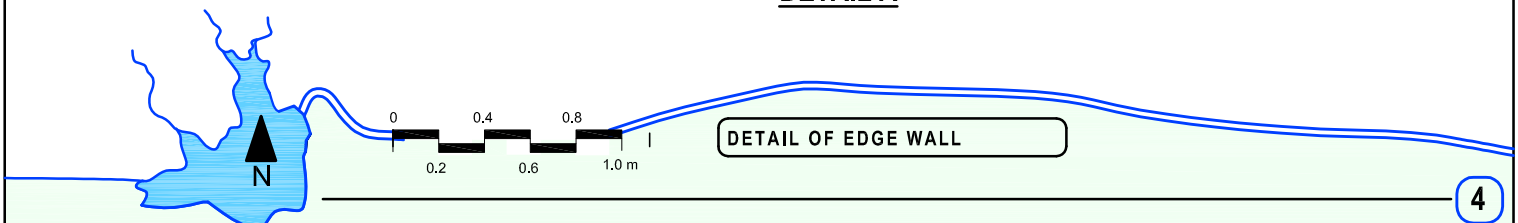
Existing River Bed

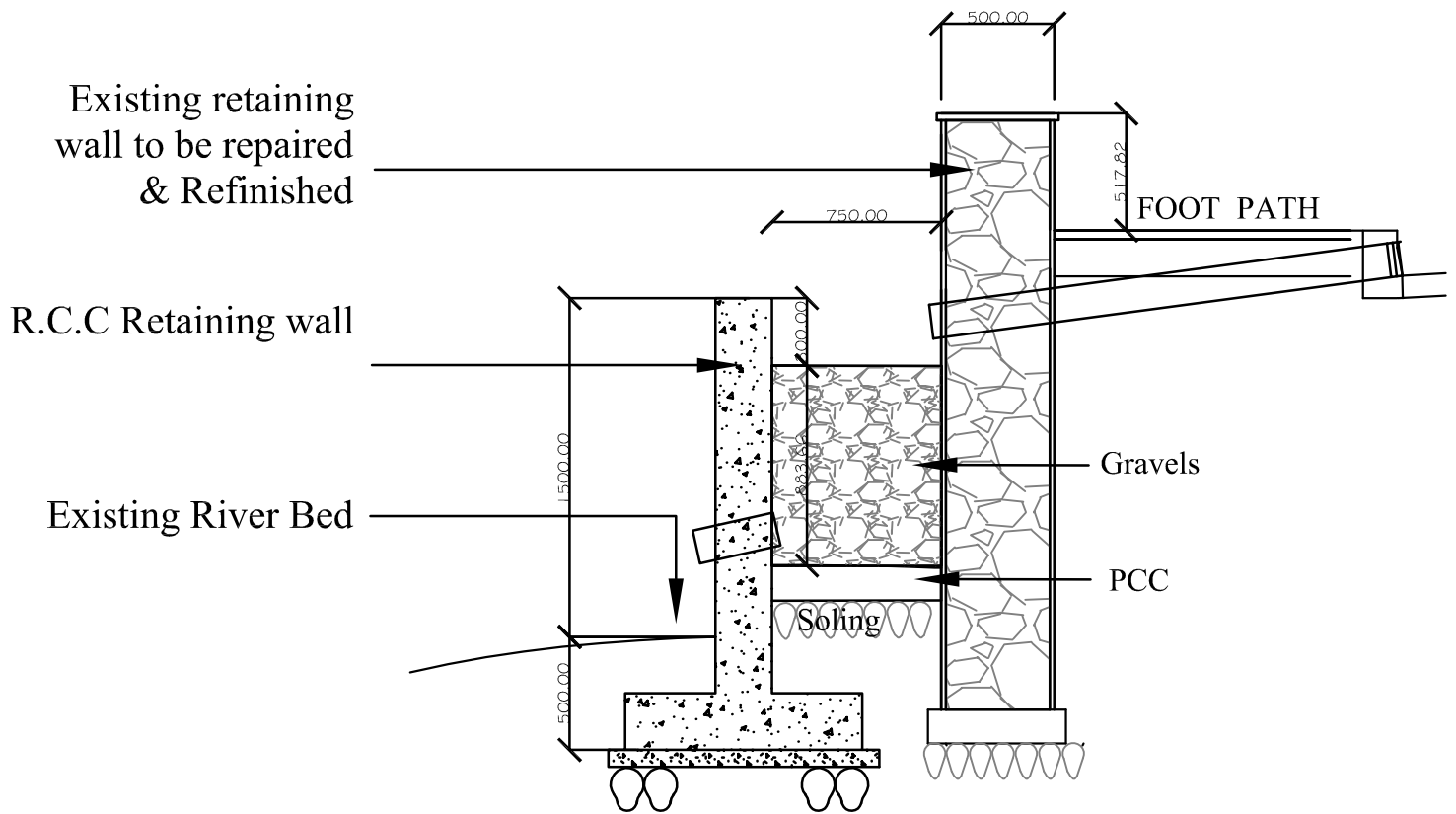


SECTION SHOWING THE DETAIL OF PROPOSED PLANTATION BED ALONG BOTH THE RIVER EDGES

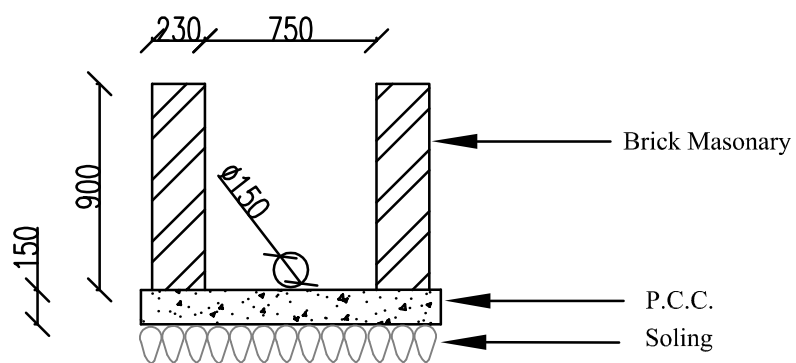


DETAIL A

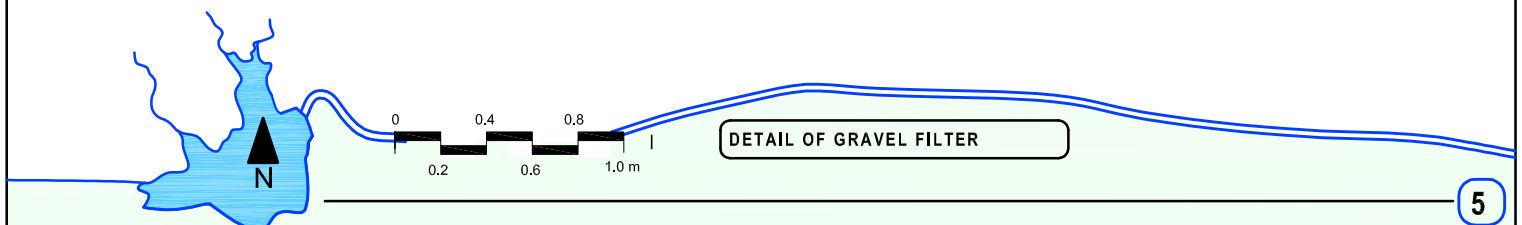


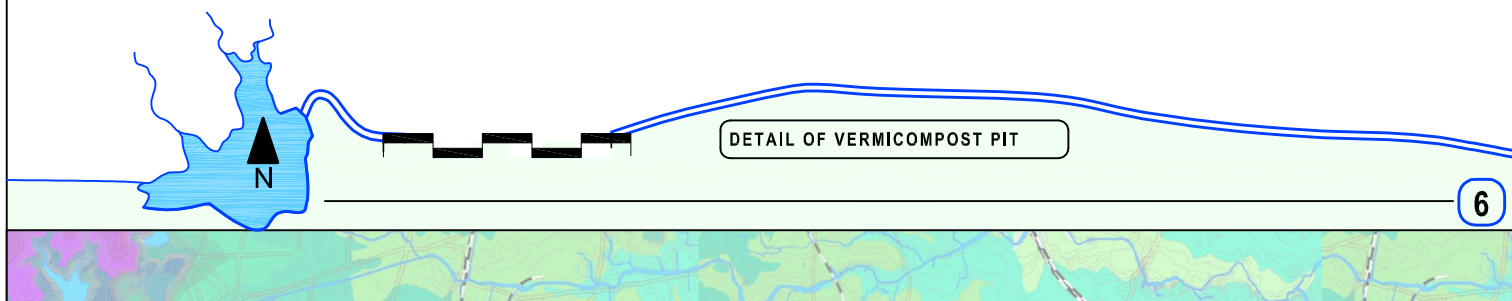
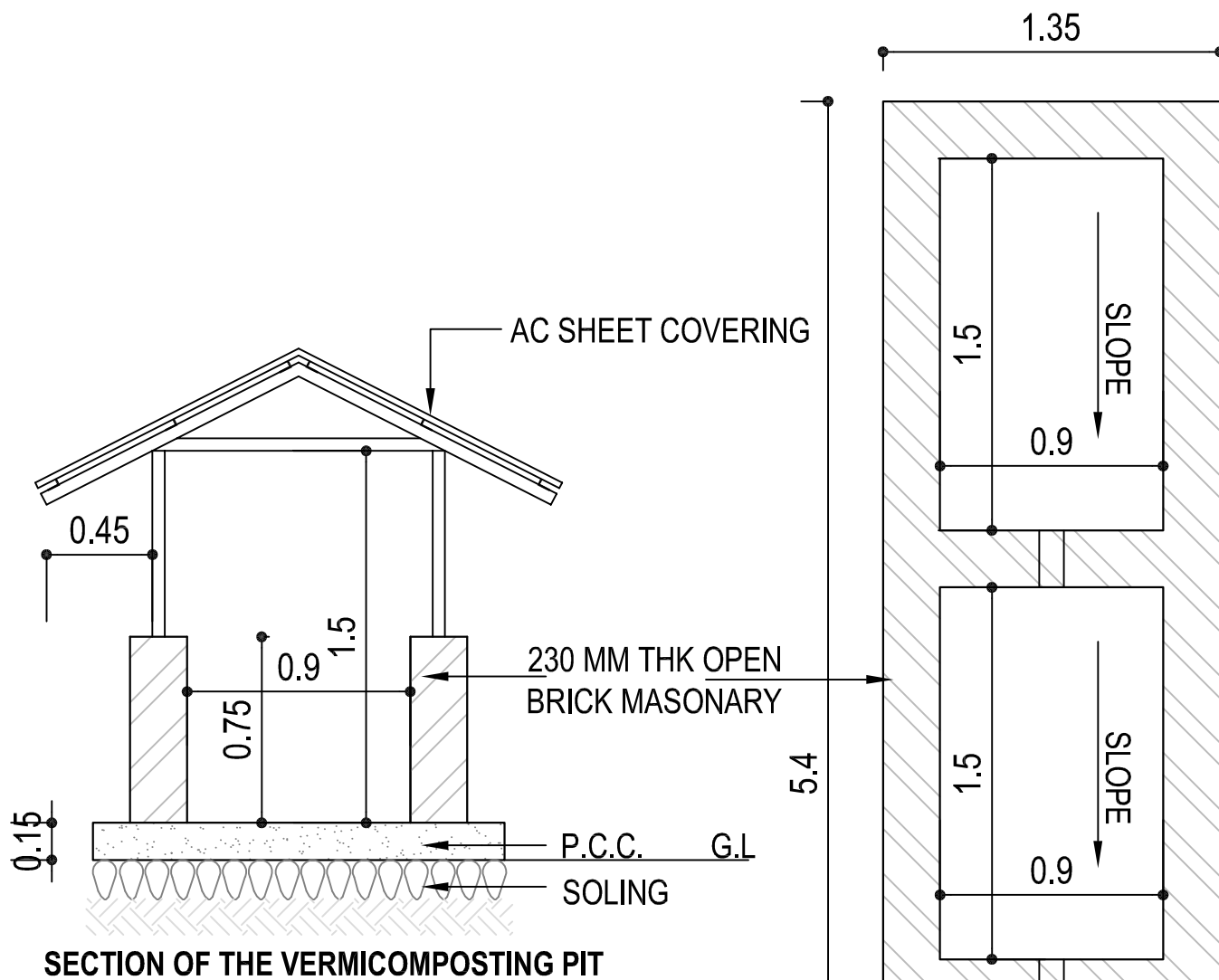


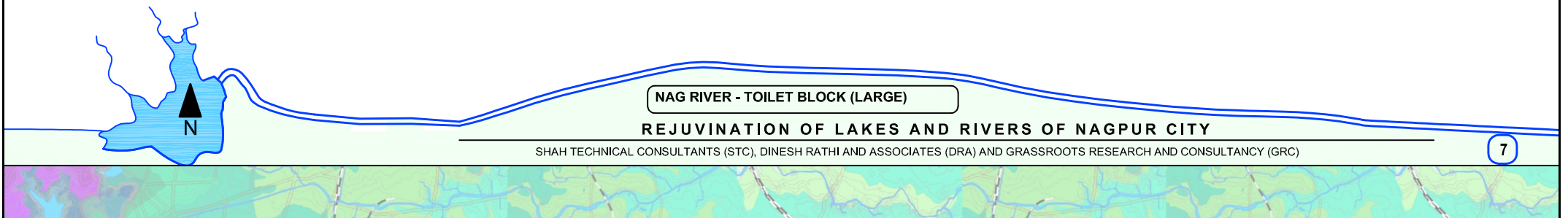
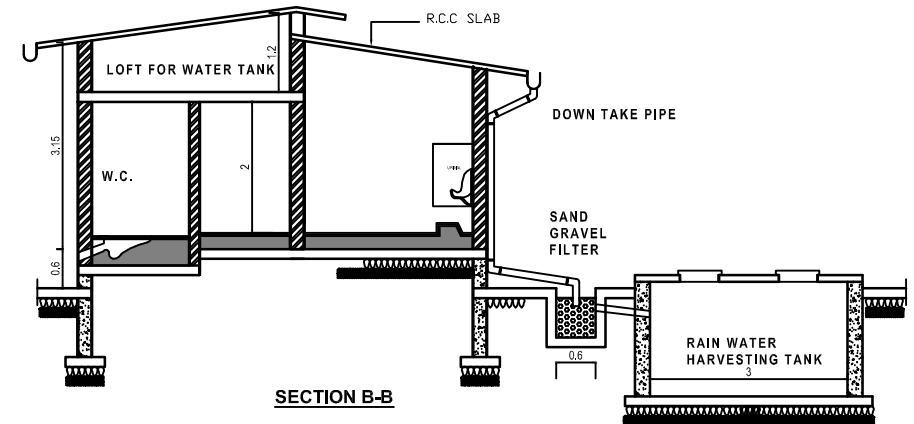
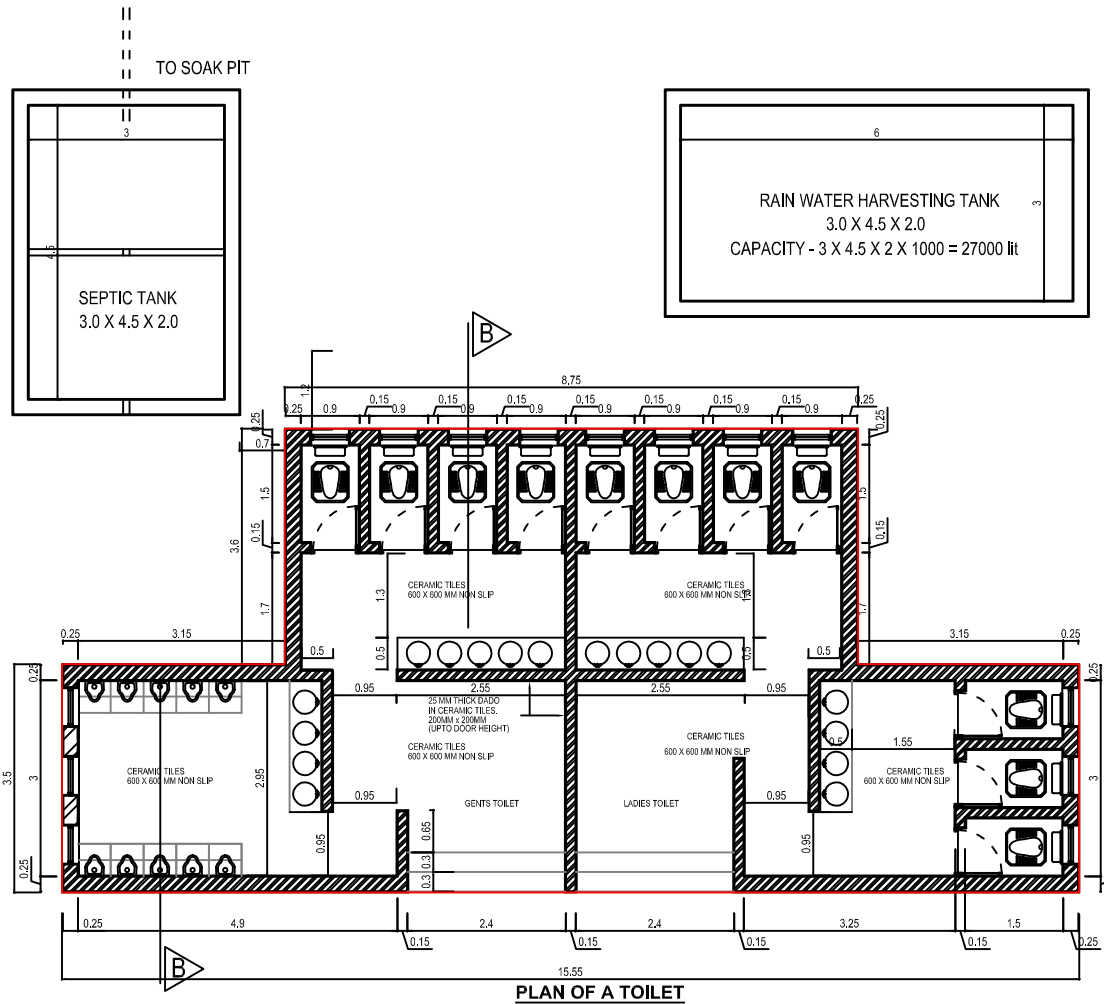
SECTION SHOWING THE DETAIL OF PROPOSED GRAVEL FILTER

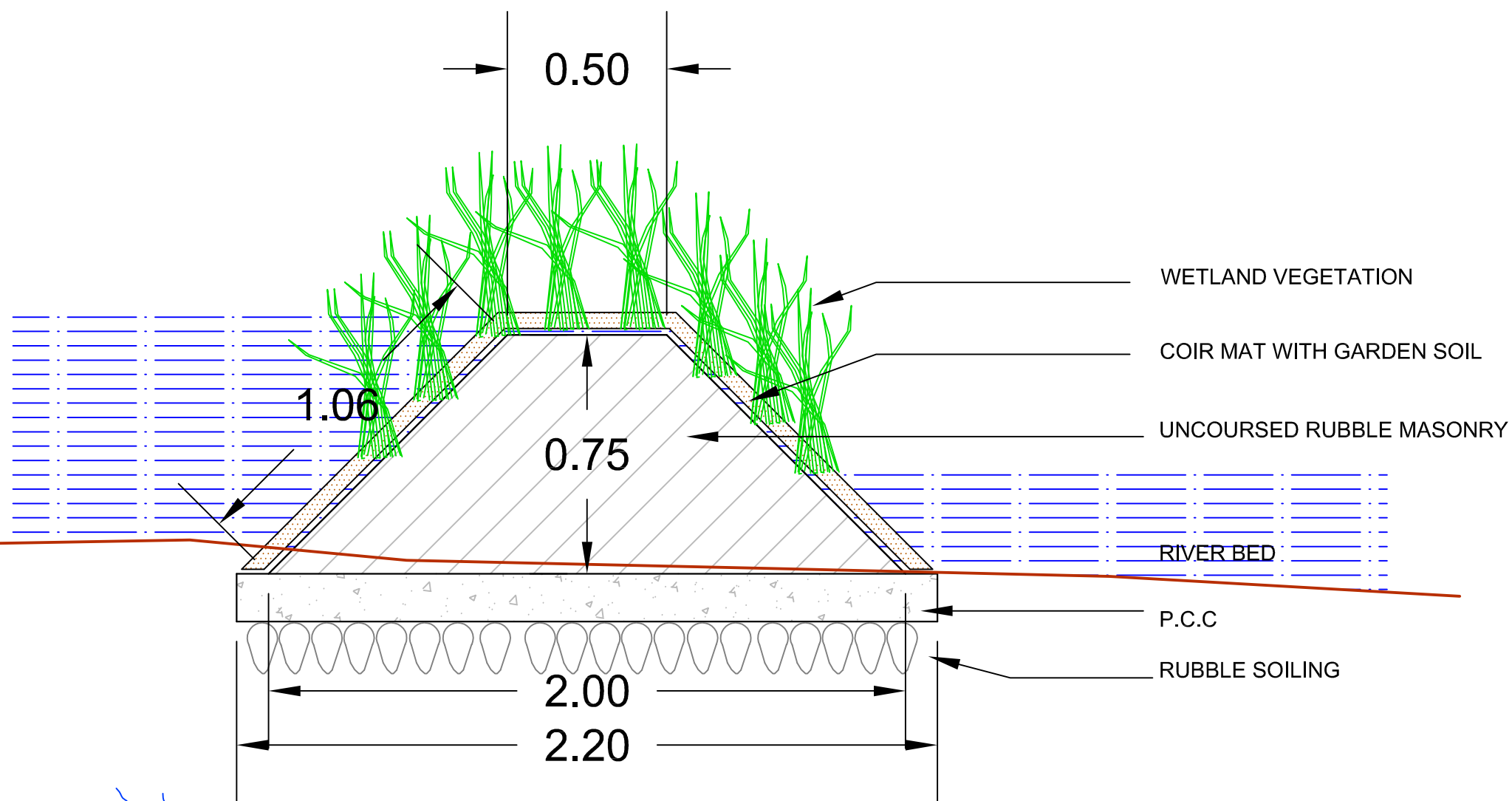


GRAVEL FILTER - FRONT VIEW





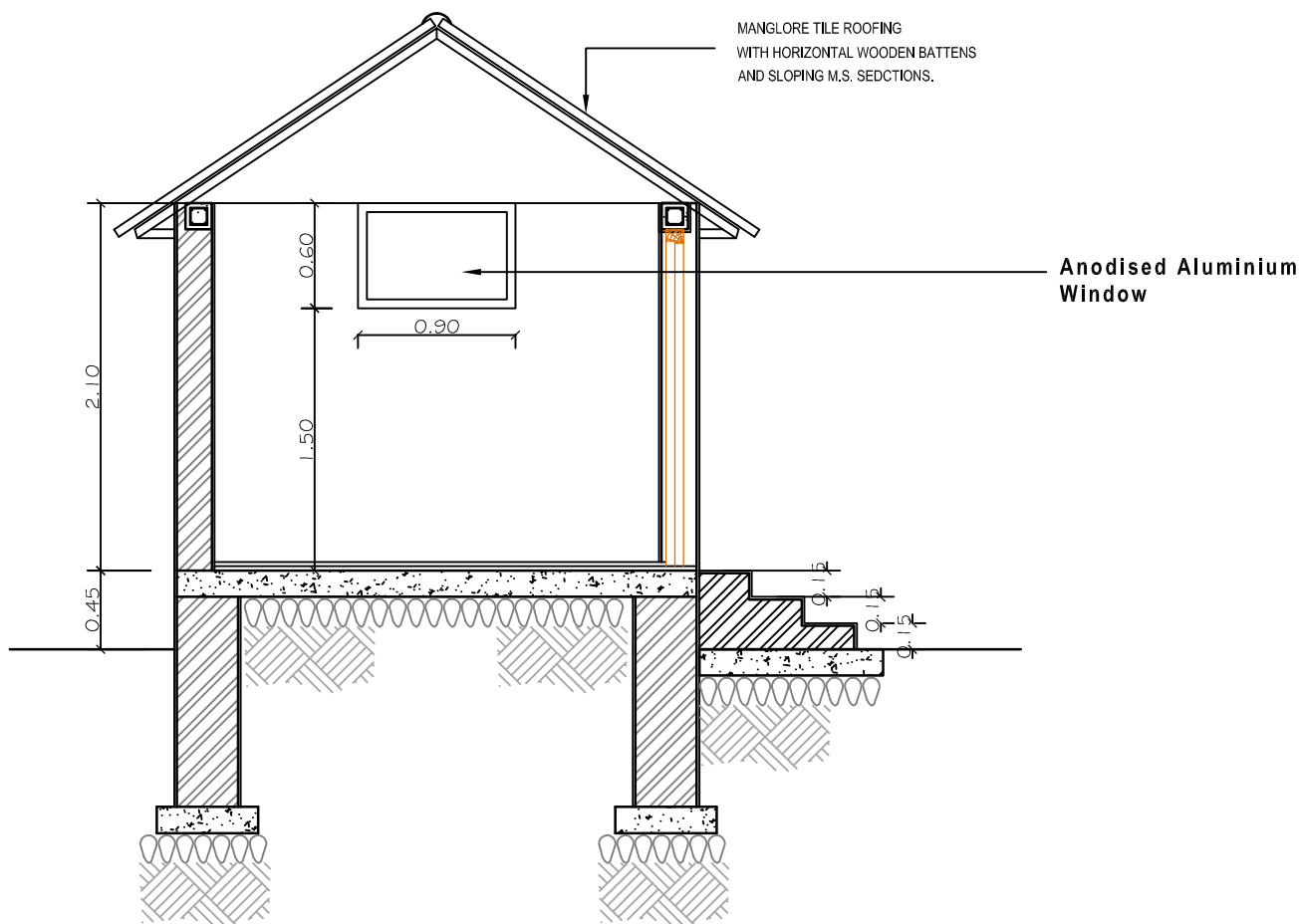




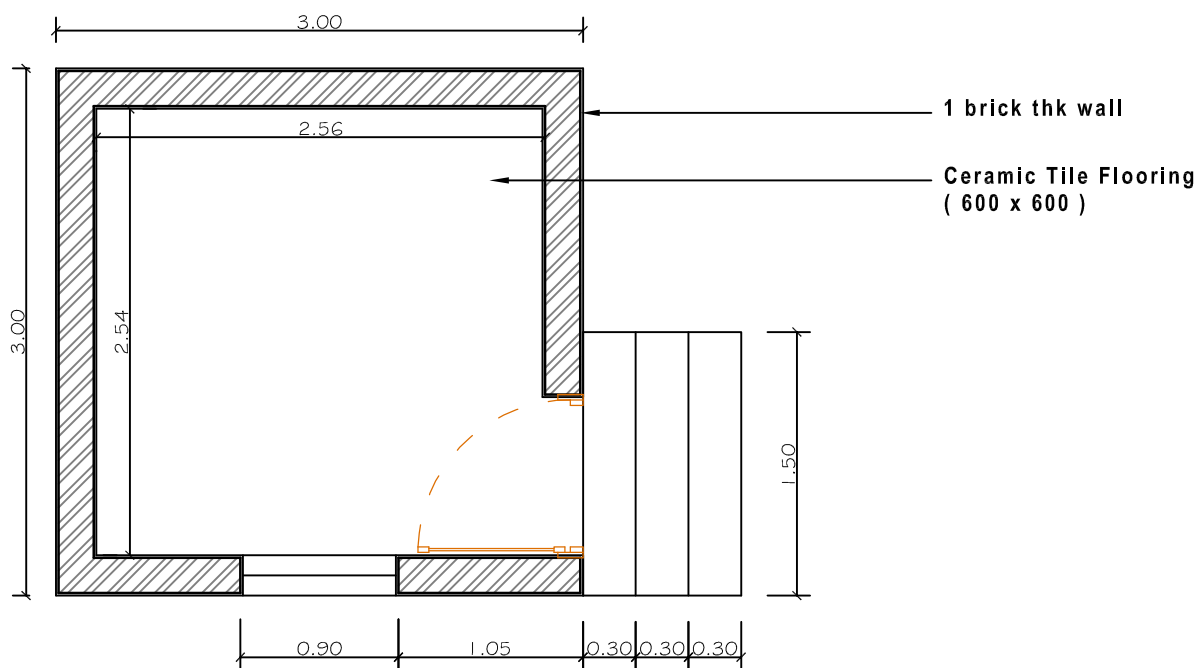
DETAIL OF A COIR BUND

REJUVINATION OF LAKES AND RIVERS OF NAGPUR CITY

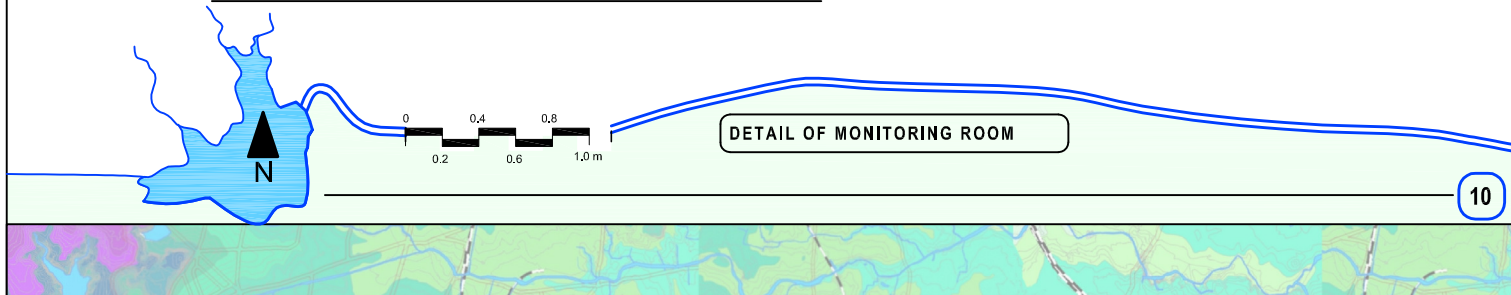
SHAH TECHNICAL CONSULTANTS (STC), DINESH RATHI AND ASSOCIATES (DRA) AND GRASSROOTS RESEARCH AND CONSULTANCY (GRC)

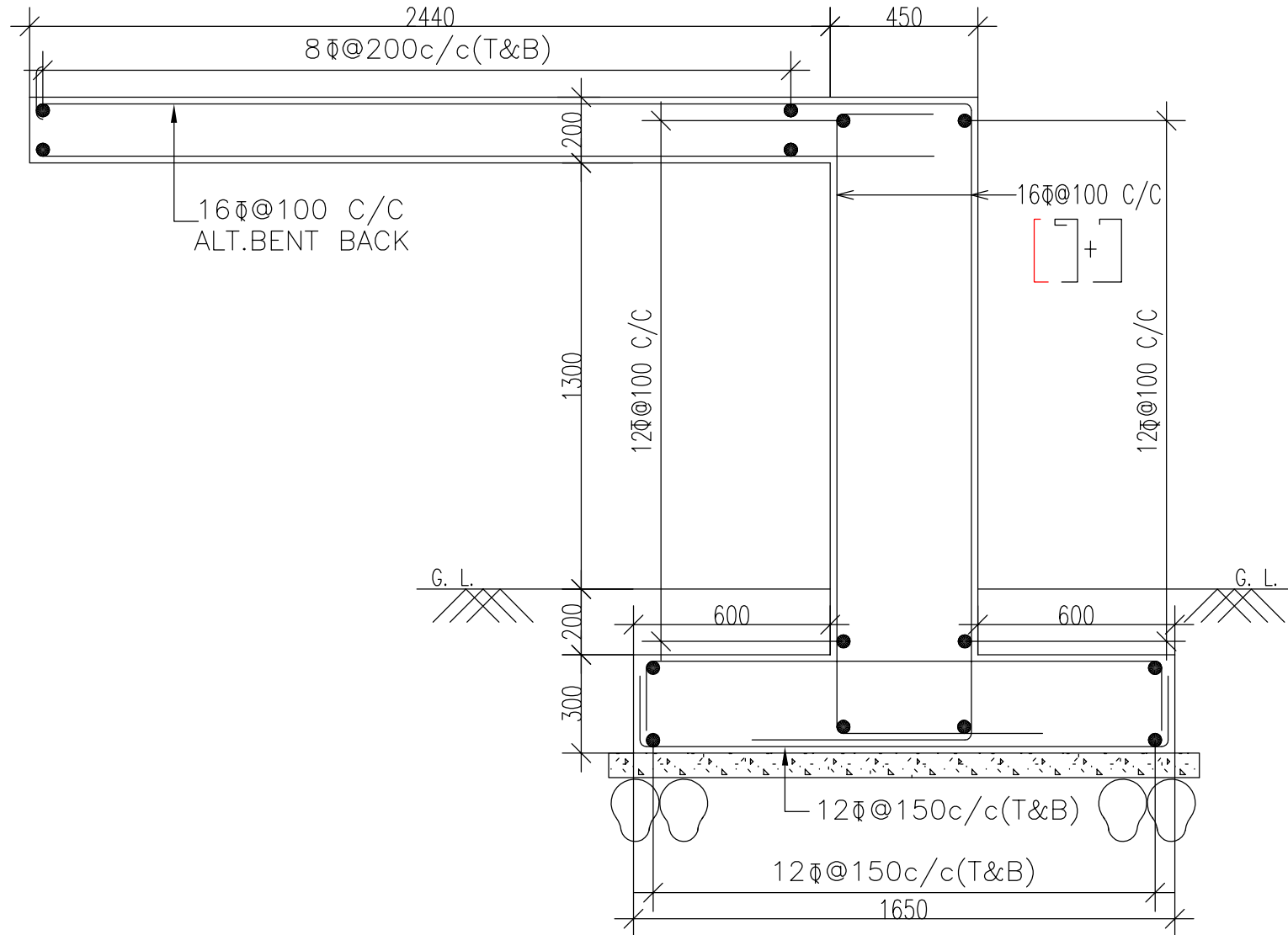


TYPICAL SECTION THROUGH MONITORING ROOM FOR THE LAKE



PLAN OF THE MONITORING ROOM FOR THE RIVER



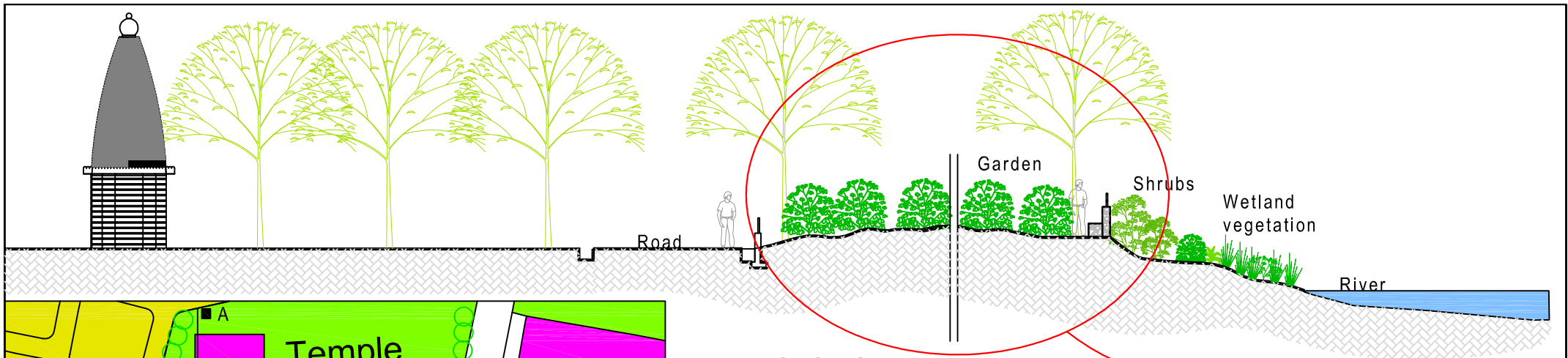


TYP. DETAILS OF DECK

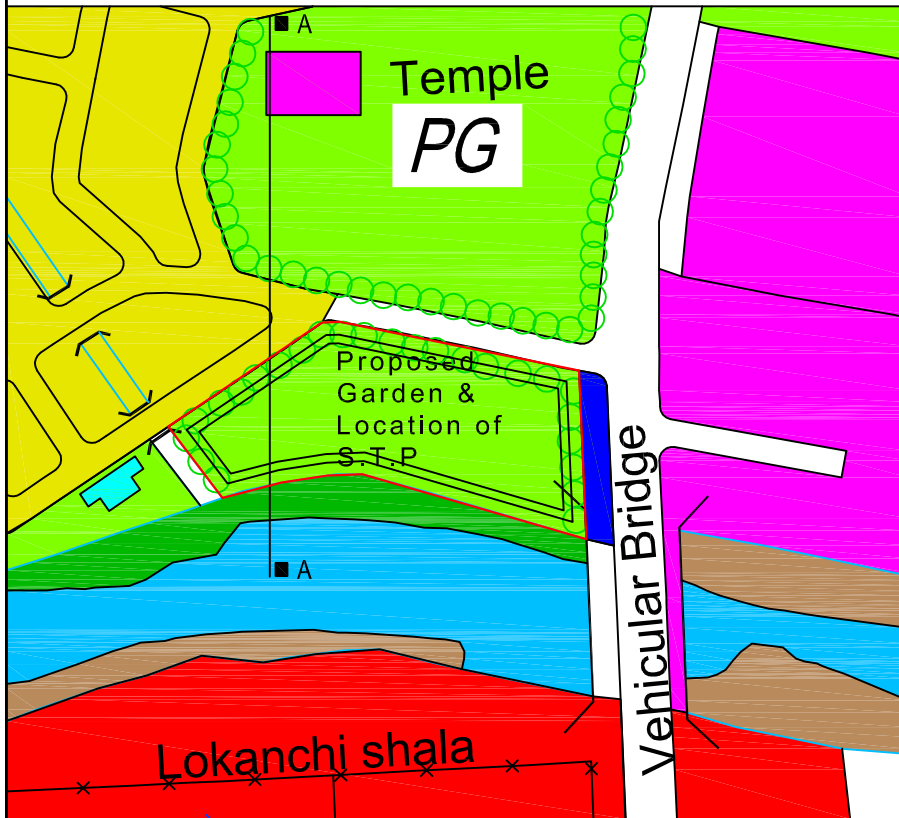
DECK ALONG RIVER EDGE

REJUVINATION OF LAKES AND RIVERS OF NAGPUR CITY

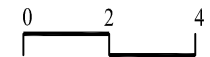
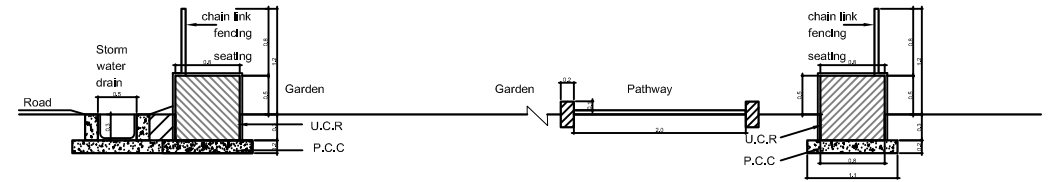
SHAH TECHNICAL CONSULTANTS (STC), DINESH RATHI AND ASSOCIATES (DRA) AND GRASSROOTS RESEARCH AND CONSULTANCY (GRC)



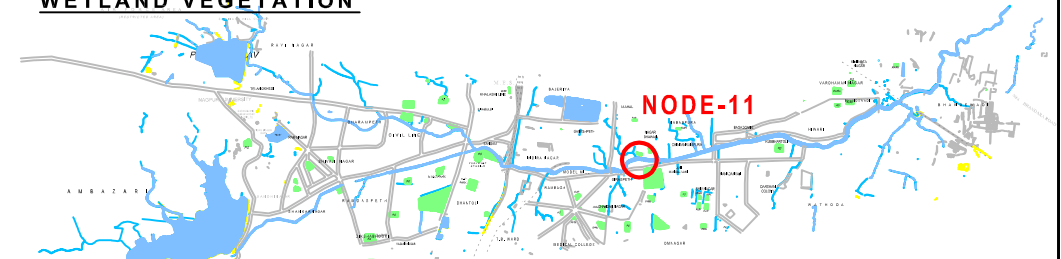
SECTION A-A



PROPOSED PLAN OF THE NODE



- TOILET**
- GARDEN**
- WETLAND VEGETATION**

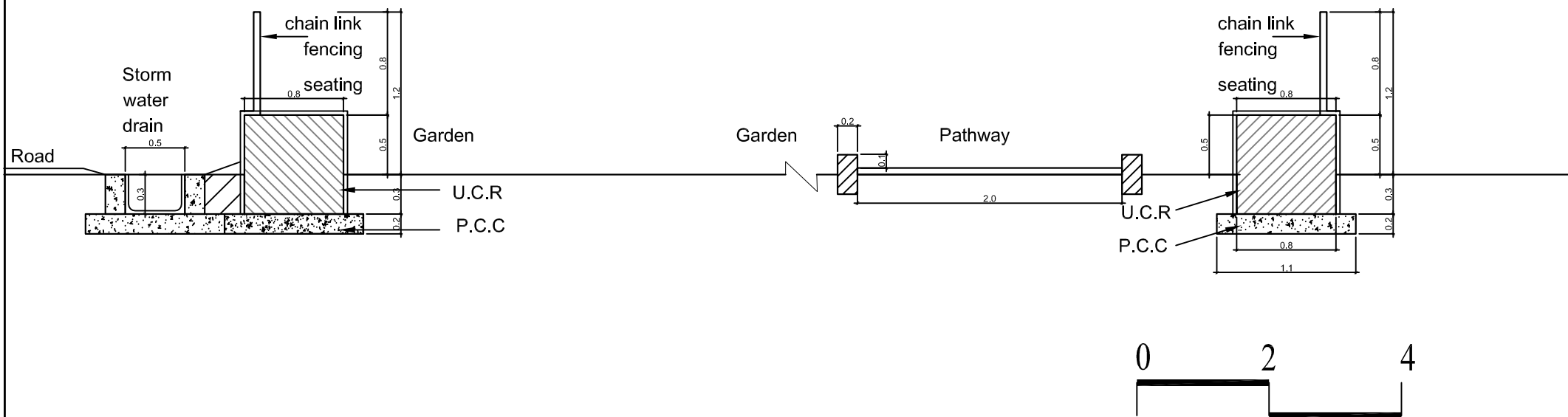


KEY PLAN FOR NAG RIVER

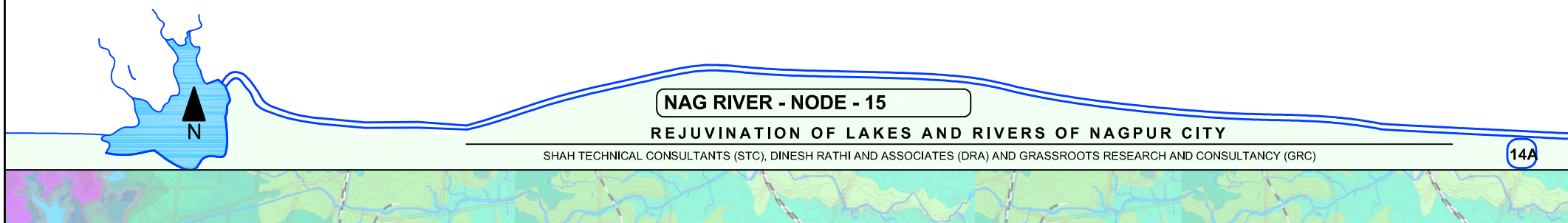
NAG RIVER - NODE - 11

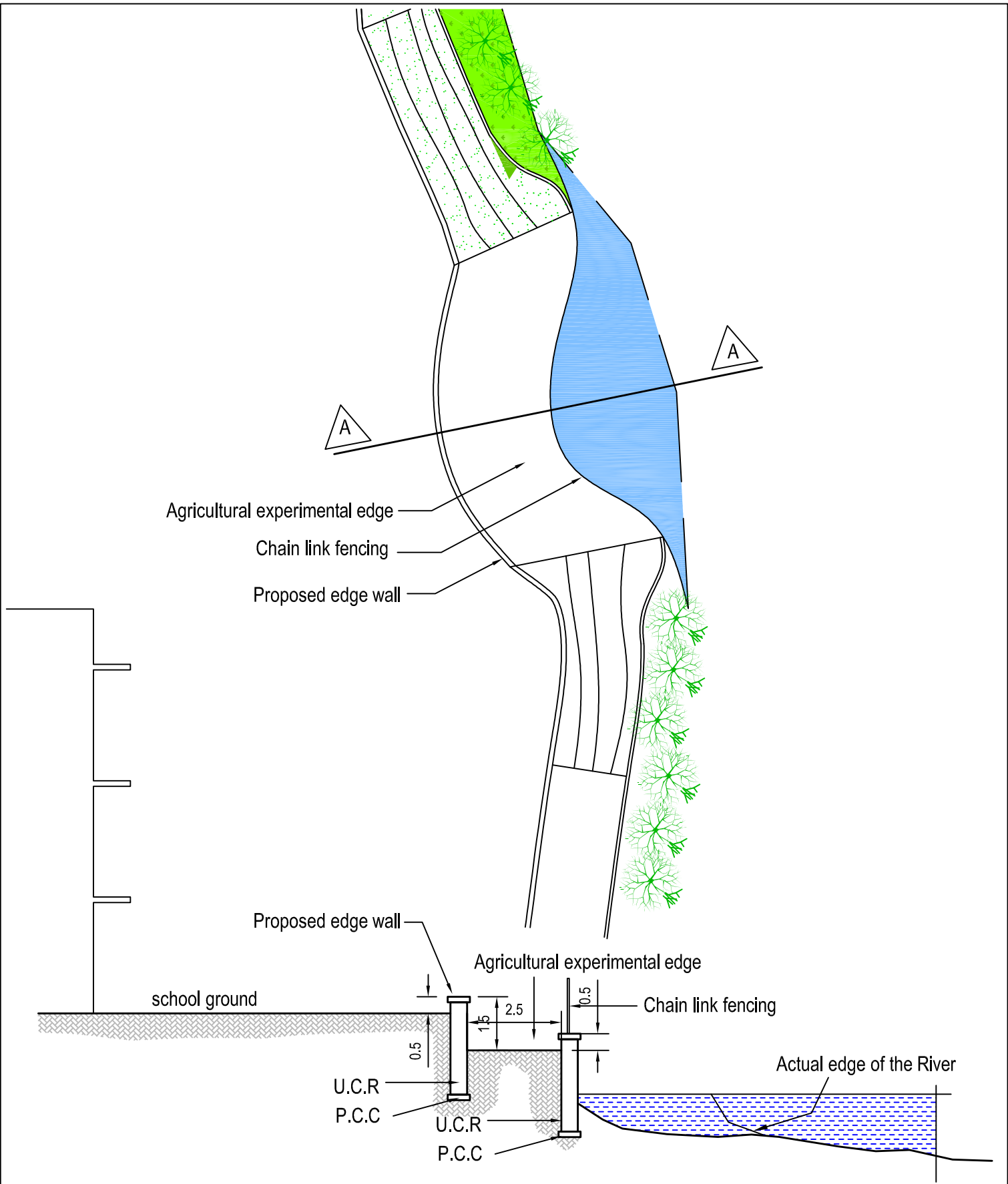
REJUVINATION OF LAKES AND RIVERS OF NAGPUR CITY

SHAH TECHNICAL CONSULTANTS (STC), DINESH RATHI AND ASSOCIATES (DRA) AND GRASSROOTS RESEARCH AND CONSULTANCY (GRC)

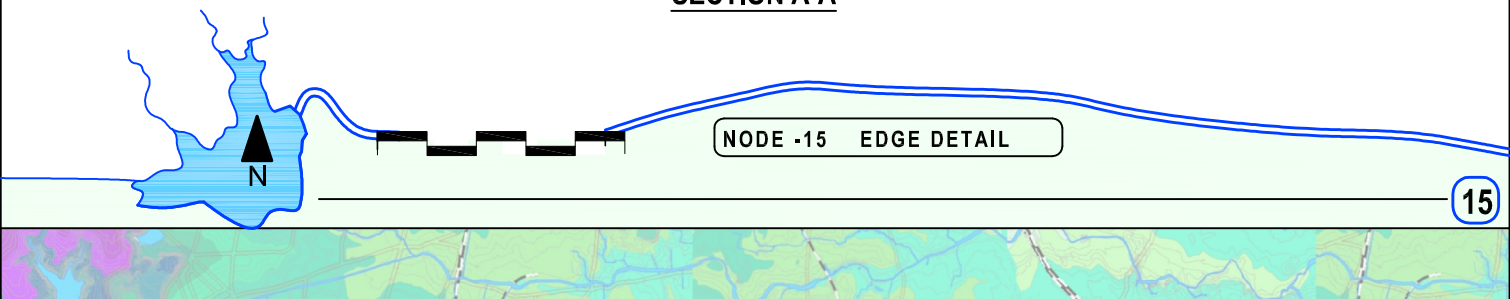


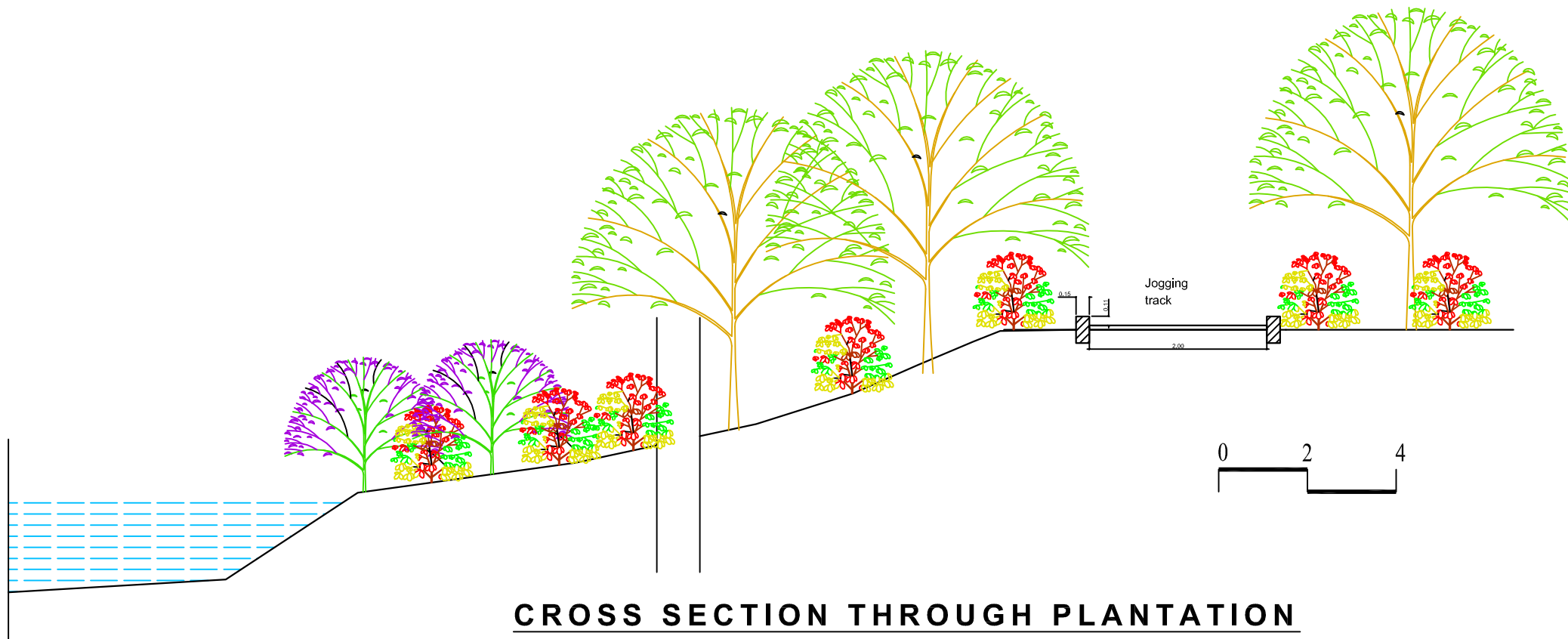
EDGE DETAIL - NODE 15



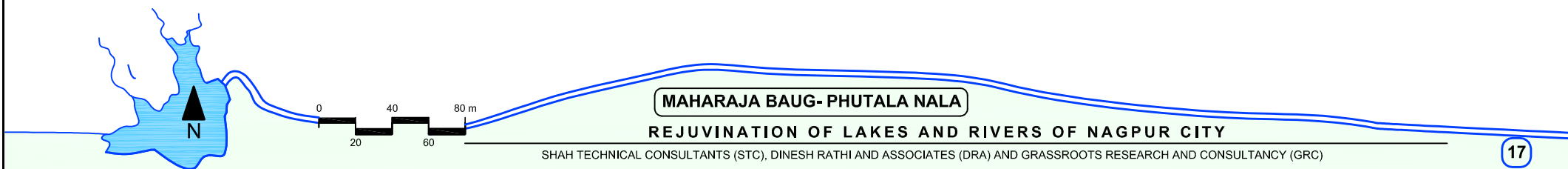


SECTION A-A

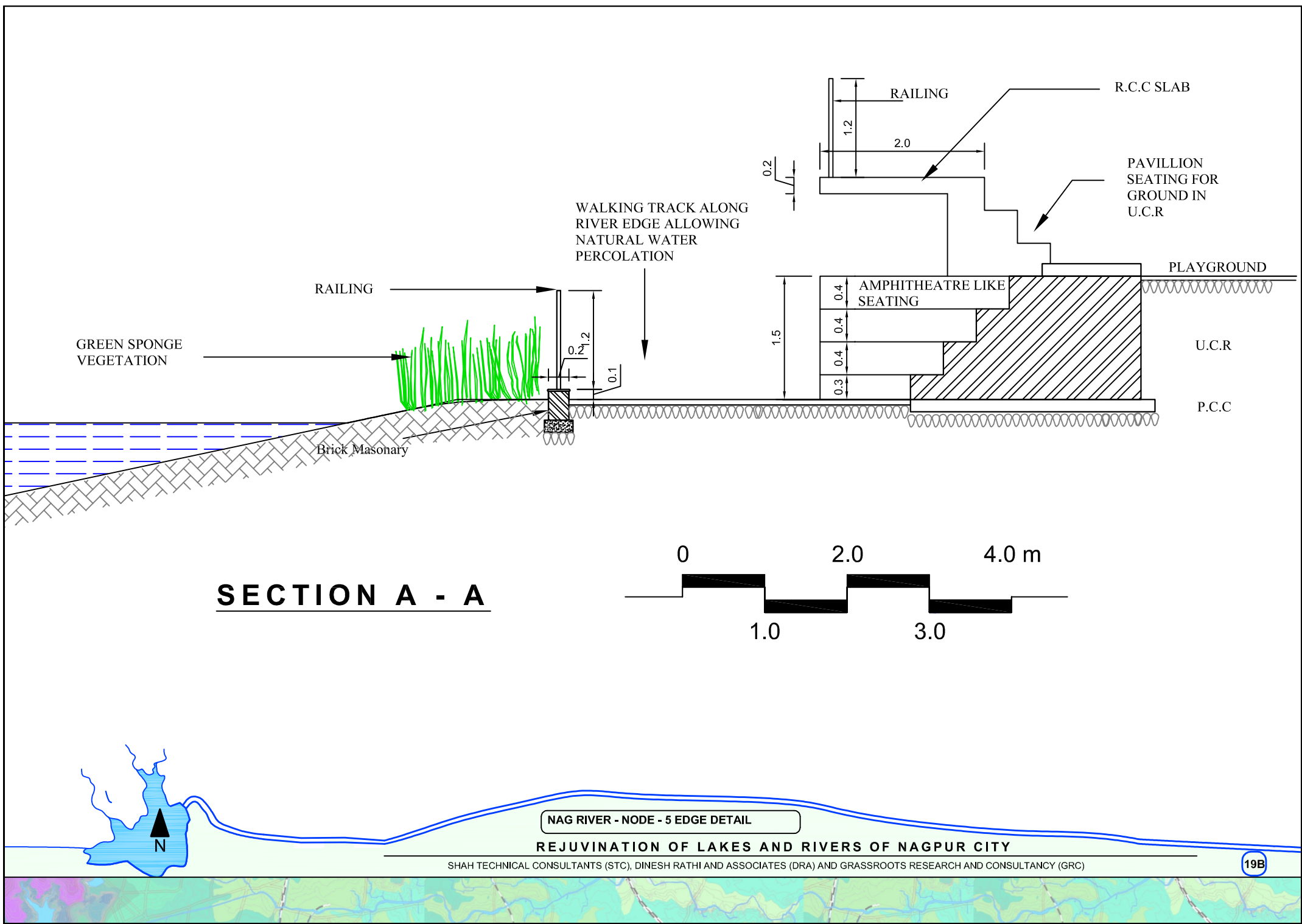


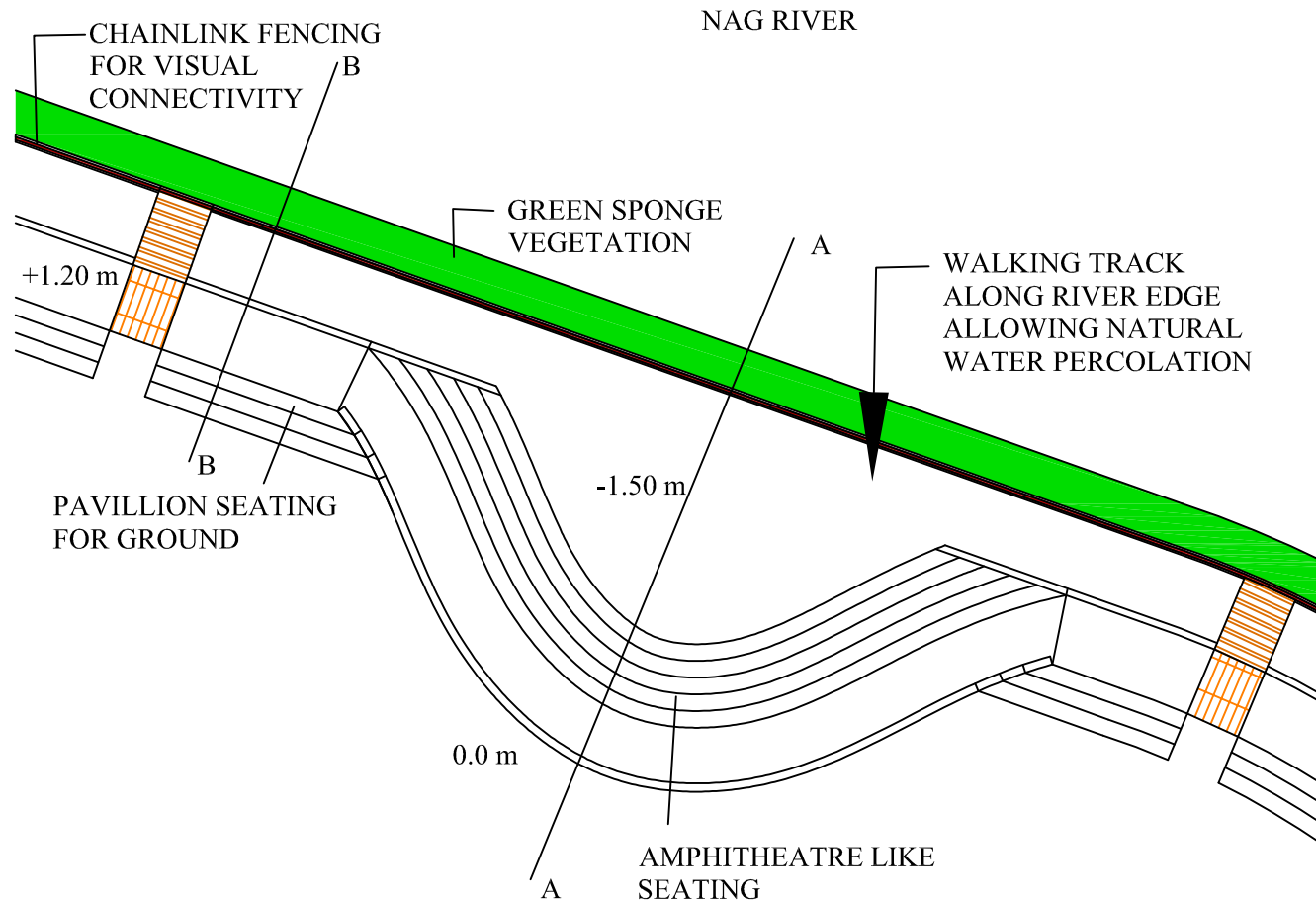


CROSS SECTION THROUGH PLANTATION AND JOGGING TRACK

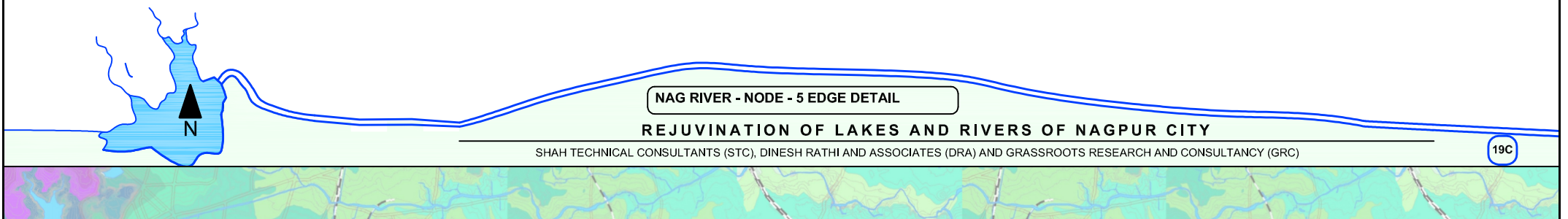
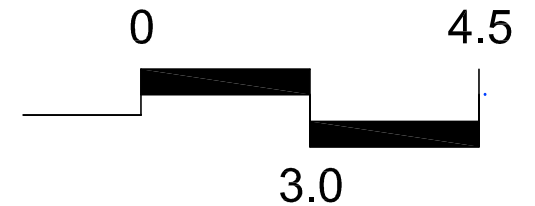


SHAH TECHNICAL CONSULTANTS (STC), DINESH RATHI AND ASSOCIATES (DRA) AND GRASSROOTS RESEARCH AND CONSULTANCY (GRC)





KEY PLAN



MEASUREMENT SHEETS

1 PERCOLATION WELL

Based on NAGPUR DSR 2011-2012

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Excavation for foundation - up to 1.5 m /pipe trenches in earth, soils of all types , sand , gravel and soft murum,						
	Including Dewatering						
	Radius - 1.08	1	3.663662		1.5	5.50	
	for top PCC R - 1.165	1	7.3162	0.37	0.23	0.6226086	
						5.50	m3
2	Excavation for foundation - 1.5 to 3 m / pipe trenches in earth, soils of all types , sand , gravel and soft murum						
		1	3.663662		1.5	5.50	
						5.50	(A)
	Say 50%					2.75	m3
3	Excavation for foundation in Hard Murum - 1.5 to 3 m / pipe trenches in hard murum, including removing the excavated material						
	say 50 % of I- 2 (A)	1				2.75	m3
4	Excavation for foundation in Hard Murum -below 3 m						
	for foundation of wall R - 0.865	1	5.4322	0.33	0.38	0.6811979	
						0.68	m3
5	Providing dry trap / granite / quartzite / gneiss, rubble stone soling in 15 cm to 20 cm thick						
	for foundation of wall R - 0.865	1	5.4322	0.33	0.23	0.412304	
						0.41	m3
6	Providing and laying in situ following grades of Plain Cement concrete of trap P.C.C. M- 15						
	for foundation of wall R - 0.865	1	5.4322	0.33	0.15	0.2688939	
	On top R - 1.05	1	6.594	0.6	0.15	0.59	
						0.86	m3
7	Providing shoring and strutting to excavated work for foundation pits, trenches etc wherever necessary						
	Provisional Qnty.					10.00	m2
8	Providing second class burnt brick masonry with conventional/ I.S. type bricks in cement mortar 1:6 in foundations						

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
	R - 0.865	1	5.4322	0.23	3.00	3.75	
						3.75	m3
9	Filling in plinth and floors murum bedding in trenches with approved murum from excavated materials						
	Fillin by pebbles R - 0.75	1.00	1.766813		3.00	5.30	m3
10	Providing and fixing A.C./ UPVC pipes of 100 mm diameter						
	From nearest building 6m height	1	15.00			15.00	
	6 inch half cut pvc pipe with fittings	3	10.00			30.00	
						45.00	Rmt.

2 GHAT WITH FLOWER BED

Based on NAGPUR DSR 2011-2012

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Demolition-Dismantling brick masonry in lime or cement mortar and stacking the materials as directed with all leads, lifts	1	12	0.5	2.6	15.6	m3
2	Excavation for foundation - up to 1.5 m /pipe trenches in earth, soils of all types , sand , gravel and soft murum,						
	Average height $(2.87+1.38)/2 = 2.125$	1	12.6	3	1.5	56.70	
						56.70	m3
3	Excavation for foundation - 1.5 to 3 m / pipe trenches in earth, soils of all types , sand , gravel and soft murum						
		1	12.6	3	0.625	23.63	
						23.63	(A)
	Say 50%					11.81	m3
4	Excavation for foundation in Hard Murum - 1.5 to 3 m / pipe trenches in hard murum, including removing the excavated material						
	say 50 % of I- 3 (A)					11.81	m3
5	Providing dry trap / granite / quartzite / gneiss, rubble stone soling in 15 cm to 20 cm thick						
		1	12.3	2.7	0.23	7.64	
						7.64	m3
6	Providing and laying in situ following grades of Plain Cement concrete of trap P.C.C. M- 15						
		1	12.3	2.7	0.15	4.98	
						4.98	m3
7	Providing shoring and strutting to excavated work for foundation pits, trenches etc wherever necessary						
	Provisional Qnty.					10.00	m2
8	Providing uncoursed rubble masonry of trap/granite/quartzite/gneiss stones in cement mortar 1:6 in foundations and plinth of inner walls / in plinth of external walls including bailing out water, striking joints on unexposed faces and watering complete.						
	Bottom Steps	1	8.80	2.40	1.14	24.08	
	2nd Step	1	8.80	1.80	0.45	7.13	

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
	3rd Step	1	8.80	1.20	0.45	4.75	
	4th Step	1	8.80	0.60	0.45	2.38	
	Flower Bed side walls	4	1.76	0.50	2.28	8.03	
		4	0.64	0.50	2.82	3.61	
	Flower Bed front walls	2	0.60	0.50	2.82	1.69	
		2	0.6	0.50	1.74	1.04	
						52.70	m3
9	Providing and laying polished Shahabad Stone Flooring 20 mm to 25 mm thick and of required width in plain/diamond pattern with black polished kaddappa slab for border or any other design on a bed of C.M. 1:6 including cement float, filling joints with neat cement slurry, curing polishing and cleaning complete.						
	Tread	4.00	8.80	0.60		21.12	
	Riser	3.00	8.80	0.45		11.88	
	Side walls of flower bed	4.00	2.40	0.50		4.80	
		4.00	1.60	0.50		3.20	
						41.00	m2
10	Pointing						
	Flower Bed exterior wall	4	2.40	1.00		9.60	
		4	1.60	1.00		6.40	
						16.00	m2
11	Filling fresh garden soil/silt & manure in excavated area including lead up to a distance of 50mtrs.						
	(C.S.R. Road construction W.B.M. Sr. No. 37, RD-28 P. No. 229, 2011-12)	2.00	1.40	0.60	1.50	2.52	m3
12	GARDEN SOIL :- supplying on site garden soil, well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.) (C.S.R.I. No. 1, Page No. 2, Parks and Garden 2011-12)	2.00	1.40	0.60	1.50	2.52	m3
13	Saplings of small and medium ornamental flowering plants, Thuja, Cupresus, Palms, Ornamental Ficus, Musanda etc. (C.S.R.I. No. 9, Page No. 3, Parks and Garden 2011-12)	2.00	10.00			20.00	No

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
14	Providing and fixing ISI 1729 /2002 grade 100 mm dia Cast Iron Soil Pipes with lugs including plug bend necessary						
	Outlet Pipe from flower bed	4	0.75			3.00	
						3.00	Rmt.

3 TOILET BLOCK (SMALL)

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Excavation for foundation - up to 1.5 m /pipe trenches in earth, soils of all types , sand , gravel and soft murum,						
	Long wall	2	10.65	1.05	0.98	21.92	
	Short wall	3	1.30	1.05	0.98	4.01	
	Septic Tank	1	4.16	3.16	1.5	19.72	
	Soak pit= 1x 3.14/4 x1.37x1.37 x 1.50 = 2.21					2.21	
	Steps	2	1.5	0.9	0.38	1.03	
						48.89	m3
2	Excavation for foundation - 1.5 to 3 m / pipe trenches in earth, soils of all types , sand , gravel and soft murum						
	Septic Tank	1	4.16	3.16	0.53	6.97	
	Soak pit= 1x 3.14/4 x1.37x1.37 x 1.45 = 2.14					2.14	
						9.11	(A)
	Say 50%					4.55	m3
3	Excavation for foundation in Hard Murum - 1.5 to 3 m / pipe trenches in hard murum, including removing the excavated material						
	say 50 % of I- 2 (A)					4.55	m3
4	Providing dry trap / granite / quartzite / gneiss, rubble stone soling in 15 cm to 20 cm thick						
	Long wall	2	10.35	0.75	0.23	3.57	
	Short wall	3	1.30	0.75	0.23	0.67	
	Septic Tank	1	3.76	2.86	0.23	2.47	
	Steps	2	1.5	0.9	0.23	0.62	
						7.34	m3
5	Providing and laying in situ following grades of Plain Cement concrete of trap P.C.C. M- 15						
	Long wall	2	10.35	0.75	0.15	2.33	
	Short wall	3	1.30	0.75	0.15	0.44	
	Septic Tank	1	3.76	2.86	0.15	1.61	
	Steps	2	1.5	0.9	0.15	0.41	
						4.79	m3
8	Providing second class burnt brick masonry with conventional/ I.S. type bricks in cement mortar 1:6 in foundations						
	Long wall	2	10.05	0.45	1.05	9.50	
	Short wall	3	1.90	0.45	1.05	2.69	
	Septic Tank						

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
	Long wall	2	3.46	0.23	1.80	2.86	
	Short wall	3	2.10	0.23	1.80	2.61	
	Steps	2	1.50	0.90	0.15	0.41	
		2	1.50	0.60	0.15	0.27	
		2	1.50	0.30	0.15	0.14	
						18.47	m3
9	Filling in plinth and floors murum bedding in trenches with approved murum from excavated materials						
	Toilet Block	1.00	9.37	2.12	0.30	5.96	m3
10	Providing and laying in situ following grades of Plain Cement concrete						
	Long wall	2	9.83	0.23	0.10	0.45	
	Short wall	3	2.58	0.23	0.10	0.18	
						0.63	m3
11	Providing dry trap/granite/quartzite/gneiss, rubble stone soling in 15 cm to 20 cm thick layers						
		1	9.15	1.90	0.15	2.61	m3
12	Providing and laying in situ following grades of Plain Cement concrete of trap/ granite / quartzite / gneiss metal for foundation and bedding PCC 1:3:6						
		1	9.15	1.90	0.15	2.61	m3
13	Providing second class burnt brick masonry with conventional / I.S.Type bricks in cement mortar 1:6 in superstructure						
	Long wall	2	9.83	0.23	6.38	28.83	
	Short wall	2	2.12	0.23	6.38	6.22	
		1	2.12	0.23	2.44	1.19	
						36.23	(A)
	Deduction						
	Entry Door	2	1.00	0.23	2.14	0.98	
	Ventilator	8	0.30	0.23	0.75	0.41	
						1.40	(B)
			Total (A) - (B) =			34.83	m3
14	Providing second class burnt brick masonry with conventional / I.S.Type bricks in cement mortar 1:4 in half brick thick						
		1	1.00		2.44	2.44	
		2	1.15		2.44	5.61	
		2	0.75		2.44	3.66	
						11.71	m2

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
15	Providing and casting in situ C.C. of trap / granite / quartzite/ gneiss metal of approved quality for RCC works						
		1	6.40	0.23	0.45	0.66	
		2	1.50	0.23	0.45	0.31	
						0.97	m3
16	R.C.C. Chajja Providing and casting in situ C.C. of trap / granite / quartzite/ gneiss metal of approved quality for RCC works						
		2	1.50	0.61	0.10	0.18	
		1	6.40	0.61	0.10	0.39	
						0.57	m3
17	R.C.C. Beam Providing and casting in situ C.C. of trap / granite / quartzite/ gneiss metal of approved quality for RCC works						
		2	9.83	0.23	0.45	2.03	
		2	2.60	0.23	0.45	0.54	
						2.57	m3
18	R.C.C. Slab Providing and casting in situ C.C. of trap / granite / quartzite/ gneiss metal of approved quality for RCC work						
	Mid slab	1	6.20	2.58	0.12	1.92	
	Top Slab	1	9.83	3.80	0.10	3.74	
	Slab for septic Tank	1	3.46	2.56	0.15	1.33	
		1	3.46	2.56	0.15	1.33	
						8.31	m3
19	steel Providing and fixing in postion steel bar reinforcement of various diamters for RCC pipes, caps, footings						
	Qnty of Items 15,16,17 & 18						
	0.97 +0.57 +2.57 +8.31 = 12.42 x 115 kg. = 1428kg.					1.50	M.T.
20	Providing and laying Rectified and vitrified mirror finish decorative type tiles of size 600 mm x 600mm and 10 mm thick						
		1	4.30	2.12		9.12	
		1	4.84	2.12		10.26	
						19.38	m2
21	Providing and laying Rectified and vitrified mirror finish decorative type tiles of size 600 mm x 600mm and 10 mm thick						
		1	12.84		2.14	27.48	
		1	13.92		2.14	29.79	
	Separation wall	2	1.00		2.14	4.28	
	W.C. Wall	2	0.75		2.14	3.21	
		2	1.15		2.14	4.92	
						69.68	m2

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
22	Providing and fixing Indian type white glazed earthenware 580 nmm Water Closet Pan including "P" trap						
		2				2.00	No
23	Providing and fixing white glazed earthenware full stall type urinal with white H.D.P.E. flushing cistern of 5 litres						
		4				4.00	No
24	Providing and fixing coloured glazed pedestal for Wash Hand Basin of approved size, make and quality						
		4				4.00	No
25	Providing 25 mm to 30 mm thick partitions of both side polished black Kadappa stone of approved shape						
		6	0.61		0.91	3.33	m2
26	Providing and fixing machine cut mirror polished green coloured marble slab of required size and about 20mm thick						
	Vertical Entry door	4	0.30		2.14	2.57	
	W. C. Door	4	0.18		2.14	1.54	
	Horizontal Entry door	4	0.30		1.00	1.20	
	W. C. Door	4	0.18		0.75	0.54	
						5.85	m2
27	Providing & fixing in position after hoisting precast 1:2 cement mortar reinforcement jail 50mm thick						
		8	0.30		0.75	1.80	m2
28	Providing sand face plaster externally to concrete, stone or brick surfaces using approved screened sand						
	External Plaster	1	9.83		5.20	51.12	
		1	9.83		4.15	40.79	
		2	2.58		4.68	24.12	
	Chajja	4	1.50		0.61	3.66	
		2	6.40		0.61	7.81	
						127.50	m2
29	Providing internal cement plaster 20 mm thick in two coats in cement mortar 1:4 without neeru finish to concrete						
	Long Wall Levetry Block	1	4.30		4.60	19.78	
		1	4.30		3.55	15.27	
	Short Wall	1	2.12		4.08	8.64	

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
	Toilet Block Long wqll	1	4.84		4.60	22.26	
		1	4.84		3.55	17.18	
	Short Wall	1	2.12		4.08	8.64	
	Middle wall in between T.B. & L. B.	2	2.12		2.44	10.35	
	Middle wall Levetry Block	2	1.00		2.44	4.88	
	Toilet Block	4	1.15		2.44	11.22	
		4	0.75		2.44	7.32	
						125.54	(A)
	Deduction of door	2	1.00		2.14	4.28	
	Ventilator	8	0.30		0.75	1.80	
						6.08	(B)
				Total (A) -(B) =		119.46	m2
30	Providing and laying polished Kotah stone slabs 25 mm thickness for treads & riser of steps and staircase						
	Treads	6	1.50		0.30	2.70	
	Risers	8	1.50		0.15	1.80	
						4.50	m2
31	Providing & fixing C. C.T.W. double leaf 40 mm thick second class fully panelled door without fanlight						
	Entry Door	2	1.00		2.14	4.28	m2
32	Providing & fixing fibre glass reinforced polyster door shutter 30mm thick as per IS : 14856 (2000)						
	W.C. Door	2	0.75		2.14	3.21	m2
33	Providing and fixing 10 cm cast iron Nahani Trap with fixed cast iron grating, cast iron plug bend and piece of cast iron						
		4				4.00	No
34	Providing and fixing ISI 1729 /2002 grade 100 mm dia Cast Iron Soil Pipes with lugs including plug bend necessary						
	Nahani to gully trap	4	2.50			10.00	
		3	1.00			3.00	
						13.00	Rmt.
35	Providing and fixing 15 cm x 10 cm Salt Glazed Stoneware Gully Trap in cement concrete 1:4:8 outside the building						
		4				4.00	No.
36	Providing and constructing brick masonry inspection chambers 90cm X 45cm and 90cm to 150 cm, in depth						

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
		6				6.00	No.
37	Providing and laying 100 mm dia Salt Glazed Stoneware pipe including fitting such as bends						
	Gully trap to Inspection chamber	4	1.5			6.00	Rmt
38	Providing and laying 150 mm dia Salt Glazed Stoneware pipe including fitting such as bends,						
	I.C. to I.C. to S.T.	6	2			12.00	
	Septic Tank to Sockpit	1	2.5			2.50	
						14.50	Rmt
39	Providing and fixing syntex brand water tank of 5000 litre capacity						
		5000				5000.00	Litres
40	Providing and laying G.I. Pipe in trenches 40mm diameter heavy type						
	Main supply	1	10			10.00	Rmt.
41	Providing and laying G.I. Pipe in trenches 50mm diameter heavy type						
	Main supply	1	10			10.00	Rmt.
42	Providing and fixing G.I. Pipes 32 mm diameter heavy type						
	supply line to wash basin	2	10			20.00	
	supply line to w.c	2	5			10.00	
	supply line to Lavetary Block	2	5			10.00	
						40.00	Rmt
43	Providing and fixing G.I. Pipes 25 mm diameter heavy type						
	wash basin	4	4			16.00	
	w.c	2	5			10.00	
	Lavetary Block	4	4			16.00	
						42.00	Rmt
44	Providing and fixing screw down 25 mm dia wheeled stop tap of gun metal bearing I.S.I.						
	wash basin	4				4.00	
	w.c	2				2.00	
	Lavetary Block	4				4.00	
						10.00	No
45	Providing and fixing screw down 40 mm dia wheeled stop tap of gun metal bearing I.S.I.						
	Main supply	1				1.00	No

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
46	Providing and fixing screw down 50 mm dia wheeled stop tap of gun metal bearing I.S.I						
	Main supply	1				1.00	No
47	Providing and fixing screw down 32 mm dia wheeled stop tap of gun metal bearing I.S.I						
	supply line to wash basin	2				2.00	
	supply line to w.c	2				2.00	
	supply line to Lavetary Block	2				2.00	
						6.00	No
48	Providing and fixing Mirrors of approved Indian quality, copper plated with 10 mm						
	at wash basin	2				2.00	No.
49	Point wiring for light / fan bell with I.S.I. mark 2-1 sq.mt. copper PVC insulated wire						
		18				18.00	No
50	Providing and fixing tube lights of 40 watts with prior						
	Tube light	8				8.00	No
51	Providing and fixing bulbs of 100 watts with prior approval						
		4				4.00	No
52	Providing and fixing Exhaust fan with prior approval						
		4				4.00	No
53	Providing & applying colour wash in three coats to old/new plastered or masonry						
	Long Wall Levetry Block	1	4.30		4.60	19.78	
		1	4.30		3.55	15.27	
	Short Wall	1	2.12		4.08	8.64	
	Toilet Block Long wqll	1	4.84		4.60	22.26	
		1	4.84		3.55	17.18	
	Short Wall	1	2.12		4.08	8.64	
	Middle wall in between T.B. & L. B.	2	2.12		2.44	10.35	
	Middle wall Levetry Block	2	1.00		2.44	4.88	
	Toilet Block	4	1.15		2.44	11.22	
		4	0.75		2.44	7.32	
	Mid slab	1	6.20		2.58	16.00	
	Top Slab	1	9.83		3.80	37.35	
						178.89	m2
54	Providing & applying colour wash in three coats to old/new plastered or masonry						
	External walls	1	9.83		5.20	51.12	
		1	9.83		4.15	40.79	

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
		2	2.58		4.68	24.12	
	Chajja	4	1.50		0.61	3.66	
		2	6.40		0.61	7.81	
						127.50	m2
55	Providing fusion bonded epoxy coating to reinforcement bars as per IS 13 - 620 /1993						
	As per Item 19					1.50	M.T.
56	Providing anf fixing ISI 1729 / 2002 grade 100 mm dia Cast Iron Waste Water Pipe						
		2	6.00			12.00	Rmt.
57	Providing anf fixing ISI 1729 / 2002 grade 75 mm dia Cast Iron Waste Water Pipe	4	6.00			24.00	Rmt.

4 EDGE WALL WITH PLANTATION BED

Based on Nagpur DSR 2011-2012

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Excavation for foundation / pipe trenches in earth, soils of all types , sand , gravel and soft murum, up to 1.5 m						
	Retaining wall	2	1	1.8	0.85	3.06	m3
2	Providing dry trap/ rubble stone soling 15 cm to 20 cm thick including hand packing and compacting etc. complete						
	Retaining wall	2	1	1.2	0.25	0.60	m3
3	P.C.C M15 (plain cement concrete, M15 means grade of concrete which can be accived by design mix or using 1 part of cement, 2 parts of Sand and 4 parts of aggregates)						
	Retaining wall	2	1	1.2	0.1	0.24	m3
4	Providing shoring and strutting to excavated work for foundation pits, trenches						
	Retaining wall	2	1		1.5	3.00	m2
5	Dewatering - 10 to 19 HP. Pump the excavated trenches and pools of water in the building trenches						
	Retaining wall	20	1			20.00	hours
6	Providing and laying in situ cement concrete of trap/ granite/ quartzite/ gneiss metal for RCC work M-25						
	Retaining wall	2	1	1.05	0.25	0.53	m3
7	Providing and casting in situ C.C. of trap/granite/quartzite/gneiss metal of approved quality for RCC works R.C.C. M - 25						
	Retaining wall	2	1	0.25	1.75	0.88	m3
8	Providing and fixing in postion steel bar reinforcement of various diamters for RCC pipes,						
	R.C.C. Bedding & R.C.C. wall						
	l-6 & l-7 = 1.40 X 115 kgs.					161.00	kgs.
		1				0.16	MT
9	Refilling the trenches with available excavated stuff with soft material						
	Between Retaining wall & Boundary wall						
	3.06 M3 - 0.6 - 0.24-0.525 - 0.06 = 1.635	1				1.64	M3
10	Filling in plinth and floors / trenches with contractor's murum for bedding in 15 cm to 20 cm						

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
	Provisional qnty.	1				0.50	m3
11	Removing excavated materials including debris from the site						
	l-1 - l-13 = 3.06 - 1.635 = 1.425	1				1.43	m3
12	Filling fresh garden soil/silt & manure in excavated area including lead up to a distance of 50mtrs.						
	(C.S.R. Road construction W.B.M. Sr. No. 37, RD-28 P. No. 229, 2011-12)	1.00	1.00	0.75	0.90	0.68	m3
13	GARDEN SOIL :- supplying on site garden soil, well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.) (C.S.R.I. No. 1, Page No. 2, Parks and Garden2011-12)	1.00	1.00	0.75	0.90	0.68	m3
14	Saplins of small and medium ornamental flowering plants, Thuja, Cupresus, Palms, Ornamental Ficus, Musanda etc.	1.00	1.00	0.75	0.90	4.00	No
	(C.S.R.I. No. 9, Page No. 3, Parks and Garden2011-12)						
15	Planting small size ornamental plants	1.00	1.00	0.75	0.90	4.00	No

5 GRAVEL FILTER

Based on Nagpur DSR 2011-2012

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Providing dry trap/ rubble stone soling 15 cm to 20 cm thick including hand packing and compacting etc. complete	1	1.31	0.75	0.23	0.23	m3
2	P.C.C M15 (plain cement concrete, M15 means grade of concrete which can be accived by design mix or using 1 part of cement, 2 parts of Sand and 4 parts of aggregates)	1	1.31	0.75	0.15	0.15	m3
3	Providing second class burnt brick masonry with conventional/ I.S. type bricks in cement mortar 1:6 in foundations	2	0.75	0.23	0.90	0.31	m3
4	Providing and casting in situ cement concrete M-15 of trap/ granite/quartzite/gneiss metal for coping to plinth or parapet	2	0.75	0.23	0.05	0.02	m3
5	Excavation for foundation - up to 1.5 m /pipe trenches in earth, soils of all types , sand , gravel and soft murum,						
	for Pipe	1	2.3	0.2	0.5	1.15	m3
6	Providing and fixing 150 mm dia. Salt Glazed Stoneware pipe	1	2.5			2.50	rmt
7	Refilling the trenches with available excavated stuff with soft material	1	2.3	0.2	0.5	1.15	m3

6 VERMICOMPOST PIT

Based on NAGPUR DSR 2011-2012

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Excavation for foundation - up to 1.5 m /pipe trenches in earth, soils of all types , sand , gravel and soft murum,						
	BASE	1	6.45	1.65	0.3	1.94	
						1.94	m3
2	Providing dry trap / granite / quartzite / gneiss, rubble stone soling in 15 cm to 20 cm thick						
	BASE	1	6.45	1.65	0.23	2.447775	
						2.45	m3
3	Providing and laying in situ following grades of Plain Cement concrete of trap P.C.C. M- 15						
	BASE	1	6.45	1.65	0.15	1.596375	m3
						1.60	
4	Providing second class burnt brick masonry with conventional/ I.S. type bricks in cement mortar 1:6 in foundations						
	Long Wall	2	5.4	0.23	0.75	1.863	
	Short Wall	2	0.9	0.23	0.75	0.31	
						2.17	m3
5	Providing and laying partition wall						
	Long Wall	2	0.75	0.75		1.13	
	Short Wall	1	0.6	0.75		0.45	
						1.58	m2
6	Providing and fixing ISI 1729 /2002 grade 100 mm dia Cast Iron Soil Pipes with lugs including plug bend necessary						
	From nearest building 6m height	3	0.30			0.90	Rmt
7	RSJ Structural work						
	Angle 75x75x 10						
	Length + 0.75+1.20+0.75 = 2.70	8	2.70	11.00	kg/rmt	237.60	
						0.24	MT
8	Asbestos cement sheet						
		2	7.35	1.2		17.64	m2

7 TOILET BLOCK (LARGE)

Based on NAGPUR DSR 2011-2012

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Excavation for foundation - up to 1.5 m /pipe trenches in earth, soils of all types , sand , gravel and soft murum,						
	Long wall	2	15.55	0.83	1.43	36.91	
		2	8.75	0.83	1.43	20.77	
	Short Wall	2	3.5	0.83	1.43	8.31	
	Short wall	3	7.10	0.83	1.43	25.28	
	Septic Tank	1	3.46	4.96	1.5	25.74	
	Soak pit= 1x 3.14/4 x1.37x1.37 x 1.50 = 2.21					2.21	
	Rain water Harvesting Tank	1	3.46	4.96	1.5	25.74	
						144.97	m3
2	Excavation for foundation - 1.5 to 3 m / pipe trenches in earth, soils of all types , sand , gravel and soft murum						
	Septic Tank	1	3.46	4.96	1.03	17.68	
	Rain water harvesting tank	1	3.46	4.96	1.5	25.74	
	Soak pit= 1x 3.14/4 x1.37x1.37 x 1.45 = 2.14					2.14	
						45.56	(A)
	Say 50%					22.78	m3
3	Excavation for foundation in Hard Murum - 1.5 to 3 m / pipe trenches in hard murum, including removing the excavated material						
	say 50 % of I- 2 (A)					22.78	m3
4	Providing dry trap / granite / quartzite / gneiss, rubble stone soling in 15 cm to 20 cm thick						
	Long wall	2	15.55	0.53	0.23	3.79	
		2	8.75	0.53	0.23	2.13	
	Short Wall	2	3.5	0.53	0.23	0.85	
	Short wall	3	7.10	0.53	0.23	2.60	
	Septic Tank	1	3.46	4.96	0.23	3.95	
	Rain water Harvesting Tank	1	3.46	4.96	0.23	3.95	
						17.27	m3
5	Providing and laying in situ following grades of Plain Cement concrete of trap P.C.C. M- 15						
	Long wall	2	15.55	0.53	0.15	2.47	
		2	8.75	0.53	0.15	1.39	
	Short Wall	2	3.5	0.53	0.15	0.56	
	Short wall	3	7.10	0.53	0.15	1.69	
	Septic Tank	1	3.46	4.96	0.15	2.57	
	Rain water Harvesting Tank	1	3.46	4.96	0.15	2.57	
						11.26	m3

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
6	Providing second class burnt brick masonry with conventional/ I.S. type bricks in cement mortar 1:6 in foundations						
	Long wall	2	15.55	0.23	1.35	9.66	
		2	8.75	0.23	1.35	5.43	
	Short Wall	2	3.5	0.23	1.35	2.17	
	Short wall	3	7.10	0.23	1.35	6.61	
	Septic Tank	2	3.46	0.23	2.00	3.18	
	Septic Tank	2	4.96	0.23	2.00	4.56	
	Rain water Harvesting Tank	2	3.46	0.23	2.00	3.18	
	Rain water Harvesting Tank	2	4.96	0.23	2.00	4.56	
						39.37	m3
7	Filling in plinth and floors murum bedding in trenches with approved murum from excavated materials						
	Toilet Block	1.00	8.29	3.37	0.22	6.15	
	Toilet Block	1.00	15.09	3.04	0.22	10.09	
						16.24	m3
8	Providing and laying in situ following grades of Plain Cement concrete						
	Long wall	2	15.55	0.23	0.1	0.72	
		2	8.75	0.23	0.1	0.40	
	Short Wall	2	3.5	0.23	0.1	0.16	
	Short wall	3	7.10	0.23	0.1	0.49	
	Septic Tank	2	3.46	0.23	0.10	0.16	
	Septic Tank	2	4.96	0.23	0.10	0.23	
	Rain water Harvesting Tank	2	3.46	0.23	0.10	0.16	
	Rain water Harvesting Tank	2	4.96	0.23	0.10	0.23	
						2.54	m3
9	Providing dry trap/granite/quartzite/gneiss, rubble stone soling in 15 cm to 20 cm thick layers						
	Toilet Block	1.00	8.29	3.37	0.23	6.43	
	Toilet Block	1.00	15.09	3.04	0.23	10.55	
						16.98	m3
10	Providing and laying in situ following grades of Plain Cement concrete of trap/ granite / quartzite / gneiss metal for foundation and bedding PCC 1:3:6						
	Toilet Block	1.00	8.29	3.37	0.10	2.79	
	Toilet Block	1.00	15.09	3.04	0.10	4.59	
						7.38	m3
11	Providing second class burnt brick masonry with conventional / I.S.Type bricks in cement mortar 1:6 in superstructure						

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
	Long wall	2	15.55	0.23	3.40	24.32	
	Short wall	2	7.10	0.23	3.40	11.10	
						35.42	(A)
	Deduction						
	Ventilator	14	0.60	0.23	1.20	2.32	
						2.32	(B)
			Total (A) - (B) =			33.11	m3
12	Providing second class burnt brick masonry with conventional / I.S.Type bricks in cement mortar 1:4 in half brick thick						
		8	1.80		2.14	30.82	
		1	6.87		2.44	16.76	
		2	1.80		2.44	8.78	
		4	2.55		2.44	24.89	
						81.25	m2
13	Providing and casting in situ C.C. of trap / granite / quartzite/ gneiss metal of approved quality for RCC works						
		1	8.75	0.23	0.45	0.91	
		2	3.50	0.23	0.45	0.72	
						1.63	m3
14	R.C.C. Chajja Providing and casting in situ C.C. of trap / granite / quartzite/ gneiss metal of approved quality for RCC works						
		2	3.50	0.61	0.10	0.43	
		1	8.75	0.61	0.10	0.53	
						0.96	m3
15	R.C.C. Beam Providing and casting in situ C.C. of trap / granite / quartzite/ gneiss metal of approved quality for RCC works						
		2	15.55	0.23	0.45	3.22	
		3	7.10	0.23	0.45	2.20	
						5.42	m3
16	R.C.C. Slab Providing and casting in situ C.C. of trap / granite / quartzite/ gneiss metal of approved quality for RCC work						
	Top Slab	1	4.86	15.55	0.12	9.07	
		1	3.70	8.75	0.12	3.89	
	Top Slab rain water harvesting Tank	1	3.46	4.96	0.15	2.57	
	Slab for septic Tank	1	3.46	4.96	0.15	2.57	
						18.10	m3
17	steel Providing and fixing in position steel bar reinforcement of various diameters for RCC pipes, caps, footings						
	Qty of Items 15,16,17 & 18						
	1.63 +0.96 +5.42 +18.10 = 26.11 x 115 kg. = 3002.65kg.					3.00	M.T.

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
18	Providing and laying Rectified and vitrified mirror finish decorative type tiles of size 600 mm x 600mm and 10 mm thick						
	Toilets	11	1.50	0.90		14.85	
		2.00	3.50	3.20		22.40	
		2.00	4.05	1.80		14.58	
		1	2.95	3.75		11.06	
		1	2.05	3.00		6.15	
						69.04	m2
19	Providing and laying Rectified and vitrified mirror finish decorative type tiles of size 600 mm x 600mm and 10 mm thick						
	Toilets	11	4.35		2.14	102.40	
		2	13.40		2.14	57.35	
	Separation wall	2	11.70		2.14	50.08	
	W.C. Wall	1	13.40		2.14	28.68	
		1	10.10		2.14	21.61	
						260.12	m2
20	Providing and fixing Indian type white glazed earthenware 580 nmm Water Closet Pan including "P" trap						
		11				11.00	No
21	Providing and fixing white glazed earthenware full stall type urinal with white H.D.P.E. flushing cistern of 5 litres						
		10				10.00	No
22	Providing and fixing coloured glazed pedestal for Wash Hand Basin of approved size, make and quality						
		18				18.00	No
23	Providing 25 mm to 30 mm thick partitions of both side polished black Kadappa stone of approved shape						
		10	0.61		0.91	5.55	m2
24	Providing and fixing machine cut mirror polished green coloured marble slab of required size and about 20mm thick						
	Vertical Entry door	22	0.30		2.14	14.12	
	W. C. Door	22	0.18		1.00	3.96	
	Horizontal Entry door	8	0.30		2.15	5.16	
	W. C. Door	8	0.18		1.00	1.44	
						24.68	m2

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
25	Providing & fixing in position after hoisting precast 1:2 cement mortar reinforcement jail 50mm thick						
		14	0.60		1.20	10.08	m2
26	Providing sand face plaster externally to concrete, stone or brick surfaces using approved screened sand						
	External Plaster	1	45.30		3.75	169.88	
	Chajja	4	3.50		0.61	8.54	
		2	8.75		0.61	10.68	
						189.09	m2
27	Providing internal cement plaster 20 mm thick in two coats in cement mortar 1:4 without neeru finish to concrete						
	Toilets	11	4.35		3.15	150.73	
		2	13.40		3.15	84.42	
	Separation wall	2	11.70		3.15	73.71	
	W.C. Wall	1	13.40		3.15	42.21	
		1	10.10		3.15	31.82	
						382.88	m2 (A)
	Deduction of door	11	1.00		2.14	23.54	
		4	1.00		2.14	8.56	
	Ventilator	14	0.60		1.20	10.08	
						42.18	(B)
				Total (A) -(B) =		340.70	m2
28	Providing and laying polished Kotah stone slabs 25 mm thickness for treads & riser of steps and staircase						
	Treads	8	2.40		0.30	5.76	
	Risers	8	2.40		0.15	2.88	
						8.64	m2
29	Providing & fixing C. C.T.W. double leaf 40 mm thick second class fully panelled door without fanlight						
	Entry Door	4	1.00		2.14	8.56	m2
30	Providing & fixing fibre glass reinforced polyster door shutter 30mm thick as per IS : 14856 (2000)						
	W.C. Door	11	0.75		2.14	17.66	m2
31	Providing and fixing 10 cm cast iron Nahani Trap with fixed cast iron grating, cast iron plug bend and piece of cast iron						
		24				24.00	No

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
32	Providing and fixing ISI 1729 /2002 grade 100 mm dia Cast Iron Soil Pipes with lugs including plug bend necessary						
	Nahani to gully trap	20	2.50			50.00	
		4	1.00			4.00	
						54.00	Rmt.
33	Providing and fixing 15 cm x 10 cm Salt Glazed Stoneware Gully Trap in cement concrete 1:4:8 outside the building						
		10				10.00	No.
24	Providing and constructing brick masonry inspection chambers 90cm X 45cm and 90cm to 150 cm, in depth						
		10				10.00	No.
35	Providing and laying 100 mm dia Salt Glazed Stoneware pipe including fitting such as bends						
	Gully trap to Inspection chamber	10	1.5			15.00	Rmt
36	Providing and laying 150 mm dia Salt Glazed Stoneware pipe including fitting such as bends,						
	I.C. to I.C. to S.T.	10	2			20.00	
	Septic Tank to Sockpit	1	2.5			2.50	
						22.50	Rmt
37	Providing and fixing syntex brand water tank of 5000 litre capacity						
		5000				5000.00	Litres
38	Providing and laying G.I. Pipe in trenches 40mm diameter heavy type						
	Main supply	1	20			20.00	Rmt.
39	Providing and laying G.I. Pipe in trenches 50mm diameter heavy type						
	Main supply	1	20			20.00	Rmt.
40	Providing and fixing G.I. Pipes 32 mm diameter heavy type						
	supply line to wash basin	4	15			60.00	
	supply line to w.c	11	5			55.00	
	supply line to Lavetary Block	2	5			10.00	
						125.00	Rmt
41	Providing and fixing G.I. Pipes 25 mm diameter heavy type						

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
	wash basin	18	4			72.00	
	w.c	11	5			55.00	
	Lavetary Block	10	4			40.00	
						167.00	Rmt
42	Providing and fixing screw down 25 mm dia wheeled stop tap of gun metal bearing I.S.I.						
	wash basin	18				18.00	
	w.c	11				11.00	
	Lavetary Block	10				10.00	
						39.00	No
43	Providing and fixing screw down 40 mm dia wheeled stop tap of gun metal bearing I.S.I.						
	Main supply	1				1.00	No
44	Providing and fixing screw down 50 mm dia wheeled stop tap of gun metal bearing I.S.I						
	Main supply	1				1.00	No
45	Providing and fixing screw down 32 mm dia wheeled stop tap of gun metal bearing I.S.I						
	supply line to wash basin	18				18.00	
	supply line to w.c	11				11.00	
	supply line to Lavetary Block	10				10.00	
						39.00	No
46	Providing and fixing Mirrors of approved Indian quality, copper plated with 10 mm at wash basin	10				10.00	No.
47	Point wiring for light / fan bell with I.S.I. mark 2-1 sq.mt. copper PVC insulated wire						
		35				35.00	No
48	Providing and fixing tube lights of 40 watts with prior						
	Tube light	12				12.00	No
49	Providing and fixing bulbs of 100 watts with prior approval						
		11				11.00	No
50	Providing and fixing Exhaust fan with prior approval						
		8				8.00	No
41	Providing & applying colour wash in three coats to old/new plastered or masonry						
	As per Int. Plaster Qnty. + 20 % Extra					408.84	m2

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
52	Providing & applying colour wash in three coats to old/new plastered or masonry						
	As per Ext. Plaster Qnty. + 20 % Extra					226.91	m2
53	Providing fusion bonded epoxy coating to reinforcement bars as per IS 13 - 620 /1993						
	As per Item 19					3.00	M.T.
54	Providing and fixing ISI 1729 / 2002 grade 100 mm dia Cast Iron Waste Water Pipe						
		11	6.00			66.00	Rmt.
55	Providing and fixing ISI 1729 / 2002 grade 75 mm dia Cast Iron Waste Water Pipe	11	6.00			66.00	Rmt.

8 COIR BUND

Based on NAGPUR DSR 2011-2012

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Excavation for foundation - 1.5 to 3 m / pipe trenches in earth, soils of all types , sand , gravel and soft murum	1	1	2.5	0.45	1.13	
						1.13	m3
2	Providing dry trap / granite / quartzite / gneiss, rubble stone soling in 15 cm to 20 cm thick	1	1	2.5	0.23	0.58	
						0.58	m3
3	Providing and laying in situ following grades of Plain Cement concrete of trap P.C.C. M- 15	1	1	2.2	0.15	0.33	
						0.33	m3
4	Providing shoring and strutting to excavated work for foundation pits, trenches etc wherever necessary	1	1	4.2		4.20	m2
5	Providing uncoursed rubble masonry of trap/granite/quartzite/gneiss stones in cement mortar 1:6 in foundations and plinth of inner walls / in plinth of external walls including bailing out water, striking joints on unexposed faces and watering complete.						
	average width = (2 + 0.5) / 2 = 1.25	1	1	1.25	0.75	0.94	m3
7	Fixing coir mat	2.00	1.00	1.06		2.12	m2

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
8	GARDEN SOIL :- supplying on site garden soil, well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.) (C.S.R.I. No. 1, Page No. 2, Parks and Garden2011-12)	2.00	1.00	1.06	0.05	0.11	m3
9	Saplings of cana, bamboo grass etc.	5.00	1.00			5.00	No
	(C.S.R.I. No. 9, Page No. 3, Parks and Garden2011-12)						

9 CHAIN LINK FENCING

Based on NAGPUR DSR 2011-2012

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	chain link fencing	1	1.00			1.00	Rmt

10 MONITORING ROOM

Based on NAGPUR DSR 2011-2012

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Excavation for foundation - up to 1.5 m /pipe trenches in earth, soils of all types , sand , gravel and soft murum,						
	Foundation Long wall	2.00	3.35	0.88	1.28	8.58	
	Short Wall	2.00	2.19	0.88	1.28	5.61	
	Steps	1.00	1.50	0.90	0.38	0.57	
						14.75	m3
2	Providing dry trap / granite / quartzite / gneiss, rubble stone soling in 15 cm to 20 cm thick						
	Foundation Long wall	2.00	3.35	0.88	0.23	1.36	
	Short Wall	2.00	2.19	0.88	0.23	0.89	
	Steps	1.00	1.50	0.90	0.23	0.31	
						2.55	m3
3	Providing and laying in situ following grades of Plain Cement concrete of trap P.C.C. M- 15						
	Long wall	2.00	3.35	0.88	0.15	0.88	
	Short Wall	2.00	2.19	0.88	0.15	0.58	
	Steps	1.00	1.50	0.90	0.15	0.20	
						1.67	m3
4	Providing second class burnt brick masonry with conventional/ I.S. type bricks in cement mortar 1:6 in foundations						
	Long wall	2.00	3.15	0.38	1.20	2.87	
	Short Wall	2.00	2.39	0.38	1.20	2.18	
	Steps	1.00	1.50	0.90	0.15	0.20	
		1.00	1.50	0.60	0.15	0.14	
		1.00	1.50	0.30	0.15	0.07	
						5.46	m3
5	Providing second class B.B. masonry wall						
	Long Wall	2.00	3.00	0.23	2.10	2.90	
	Short Wall	2.00	2.54	0.23	2.10	2.45	
						5.35	m3
6	Providing and fixing ISI 1729 /2002 grade 100 mm dia Cast Iron Soil Pipes with lugs including plug bend necessary - PVC pipe						

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
	From nearest building 6m height	3.00	0.30			0.90	Rmt
7	RSJ Structural work						
	Angle 75x75x 10						
		20.00	2.25	11.00	kg/rmt	495.00	
		15.00	3.30	11.00	kg/rmt	544.50	
						1039.50	Kg.
						1.04	MT
8	Providing and fixing Mangalore tiled roofing with class "AA" tiles including securing						
		2.00	2.25	3.30		14.85	m2
9	Providing and fixing Mangalore tile ridge and hip tiles of class "AA" including scaffolding						
		1.00	3.60			3.60	Rmt.
10	Providing sand faced plaster for external portion in cement mortar						
	Long wall	2.00	3.00	2.55		15.30	
	Short wall	2.00	3.00	2.95		17.70	
						33.00	m2
11	Providing internal cement plaster 25 mm thick in single coat in cement mortar 1:4						
	Long wall	2.00	3.00	2.10		12.60	
	Short wall	2.00	3.00	2.50		15.00	
	Ceiling	2.00	2.20	2.54		11.18	
						38.78	m2 (A)
	Less						
	Door	1.00	2.00	1.00		2.00	
	Window	1.00	0.90	0.60		0.54	
						2.54	m2 (B)
	Total Qnty. = (A)-(B)					36.24	m2
12	Providing & applying colour wash in three coats to old/new plastered						
	Qnty. Of I-11 + 20 % Extra					43.48	m2
13	Providing & applying colour wash in three coats to old/new plastered						
	Qnty. Of I-10 + 20 % Extra					39.60	m2

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
14	Providing and laying polished Kota Stone slabs 20mm to 25 mm thick						
		3.00	1.50	0.30		1.35	
		4.00	1.50	0.15		0.90	
						2.25	m2
15	Providing and fixing double leaf door,with country teak wood shutter and panels						
		1.00	2.00	1.00		2.00	m2
16	Supplying and fixing in position aluminium extruded section Two track	1.00	0.60	0.90		0.54	m2

11 DECK ALONG RIVER EDGE

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Excavation for foundation / pipe trenches in earth, soils of all types , sand , gravel and soft murum, up to 1.5 m						
	Retaining wall	1.00	12.00	2.25	0.88	23.76	m3
2	Providing dry trap/ rubble stone soling 15 cm to 20 cm thick including hand packing and compacting etc. complete						
	Retaining wall	1.00	12.00	1.95	0.23	5.38	m3
3	P.C.C M15 (plain cement concrete, M15 means grade of concrete which can be accived by design mix or using 1 part of cement, 2 parts of Sand and 4 parts of aggregates)						
	Retaining wall	1.00	12.00	1.95	0.15	3.51	m3
4	Demolition						
	Old Wall	1.00	12.00	0.45	1.50	8.10	m3
5	Providing and laying in situ cement concrete of trap/ granite/ quartzite/ gneiss metal for RCC work M-25						
	Retaining wall Base	1.00	12.00	1.65	0.30	5.94	m3
6	Providing and casting in situ C.C. of trap/granite/quartzite/gneiss metal of approved quality for RCC works R.C.C. M - 25						
	Retaining wall	1.00	12.00	1.70	0.45	9.18	
	Deck	1.00	12.00	2.44	0.20	5.86	
						15.04	m3
7	Providing and fixing in postion steel bar reinforcement of various diamters for RCC pipes,						
	R.C.C. Bedding & R.C.C. wall						
	l-7 & l-8 = 20.98 X 115 kgs.					2412.24	kgs.
		1.00				2.41	MT
8	Refilling the trenches with available excavated stuff with soft material						
	Between Retaining wall & Boundary wall						
	3.06 M3 - 0.6 - 0.24-0.525 - 0.06 = 1.635	1.00	12.00	1.50	0.60	10.80	m3
9	Filling in plinth and floors / trenches with contractor's murum for bedding in 15 cm to 20 cm						
	Provisional qnty.	1.00	12.00			12.00	m3
10	Removing excavated materials including debris from the site						
	l-1 - l-10 = 23.76 - 10.80 = 1.08	1.00				12.96	m3
11	Providing and fixinig railing	1.00	16.88		1.20	20.26	m2

12 FOOT PATH FOR NODE 9-10

Based on Nagpur DSR 2011-2012

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Excavation for foundation / pipe trenches in earth, soils of all types , sand - up to 1.5 m						
	Foot path	1.00	107.00	3.20	0.45	154.08	m3
2	Providing dry trap/ rubble stone soling 15 cm to 20 cm thick including hand packing and compacting etc. complete						
	Foot path	1.00	107.00	3.20	0.25	85.60	m3
3	P.C.C M15 (plain cement concrete, M15 means grade of concrete which can be accived by design mix or using 1 part of cement, 2 parts of Sand and 4 parts of aggregates)						
	Foot path	1.00	107.00	3.20	0.10	34.24	m3
4	Refilling the trenches with available excavated stuff with soft material						
	Provisional qnty.	1.00	107.00	3.20	1.45	496.48	M3
5	Filling in plinth and floors / trenches with contractor's murum						
	Provisional qnty.	1.00	107.00	3.20	1.45	496.48	m3
6	Removing excavated materials including debris from the site						
		1.00	107.00	3.20	1.45	496.48	m3
7	Providing and fixing in the carriageway interlocking concrete pavers unishape						
	pavers	1.00	107.00	1.00		107.00	m2

13 PLANTATION NODE 9-10

Based on NAGPUR DSR 2011-2012

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Excavation for foundation in Hard Murum - 1.5 to 3 m / pipe trenches in hard murum, including removing the excavated material	2	275	1.2	0.5	330	m3
2	Providing dry trap / granite / quartzite / gneiss, rubble stone soling in 15 cm to 20 cm thick						
		2	275	1.2	0.23	151.8	
						151.80	m3
3	Providing and laying in situ following grades of Plain Cement concrete of trap P.C.C. M- 15						
		2	275	1.2	0.15	99	
						99.00	m3
5	Providing uncoursed rubble masonry of trap/granite/quartzite/gneiss stones in cement mortar 1:6 in foundations and plinth of inner walls / in plinth of external walls including bailing out water, striking joints on unexposed faces and watering complete.						
		2	275	0.8	0.8	352	
						352.00	m3
6	Filling fresh garden soil /silt & manure in excavated area including lead up to a distance of 50mtrs.						
	(C.S.R. Road construction W.B.M. Sr. No. 37, RD-28 P. No. 229, 2011-12)	1.00	275.00	7.50	0.30	618.75	m3
8	GARDEN SOIL :- supplying on site garden soil , well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.) (C.S.R.I. No. 1, Page No. 2, Parks and Garden 2011-12)	1.00	275.00	7.50	0.30	618.75	m3

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
9	Planting trees					100.00	No
10	Saplings of flowering / shady trees, Gulmohar, Raintree, Paltophorum etc. (Minimum 1.20m height.					200.00	No
	(C.S.R.I. No. 8, Page No. 3, Parks and Garden2011-12)						
11	Providing and fixing ISI 1729 /2002 grade 100 mm dia Cast Iron Soil Pipes with lugs including plug bend necessary						
	Outlet Pipe from flower bed	50	0.75			37.50	Rmt
12	chain link fencing		275.00			275.00	Rmt

14 PLANTATION AND WALL NODE 11

Based on NAGPUR DSR 2011-2012

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Excavation for foundation - up to 1.5 m /pipe trenches in earth, soils of all types , sand , gravel and soft murum,						
	Compound wall	1	250	1.2	0.5	150.00	m3
	Pathway	1	225	2	0.5	225.00	m3
						375.00	m3
2	Providing dry trap / granite / quartzite / gneiss, rubble stone soling in 15 cm to 20 cm thick						
	Compound wall	1	250	1.2	0.23	69.00	m3
	Pathway	1	225	2	0.23	103.50	m3
						172.50	m3
3	Providing and laying in situ following grades of Plain Cement concrete of trap P.C.C. M- 15						
	Compound wall	1	250	1.2	0.15	45.00	m3
	Pathway	1	225	2	0.15	67.50	m3
						112.5	m3
4	Providing uncoursed rubble masonry of trap/granite/quartzite/gneiss stones in cement mortar 1:6 in foundations and plinth of inner walls / in plinth of external walls including bailing out water, striking joints on unexposed faces and watering complete.						
	Compound wall	1	250	0.8	0.8	160.00	m3
5	Providing second class burnt brick masonry with conventional/ I.S. type bricks in cement mortar 1:6 in foundations	2	225	0.23	0.3	31.05	m3
6	Providing sand face plaster externally to concrete, stone or brick surfaces using approved screened sand						
	Compound wall	2	250.00	0.50		250.00	m2
	Brick wall for bund	2	225.00	0.15		67.50	m2
						317.50	m2
7	Providing and fixing in the carriageway interlocking concrete pavers unishape						
	Pathway	1.00	225.00	2.00		450.00	m2
	coping for compound wall	1.00	250.00	0.80		200.00	m2
						650.00	m2
8	Filling fresh garden soil /silt & manure in excavated area including lead up to a distance of 50mtrs.						
	(C.S.R. Road construction W.B.M. Sr. No. 37, RD-28 P. No. 229, 2011-12)	1.00	250.00	2.00	1.50	750.00	m3

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
9	GARDEN SOIL :- supplying on site garden soil , well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.) (C.S.R.I. No. 1, Page No. 2, Parks and Garden2011-12)	1.00	250.00	2.00	1.50	750.00	m3
10	Planting trees	1.00	275.00			275.00	No
11	Saplins of small and medium ornamental flowering plants, Thuja, Cupresus, Palms, Ornamental Ficus, Musanda etc. (C.S.R.I. No. 9, Page No. 3, Parks and Garden2011-12)						
	around the temple					400.00	No
	in the garden					200.00	No
						600.00	No
12	planmtng trees						
	around the temple					200.00	No
	in the garden					100.00	No
						300.00	No
13	Providing and fixing ISI 1729 /2002 grade 100 mm dia Cast Iron Soil Pipes with lugs including plug bend necessary						
	Outlet Pipe from flower bed	50	0.75			37.50	rmt
14	Decorative chain link fencing		250.00			250.00	rmt

15 PLANTATION AND WALL NODE 15

Based on NAGPUR DSR 2011-2012

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Excavation for foundation in Hard Murum - 1.5 to 3 m / pipe trenches in hard murum, including removing the excavated material						
	school side	2	350	1.2	0.5	420	
	opposite side	1	350	0.75	0.5	131.25	
						551.25	m3
2	Providing dry trap / granite / quartzite / gneiss, rubble stone soling in 15 cm to 20 cm thick						
	school side	2	350	1.2	0.23	193.2	
	opposite side	2	350	0.6	0.23	96.6	
						289.80	m3
3	Providing and laying in situ following grades of Plain Cement concrete of trap P.C.C. M- 15						
	school side	2	350	1.2	0.15	126	
	opposite side	1	350	0.6	0.15	31.5	
						157.5	m3
5	Providing uncoursed rubble masonry of trap/granite/quartzite/gneiss stones in cement mortar 1:6 in foundations and plinth of inner walls / in plinth of external walls including bailing out water, striking joints on unexposed faces and watering complete.						
	school side	2	350	0.8	0.8	448	
	opposite side	1	350	0.45	0.8	126	
						574.00	m3
7	Filling fresh garden soil /silt & manure in excavated area including lead up to a distance of 50mtrs.						
	(C.S.R. Road construction W.B.M. Sr. No. 37, RD-28 P. No. 229, 2011-12)	1.00	350.00	12.00	0.30	1260.00	m3

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
8	GARDEN SOIL :- supplying on site garden soil , well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.) (C.S.R.I. No. 1, Page No. 2, Parks and Garden2011-12)	1.00	350.00	12.00	0.30	1260.00	m3
9	Planting trees school side		350.00			100.00	
	Planting trees opposite side					100.00	
						200.00	No
10	Saplings of small and medium ornamental flowering plants, Thuja, Cupresus, Palms, Ornamental Ficus, Musanda etc.		350.00			200.00	No
	(C.S.R.I. No. 9, Page No. 3, Parks and Garden2011-12)						
11	Providing and fixing ISI 1729 /2002 grade 100 mm dia Cast Iron Soil Pipes with lugs including plug bend necessary						
	Outlet Pipe from flower bed	50	0.75			37.50	Rmt
12	chain link fencing		350.00			350.00	Rmt

16 PLANTATION - RAVI NAGAR

Based on NAGPUR DSR 2011-2012

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Filling fresh garden soil /silt & manure in excavated area including lead up to a distance of 50mtrs.						
	(C.S.R. Road construction W.B.M. Sr. No. 37, RD-28 P. No. 229, 2011-12)	1.00	85.00	8.50	0.30	216.75	m3
2	GARDEN SOIL :- supplying on site garden soil , well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.) (C.S.R.I. No. 1, Page No. 2, Parks and Garden 2011-12)	1.00	85.00	8.50	0.30	216.75	m3
3	Planting trees					30.00	No
4	Saplings of flowering / shady trees, Gulmohar, Rain tree, Paltophorum etc. (Minimum 1.20m height.					30.00	No

17 MAHARAJA BAUG

Based on NAGPUR DSR 2011-2012

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Excavation for foundation - up to 1.5 m /pipe trenches in earth, soils of all types , sand , gravel and soft murum,						
	Jogging track	1	450	2	0.5	450.00	m3
						450.00	m3
2	Providing dry trap / granite / quartzite / gneiss, rubble stone soling in 15 cm to 20 cm thick						
	Jogging track	1	450	2	0.23	207.00	m3
						207.00	m3
3	Providing and laying in situ following grades of Plain Cement concrete of trap P.C.C. M- 15						
	Jogging track	1	450	2	0.15	135.00	m3
						135	m3
4	Providing second class burnt brick masonry with conventional/ I.S. type bricks in cement mortar 1:6 in foundations	2	450	0.23	0.3	62.10	m3
5	Providing sand face plaster externally to concrete, stone or brick surfaces using approved screened sand						
		2	450.00	0.15		135.00	m2
6	Providing and fixing in the carriageway interlocking concrete pavers unishape						
	Jogging track	1.00	450.00	2.00		900.00	m2
						900.00	m2
7	Planting trees	2.00	450.00			300.00	No
8	Saplins of flowering / shady trees, Gulmohar, Raintree, Paltophorum etc. (Minimum 1.20m height. (C.S.R.I. No. 8, Page No. 3, Parks and Garden2011-12)					300.00	No

18 SANGAM - NAG AND PILI

Based on NAGPUR DSR 2011-2012

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Filling fresh garden soil /silt & manure in excavated area including lead up to a distance of 50mtrs.						
	(C.S.R. Road construction W.B.M. Sr. No. 37, RD-28 P. No. 229, 2011-12)	2.00	500.00	3.00	0.30	900.00	m3
2	GARDEN SOIL :- supplying on site garden soil , well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.) (C.S.R.I. No. 1, Page No. 2, Parks and Garden2011-12)	2.00	500.00	3.00	0.30	900.00	m3
3	Planting trees		500.00			160.00	No
4	Saplings of flowering / shady trees, Gulmohar, Rain tree, Paltophorum etc. (Minimum 1.20m height. (C.S.R.I. No. 8, Page No. 3, Parks and Garden2011-12)					160.00	No

19 ELEVATED PATHWAY - NODE 5

Based on Nagpur DSR 2011-2012

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Excavation for foundation / pipe trenches in earth, soils of all types , sand , gravel and soft murum, up to 1.5 m						
	Retaining wall	1.00	1.00	3.40	1.50	5.10	m3
2	Excavation for foundation - 1.5 to 3 m / pipe trenches in earth, soils of all types , sand , gravel and soft murum						
	Retaining wall	1.00	1.00	1.80	0.68	1.22	m3
						1.22	(A)
	Say 50%					0.61	m3
3	Excavation for foundation in Hard Murum - 1.5 to 3 m / pipe trenches in hard murum, including removing the excavated material						
	say 50 % of I- 2 (A)	1.00				0.61	m3
4	Providing dry trap/ rubble stone soling 15 cm to 20 cm thick including hand packing and compacting etc. complete						
	Retaining wall	1.00	1.00	1.95	0.23	0.45	m3
5	P.C.C M15 (plain cement concrete, M15 means grade of concrete which can be accived by design mix or using 1 part of cement, 2 parts of Sand and 4 parts of aggregates)						
	Retaining wall	1.00	1.00	1.95	0.15	0.29	m3
6	Providing and laying in situ cement concrete of trap/ granite/ quartzite/ gneiss metal for RCC work M-25						
	Retaining wall Base	1.00	1.00	1.65	0.30	0.50	m3
7	Providing and casting in situ C.C. of trap/granite/quartzite/gneiss metal of approved quality for RCC works R.C.C. M - 25						
	Retaining wall	1.00	1.00	0.45	2.70	1.22	
	Deck	1.00	1.00	0.20	1.59	0.32	
						1.53	m3
8	Providing and fixing in postion steel bar reinforcement of various diamters for RCC pipes,						

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
	R.C.C. Bedding & R.C.C. wall						
	I-8 & I-9 = 2.03 X 115 kgs.					233.45	kgs.
		1.00				0.233	MT
9	Refilling the trenches with available excavated stuff with soft material						
		1.00	1.00	0.95	1.50	1.43	m3
10	Filling in plinth and floors / trenches with contractor's murum for bedding in 15 cm to 20 cm						
	Provisional qnty.	1.00				0.50	m3
11	Removing excavated materials including debris from the site						
	I-1 - I-9 = 1.98 - 0.9 = 1.08	1.00				1.08	m3
12	Railing Steel as per detailed drawings & designs by Consultant & as per instruction	1.00	1.00		1.20	1.20	m2
13	Providing uncoursed rubble masonry of trap/granite/quartzite/gneiss stones in cement mortar 1:6						
	for Steps	1.00	1.00	0.80	0.40	0.32	
		1.00	1.00	0.40	0.40	0.16	
						0.48	m3
14	Providing and laying polished Shahabad Stone Flooring 20 mm to 25 mm thick						
	RCC Slab	1.00	1.00	2.00		2.00	
	Steps	1.00	1.00	0.80		0.80	
						2.80	m2

20 LOWER PATHWAY - NODE 5

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Excavation for foundation / pipe trenches in earth, soils of all types , sand - up to 1.5 m						
	Pathway (considered sloping ground)	1.00	1.00	2.95	1.00	2.95	
						2.95	m3
2	Providing dry trap/ rubble stone soling 15 cm to 20 cm thick including hand packing and compacting etc. complete						
	Pathway	1.00	1.00	2.30	0.25	0.58	
	River side wall	1.00	1.00	0.35	0.25	0.09	
	Inner wall	1.00	1.00	0.40	0.25	0.10	
						0.76	m3
3	P.C.C M15 (plain cement concrete, M15 means grade of concrete which can be accived by design mix or using 1 part of cement, 2 parts of Sand and 4 parts of aggregates)						
	River side wall	1.00	1.00	0.35	0.15	0.05	
	Inner wall	1.00	1.00	0.40	0.15	0.06	
						0.11	m3
4	Refilling the trenches with available excavated stuff with soft material						
	Provisional qnty.	1.00				0.05	m3
5	Filling in plinth and floors / trenches with contractor's murum						
	Provisional qnty.	1.00				0.05	
						0.05	m3
6	Removing excavated materials including debris from the site						
	$I-1 - I-4 = 2.95 - 0.05 = 0.40$	1.00				2.90	m3
7	Providing and fixing in the carriageway interlocking concrete pavers unishape pavers for pathway	1.00	1.00	2.30		2.30	
						2.30	m2
8	Providing and casting in situ cement concrete M-15 of trap/ granite/quartzite/gneiss metal for coping to plinth						
	River side wall	1.00	1.00	0.25	0.05	0.01	
	Inner wall	1.00	1.00	0.30	0.05	0.02	
						0.03	m3
9	Railing Steel as per detailed drawings & designs by Consultant & as per instruction	1.00	1.00		1.20	1.20	m2
10	Filling fresh garden soil/silt & manure in excavated area including lead up to a distance of 50mtrs.						
		1.00	1.00	4.00	0.30	1.20	m3

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
11	GARDEN SOIL :- supplying on site garden soil, well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.)	1.00	1.00	4.00	0.30	1.20	m ³
12	Saplins of small and medium ornamental flowering plants, Thuja, Cupresus, Palms, Ornamental Ficus, Musanda etc.	1.00	1.00	4.00	0.30	10.00	No
13	Planting small size ornamental plants	1.00	1.00	4.00	0.30	10.00	No

	21 AMPHI-SEATING - NODE 5						
Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Excavation for foundation / pipe trenches in earth, soils of all types , sand - up to 1.5 m						
	Amphi-seating	1.00	36.00		1.00	36.00	
						36.00	m3
2	Providing dry trap/ rubble stone soling 15 cm to 20 cm thick including hand packing and compacting etc. complete						
	Amphi-seating open space	1.00	36.00		1.00	36.00	
	Amphi-seating steps	1.00	84.00	3.10	0.25	65.10	
						101.10	m3
3	P.C.C M15 (plain cement concrete, M15 means grade of concrete which can be accived by design mix or using 1 part of cement, 2 parts of Sand and 4 parts of aggregates)						
	For steps - 6 no	1.00	84.00	3.10	0.15	39.06	
						39.06	m3
4	Filling in plinth and floors / trenches with contractor's murum						
	For Amphi-steps	1.00	14.00	3.60	1.35	68.04	
						68.04	m3
5	Providing and fixing in the carriageway interlocking concrete pavers unishape						
	Open space in Amphi-seating	1.00	1.00	16.00		16.00	
						16.00	m2
6	Providing uncoursed rubble masonry of trap/granite/quartzite/gneiss stones in cement mortar 1:6						
	6 Steps	1.00	84.00	0.60	0.50	25.20	m3
7	Providing and laying polished Shahabad Stone Flooring 20 mm to 25 mm thick						
	for steps	1.00	84.00	0.60		50.40	m2

22 PLANTATION AND EDGE WALL - NODE 12

Based on Nagpur DSR 2011-2012

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Excavation for foundation / pipe trenches in earth, soils of all types , sand , gravel and soft murum, up to 1.5 m						
	Retaining wall	1	1200	1.8	0.85	1836	m3
2	Providing dry trap/ rubble stone soling 15 cm to 20 cm thick including hand packing and compacting etc. complete						
	Retaining wall	1	1200	1.2	0.25	360	m3
3	P.C.C M15 (plain cement concrete, M15 means grade of concrete which can be accived by design mix or using 1 part of cement, 2 parts of Sand and 4 parts of aggregates)						
	Retaining wall	1	1200	1.2	0.1	144	m3
5	Dewatering - 10 to 19 HP. Pump the excavated trenches and pools of water in the building trenches						
	Retaining wall	20	1200			24000	hours
6	Providing and laying in situ cement concrete of trap/ granite/ quartzite/ gneiss metal for RCC work M-25						
	Retaining wall	1	1200	1.05	0.25	315.00	m3
7	Providing and casting in situ C.C. of trap/granite/quartzite/gneiss metal of approved quality for RCC works R.C.C. M - 25						
	Retaining wall	1	1200	0.25	1.75	525.00	m3
8	Providing and fixing in postion steel bar reinforcement of various diamters for RCC pipes,						
	R.C.C. Bedding & R.C.C. wall						
	I-6 & I-7 = 1.40 X 115 kgs.					193200.00	kgs.
		1				193.20	MT
9	Refilling the trenches with available excavated stuff with soft material						
	Between Retaining wall & Boundary wall						
	3.06 M3 - 0.6 - 0.24-0.525 - 0.06 = 1.635	1				1962.00	M3
10	Filling in plinth and floors / trenches with contractor's murum for bedding in 15 cm to 20 cm						
	Provisional qnty.	1				600.00	m3
11	Removing excavated materials including debris from the site						
	I-1 - I -13 = 3.06 - 1.635 = 1.425	1				1710.00	m3

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
12	Filling fresh garden soil/silt & manure in excavated area including lead up to a distance of 50mtrs.						
	(C.S.R. Road construction W.B.M. Sr. No. 37, RD-28 P. No. 229, 2011-12)	1.00	1200.00	0.75	0.90	810.00	m3
13	GARDEN SOIL :- supplying on site garden soil, well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.) (C.S.R.I. No. 1, Page No. 2, Parks and Garden2011-12)	1.00	1200.00	0.75	0.90	810.00	m3
14	Saplings of small and medium ornamental flowering plants, Thuja, Cupresus, Palms, Ornamental Ficus, Musanda etc.	1.00	1200.00	0.75	0.90	810.00	No
	(C.S.R.I. No. 9, Page No. 3, Parks and Garden2011-12)						
15	Drip Irrigation	1	1			1200	rmt
	PLANTATION WITH EDGE WALL						
1	Excavation for foundation in Hard Murum - 1.5 to 3 m / pipe trenches in hard murum, including removing the excavated material	2	140	1.2	0.5	168	m3
2	Providing dry trap / granite / quartzite / gneiss, rubble stone soling in 15 cm to 20 cm thick						
		2	275	1.2	0.23	151.8	m3
3	Providing and laying in situ following grades of Plain Cement concrete of trap P.C.C. M- 15						
		2	275	1.2	0.15	99	m3
5	Providing uncoursed rubble masonry of trap/granite/quartzite/gneiss stones in cement mortar 1:6 in foundations and plinth of inner walls / in plinth of external walls including bailing out water, striking joints on unexposed faces and watering complete.						
		2	275	0.8	0.8	352	m3

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
6	Filling fresh garden soil /silt & manure in excavated area including lead up to a distance of 50mtrs.						
	(C.S.R. Road construction W.B.M. Sr. No. 37, RD-28 P. No. 229, 2011-12)	1.00	275.00	7.50	0.30	618.75	m3
8	GARDEN SOIL :- supplying on site garden soil , well sieved 90% to pass through I.S. sieve of 10mm size free from stones rubbish like dried grass roots and other such materials. The soil should be fresh from quarry. The colour the soil generally be red. The soil will be measured by measuring box. (Farma) (Item includes Royalty charges, octroi, Corporation Tax Transporting Loading Unloading etc.) (C.S.R.I. No. 1, Page No. 2, Parks and Garden2011-12)	1.00	275.00	7.50	0.30	618.75	m3
9	Planting trees					100.00	No
10	Saplings of flowering / shady trees, Gulmohar, Raintree, Paltothorum etc. (Minimum 1.20m height. (C.S.R.I. No. 8, Page No. 3, Parks and Garden2011-12)					200.00	No
11	Providing and fixing ISI 1729 /2002 grade 100 mm dia Cast Iron Soil Pipes with lugs including plug bend necessary						
	Outlet Pipe from flower bed	50	0.75			37.50	Rmt
12	chain link fencing		140.00			140.00	Rmt

23 CLEANING RIVER BED

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Excavation for foundation in earth, soils of all types, sand, gravel and soft murum,Spec.No. : Bd.A.1/Page No.259)	2	1	1.5	1.5	4.5	m3
2	Transportation of material obtained from debris of various sorts including necessary excavation/loosing including loading, unloading and conveying and disposing as directed.						
	(e) For 5 Km.	2	1	1.5	1.5	4.5	m3

24 FOOTPATH DETAIL

Based on Nagpur DSR 2011-2012

Sr. No.	Item	No	Length	Breadth	Height	Quantity	Unit
1	Excavation for foundation / pipe trenches in earth, soils of all types , sand - up to 1.5 m						
	Foot path	1.00	1.00	1.50	0.45	0.68	m3
2	Providing dry trap/ rubble stone soling 15 cm to 20 cm thick including hand packing and compacting etc. complete						
	Foot path	1.00	1.00	1.50	0.25	0.38	m3
3	P.C.C M15 (plain cement concrete, M15 means grade of concrete which can be accived by design mix or using 1 part of cement, 2 parts of Sand and 4 parts of aggregates)						
	Foot path	1.00	1.00	1.50	0.10	0.15	m3
4	Refilling the trenches with available excavated stuff with soft material						
	Provisional qnty.	1.00				0.05	M3
5	Filling in plinth and floors / trenches with contractor's murum						
	Provisional qnty.	1.00				0.05	m3
6	Removing excavated materials including debris from the site						
	$l-1 - l-4 = 0.68 - 0.05 = 0.40$	1.00				0.63	m3
7	Providing and fixing in the carriageway interlocking concrete pavers unishape						
	pavers	1.00	1.00	1.50		1.50	m2

NAGPUR MUNICIPAL CORPORATION

PENCH PROJECT CELL

Augmenting to Water Supply of Nagpur City, Pench-IV Laying of Proposed Pure Water Feeder Mains

Name of Work:- Proposed Pipe Line Crossing at Ramdaspeth Nallah for 1100 dia pipe.
(Length 20 m)

DETAILED ESTIMATE

MEASUREMENT

(As per PWD/MJP CSR 2011-12)

DESCRIPTION OF ITEM	No.	L	B	D	Qty.	Unit
1	2	3	4	5	6	7
ITEM NO. 1 Excavation for foundation in earth, soils of all types, sand, gravel and soft murrum, including shoring and strutting as necessary and disposing off excavated stuff within lead of 100 m as directed etc. complete. (i) Lift upto 1.5 m.	2	4.6	2.1	1.0	19.32	Cum
ITEM NO. 2 Excavation for foundation in hard murrum, including shoring and strutting as necessary and disposing off excavated stuff within lead of 100 m as directed etc. complete. (i) Lift above 1.5 m to 3.00 m depth	2	4.6	2.1	2.0	38.64	Cum
ITEM NO. 3 Excavation for foundation in hard murrum and boulders including shoring and strutting as necessary and disposing off excavated stuff within lead of 100 m as directed etc. complete. (i) Lift above 3.00 m to 4.5 m	2	4.6	2.1	1.5	28.98	Cum
ITEM NO. 4 Excavation for foundation in soft rock including shoring and strutting as necessary and disposing off excavated stuff within lead of 100 m as directed etc. complete. (i) Above 3 to 6 m	2	4.6	2.1	0.5	9.66	Cum
ITEM NO. 5 Providing and laying in situ, cement concrete in M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood, steel form work, compacting, finishing uneven and honeycombed surface curing etc. complete. The cement mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc.	2	4.2	1.7	0.15	2.142	Cum

DESCRIPTION OF ITEM	No.	L	B	D	Qty.	Unit
1	2	3	4	5	6	7
ITEM NO. 6						
Providing and laying in situ cement concrete of required grade of trap/ granite/quartzite/gneiss metal for R.C.C.raft/columns as per detailed design and drawings or as directed, including steel centering, plywood/steel formwork, compacting, finishing uneven and honeycombed surface with C.M.1:3 of sufficient minimum thickness to give smooth and even surface or roughening the surface if special finish is to be provided and curing ect. complete. Including use of plastisizer wherever necessary as directed by Engineer (excluding reinforcement, including cover block). The cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic tarpaulin etc. (Wooden centering will not be allowed)						
(i) For Footing	2	4.00	1.5	0.5	6.00	Cum
(ii) For Foundation	2	3.00	0.5	7.5	22.50	Cum
Total					28.50	
ITEM NO. 7						
Providing and fixing in position reinforcement of various diameters for RCC pile caps, footings, foundations, slabs, beams and columns, canopies, staircases, newels, chajjas, lintels, pardies, coping, fins, arches etc. as per detailed design and drawings and schedules including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required completed.						
(i) For TMT/HYSD steel Bars						
8 mm	106	7.3	773.8	0.39	0.30	
10 mm	16	9.00	144.0	0.61	0.09	
	40	4.00	160.0	0.61	0.10	
12 mm	92	8.3	763.6	0.88	0.67	
					1.16	M.T.
ITEM NO. 8						
Providing and fabricating structural steel plate girder including fabrication of built up section as per detail design and drawing including cutting, fabricating erecting hoisting, fixing in position, making riveted /bolted / weld connection and including two coat of red oxide and two coat of oil paint of approved quality etc. complete						
(A) For Bottom (Bracing)						
(i) Bracing ISA 80X80X8 (1)	16	2.400			368.64	KG
(ii) ISA 80X80X8 (2)	4	20.400			783.36	KG
ISA 80X80X8 (2)	8	2.4			184.32	KG
(iii) Vertical ISMC 75 (3)	34	2.00			462.40	KG
(B) For Top (Bracing)						
(i) Bracing ISA 80X80X8 (1)	20	2.4			460.80	KG
(b) ISA 80X80X8 (2)	4	20.400			783.36	KG
(c) ISA 50x50x6 (3)	17	2.00			166.60	KG
(C) For Truss (Bracing)						
(i) Vertical ISA 80X80X8 (1)	4	2.100			80.64	KG
(ii) Vertical ISA 80X80X8 (2)	26	2.100			524.16	KG
(iii) Bracing ISA 50X50X6 (5)	15	2.4			176.40	KG

DESCRIPTION OF ITEM	No.	L	B	D	Qty.	Unit
1	2	3	4	5	6	7
(i) ISA 50X50X6 (Top+Truss)					343.00	KG
(ii) ISA 80X80X8 (Bottom+Top+Truss)					3185.28	KG
(iii) Vertical ISMC 75 (Bottom)					462.40	KG
Total Bracing (A+B+C)					3.99	M.T.
(A) For Gusset Plate 10 mm for (Bottom)	5	0.3	0.2		17.66	KG
	9	0.3	0.2		42.39	KG
	16	0.3	0.3		113.04	KG
	4	0.3	0.4		37.68	KG
Total Gusset Plate Bottom					210.77	KG
(B) For Gusset Plate 10 mm for (Top)	6	0.3	0.2		21.20	KG
	5	0.3	0.2		23.55	KG
	18	0.3	0.2		84.78	KG
	7	0.3	0.3		49.46	KG
	4	0.3	0.4		37.68	KG
Total Gusset Plate Top					216.66	KG
(C) For Gusset Plate 10 mm for (Truss for Vertical)	20	0.3	0.2		70.65	KG
	12	0.3	0.2		56.52	KG
	1	0.2	0.2		3.14	KG
	1	0.3	0.3		7.07	KG
Total Gusset Plate Truss for Vertical					137.38	KG
(D) For Base Plate 12 mm	4	0.300	0.3		34.02	KG
Total Base Plate					34.02	KG
Total Plate (A+B+C+D)					0.60	M.T.
Foundation Bolt 16 mm	12	0.6			0.40	M.T.
Total (Bracing, Plate & Bolt)					4.99	M.T.
ITEM NO. 9						
Providing, constructing coffer dam in river basin / dam storages as per type design including excavation, filling, the middle portion with B.C. soil (in gunny bags if required). Providing impervious / sempervioous materials on bothsice of B.C. soil (in gunny bags if required) including ramming, compacting to the satisfaction of Engineer-in-charge, till the completion of work including dismenteling coffer dam after completion of works and disposing off the material as directed by the Engineer-in-charge.						
	4	10.00	2.0	2.5	200.00	Cum
	4	7.5	2.0	2.5	150.00	
					350.00	
ITEM NO. 10						
Dewatering the excavated trenches and pools of water in the building trenches / pipelind trenches, well works by using pups and other devices including disposing off water to safe distance as directed by Engineer-in-charge (including cost of machinery, labour, fuel), etc. complete.						
	1	20			20.00	Rmt

EECP(1)

NAGPUR MUNICIPAL CORPORATION

PENCH PROJECT CELL

Augmenting to Water Supply of Nagpur City, Pench-IV Laying of Proposed Pure Water Feeder Mains

RATE ANALYSIS

DESCRIPTION OF ITEM	CSR ITEM NO AND PAGE NO.	UNIT	FINAL RATE
1	2	3	4
ITEM NO. 1 Excavation for foundation in earth, soils of all types, sand, gravel and soft murrum , including shoring and strutting as necessary and disposing off excavated stuff within lead of 100 m as directed etc. complete. (i) Lift upto 1.5 m. Add for Municipal Limit @5% Total Rate Adopted	As Per PWD CSR 2011-12, 1 BR 3A1, Page No. 191	Cum	125.00 6.25 131.25
ITEM NO. 2 Excavation for foundation in hard murrum , including shoring and strutting as necessary and disposing off excavated stuff within lead of 100 m as directed etc. complete. (i) Lift above 1.5 m to 3.00 m depth Add for Municipal Limit @5% Total Rate Adopted	As Per PWD CSR 2011-12, 4 BR 3B, Page No. 192	CUM	168.00 8.40 176.40
ITEM NO. 3 Excavation for foundation in hard murrum and boulders including shoring and strutting as necessary and disposing off excavated stuff within lead of 100 m as directed etc. complete. (i) Lift above 3.00 m to 4.5 m Add for Municipal Limit @5% Total Rate Adopted	As Per PWD CSR 2011-12, 5 BR 3C, Page No. 192	CUM	186.00 9.30 195.30
ITEM NO. 4 Excavation for foundation in soft rock including shoring and strutting as necessary and disposing off excavated stuff within lead of 100 m as directed etc. complete. (i) Above 3 to 6 m Add for Municipal Limit @5% Total Rate Adopted	As Per PWD CSR 2011-12, 6 BR 3D, Page No. 192	CUM	305.00 15.25 320.25
ITEM NO. 5 Providing and laying in situ, cement concrete in M-15 of trap/granite/quartzite/gneiss metal for foundation and bedding including bailing out water, plywood, steel form work, compacting, finishing uneven and honeycombed surface curing etc. complete. The cement mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic, tarpaulin etc. Add for Municipal Limit @5% Total Rate Adopted	As Per PWD CSR 2011-12, 11 BR 5F, Page No. 195	CUM	3340.00 167.00 3507.00

DESCRIPTION OF ITEM	CSR ITEM NO AND PAGE NO.	UNIT	FINAL RATE
1	2	3	4
ITEM NO. 6 Providing and laying in situ cement concrete of required grade of trap/ granite/quartzite/gneiss metal for R.C.C.raft/columns as per detailed design and drawings or as directed, including steel centering, plywood/steel formwork, compacting, finishing uneven and honeycombed surface with C.M.1:3 of sufficient minimum thickness to give smooth and even surface or roughening the surface if special finish is to be provided and curing ect. complete. Including use of plastisizer wherever necessary as directed by Engineer (excluding reinforcement, including cover block). The cement Mortar 1:3 plaster is considered for rendering uneven and honeycombed surface only. Newly laid concrete shall be covered by gunny bag, plastic tarpaulin etc. (Wooden centering will not be allowed) (i) For M-25 Add for Municipal Limit @5% Total Rate Adopted	AS PER PWD CSR 2011-12, 15 BR 5C, Page No. 198	Cum	4250.00 212.50 4462.50
ITEM NO. 7 Providing and fixing in position reinforcement of various diameters for RCC pile caps, footings, foundations, slabs, beams and columns, canopies, staircases, newels, chajjas, lintels, pardies, coping, fins, arches etc. as per detailed design and drawings and schedules including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required completed. (i) For TMT/HYSD steel Bars Add for Municipal Limit @5% Total Rate Adopted	As Per PWD CSR 2011-12, 35 BR 35, Page No. 206	M.T.	54530.00 2726.50 57256.50
ITEM NO. 8 Providing and fabricating structural steel plate girder including fabrication of built up section as per detail design and drawing including cutting, fabricating erecting hoisting, fixing in position, making riveted /bolted / weld connection and including two coat of red oxide and two coat of oil paint of approved quality etc. complete Add for Municipal Limit @5% Total Rate Adopted	As Per PWD CSR 2011-12, 68, Page No. 221	M.T.	95600.00 4780.00 100380.00

DESCRIPTION OF ITEM	CSR ITEM NO AND PAGE NO.	UNIT	FINAL RATE
1	2	3	4
ITEM NO. 9 Providing, constructing coffer dam in river basin / dam storages as per type design including excavation, filling, the middle portion with B.C. soil (in gunny bags if required). Providing impervious / sempervioous materials on bothsice of B.C. soil (in gunny bags if required) including ramming, compacting to the satisfaction of Engineer-in-charge, till the completion of work including dismanteling coffer dam after completion of works and disposing off the material as directed by the Engineer-in-charge. Add for Municipal Limit @5% Total Rate Adopted	As Per MJP CSR 2011-12, Sr. No. 1 , Page No. 249	Cum	495.00 24.75 519.75
ITEM NO. 10 Dewatering the excavated trenches and pools of water in the building trenches / pipelind trenches, well works by using pups and other devices including disposing off water to safe distance as directed by Engineer-in-charge (including cost of machinery, labour, fuel), etc. complete. Add for Municipal Limit @5% Total Rate Adopted	As Per MJP CSR 2011-12, Sr. No. 15, Page No. 251	Rmt	649.00 32.45 681.45

Note: Rate for refilling and transportation of excavate material items are not considered as the items are already available in existing estimates.

NAGPUR MUNICIPAL CORPORATION NAGPUR

Rejuvenation to Nag River

Name of work :- Providing, lowering , laying & jointing of Sewer Mains in Nag River for Central Zone

MEASUREMENT SHEET 26

Sr No	Description	length	Width	Depth	Quantity	Unit
A	Sewer mains					
A-1	A-1: Providing and laying of gravity sewer in Nag					
1.(i)	River of Central Zone					
1	Item No1					
	Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 metres and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete.					
a	Dia.150 mm	1000	0.75	1.50	1125	Cum
		200	1.25	1.50	375	Cum
		38	1.75	1.50	99.75	Cum
			2.25	1.50	0	Cum
			2.75	1.50	0	Cum
b	Dia.200 mm	100.00	0.80	1.50	120	Cum
		100.00	1.30	1.50	195	Cum
		10.00	1.80	1.50	27	Cum
			2.25	1.50	0	Cum
			2.50	1.50	0	Cum
c	Dia.225 mm	600.00	0.80	1.50	720	Cum
		50.00	1.30	1.50	98	Cum
		44.00	1.80	1.50	119	Cum
			2.30	1.50	0	Cum
d	Dia.250 mm	100.00	0.85	1.50	128	Cum
		50.00	1.35	1.50	101	Cum
		47.00	1.85	1.50	130	Cum
			2.35	1.50	0	Cum
			2.85	1.50	0	Cum
e	Dia.300 mm	1000.00	0.90	1.50	1350	Cum
		200.00	1.40	1.50	420	Cum
		12.00	1.90	1.50	34.2	Cum
			2.40	1.50	0	Cum
			2.90	1.50	0	Cum
f	Dia.350 mm	200.00	0.95	1.50	285	Cum
		100.00	1.45	1.50	218	Cum
		6.00	1.95	1.50	18	Cum
			2.45	1.50	0	Cum
g	Dia.400 mm	200.00	1.00	1.50	300	Cum
		250.00	1.50	1.50	563	Cum
		47.00	2.00	1.50	141	Cum
			2.50	1.50	0	Cum

Sr No	Description	length	Width	Depth	Quantity	Unit
	i	Dia.500 mm		3.00	1.50	0 Cum
			54.00	1.10	1.50	89.1 Cum
			50.00	1.60	1.50	120 Cum
			50.00	2.10	1.50	157.5 Cum
			50.00	2.60	1.50	195 Cum
	j	Dia.600 mm	50.00	3.10	1.50	233 Cum
			100.00	1.20	1.50	180 Cum
			38.00	1.70	1.50	97 Cum
			10.00	2.20	1.50	33 Cum
				2.70	1.50	0 Cum
	k	Dia.700 mm		3.20	1.50	0 Cum
				1.30	1.50	0 Cum
				1.80	1.50	0 Cum
				2.30	1.50	0 Cum
				2.80	1.50	0 Cum
	i	Dia.800 mm		3.30	1.50	0 Cum
			200.00	1.40	1.50	420 Cum
			100.00	1.90	1.50	285 Cum
			41.00	2.40	1.50	148 Cum
				2.90	1.50	0 Cum
	m	Dia.900 mm		3.40	1.50	0 Cum
				3.90	1.50	0 Cum
				4.40	1.50	0 Cum
				4.90	1.50	0 Cum
				5.40	1.50	0 Cum
				5.90	1.50	0 Cum
				6.40	1.50	0 Cum
			1000	1.50	1.50	2250 Cum
			600	2.00	1.50	1800 Cum
			57	2.50	1.50	214 Cum
				3.00	1.50	0 Cum
				3.50	1.50	0 Cum
				4.00	1.50	0 Cum
				4.50	1.50	0 Cum
				5.00	1.50	0 Cum
	n	Dia.1000 mm		5.50	1.50	0 Cum
				6.00	1.50	0 Cum
				0.60	1.50	0 Cum
			400.00	1.60	1.50	960 Cum
			100.00	2.10	1.50	315 Cum
q		Dia.1500 mm	61.00	2.60	1.50	238 Cum
			61.00	3.10	1.50	284 Cum
			400.00	2.00	1.50	1200 Cum
			50.00	2.50	1.50	188 Cum
			50.00	3.00	1.50	225 Cum
			51.00	3.50	1.50	268 Cum
				4.00	1.50	0 Cum
				4.50	1.50	0 Cum
				5.00	1.50	0 Cum
				5.50	1.50	0 Cum

Sr No	Description	length	Width	Depth	Quantity	Unit		
2	r	Dia.1600 mm	500.00	6.00	1.50	0	Cum	
			200.00	6.50	1.50	0	Cum	
			48.00	7.00	1.50	0	Cum	
			200.00	2.20	1.50	1650	Cum	
			200.00	2.70	1.50	810	Cum	
			48.00	3.20	1.50	230	Cum	
			600.00	4.20	1.50	0	Cum	
			100.00	2.20	1.50	1980	Cum	
			28.00	2.70	1.50	405	Cum	
			350.00	3.20	1.50	134	Cum	
			300.00	4.20	1.50	0	Cum	
			50.00	2.40	1.50	1260	Cum	
			74.00	2.90	1.50	1305	Cum	
			200.00	3.40	1.50	255	Cum	
			190.00	3.90	1.50	433	Cum	
	s	Dia.1800 mm	41.00	4.40	2.50	0	Cum	
			200.00	4.90	3.50	0	Cum	
			190.00	2.80	1.50	840	Cum	
			41.00	3.30	1.50	940.5	Cum	
			1400.00	3.80	1.50	234	Cum	
			100.00	4.30	1.50	0	Cum	
	t	Dia.2000 mm	79.00	3.00	1.50	6300	Cum	
			200.00	3.50	1.50	525	Cum	
			100.00	4.00	1.50	474	Cum	
			200.00	4.50	1.50	0	Cum	
			50.00	3.20	1.50	0	Cum	
			47.00	3.70	1.50	0	Cum	
	u	Dia.2100 mm	200.00	4.20	1.50	0	Cum	
			50.00	4.70	1.50	0	Cum	
			47.00	5.20	1.50	0	Cum	
			200.00	3.20	1.50	960	Cum	
			50.00	3.70	1.50	278	Cum	
			47.00	4.20	2.50	494	Cum	
		A)Total Qty for pipe		12484.50			35977	Cum
		Excavation for M.H & Drop holes						
		1	Excavation for M.H.	Nos	0.785*D2	Depth		
			900 mm X 1.50M Depth		5.72	1.50	573	
			12000 mm X 1.50M Depth	54	7.07	1.50	588	
			1500mm X 3.50M Depth	27	14.51	1.50	582	
	1500 mm x 4.50M Depth	17	22.05	1.50	562			
	1500 mm x 6.0M Depth	40	31.16	1.50	1870			
	1500 mm x 7.5M Depth	35	41.83	1.50	2196			
	1800 mm X 3.0M Depth	3	16.61	1.50	75			
	1800 mm X 4.5M Depth	3	24.62	1.50	111			
	1800 mm X 6.0M Depth	1	41.83	1.50	63			
	2400 mm X 3.0M Depth	2	21.23	1.50	64			
	2400 mm X 4.50M Depth	12	30.18	1.50	543			
	2400 mm X 6.0M Depth	12	41.83	1.50	753			
	3000mm X 4.50M Depth	4	52.78	1.50	317			
B)Total Qty for M.H					7715			

Sr No	Description	length	Width	Depth	Quantity	Unit
	Total including M.H.	12187.5			43692.00	cum
	Proposed Quantity in this strata	60.00%	of total Qty		26215.20	cum
	1.5 to 3.0 m lift					
a	Dia.150 mm	200.00	0.75	1.50	225	cum
		38.00	1.25	1.50	71.25	cum
			1.75	1.50	0	cum
			2.25	1.50	0	cum
b	Dia.200 mm	100.00	0.80	1.50	120	cum
		10.00	1.30	1.50	20	cum
			1.80	1.50	0	cum
			2.30	1.50	0	cum
c	Dia.225 mm	50.00	0.80	1.50	60	cum
		44.00	1.30	1.50	86	cum
			1.80	1.50	0	cum
d	Dia.250 mm	50.00	0.85	1.50	63.75	cum
		47.00	1.35	1.50	95	cum
			1.85	1.50	0	cum
e	Dia.300 mm	200.00	0.90	1.50	270	cum
		12.00	1.40	1.50	25	cum
			1.90	1.50	0	cum
			2.40	1.50	0	cum
f	Dia.350 mm	100	0.95	1.50	143	cum
		6.00	1.45	1.50	13	cum
			1.95	1.50	0	cum
			2.45	1.50	0	cum
g	Dia.400 mm	250.00	1.00	1.50	375	cum
		47.00	1.50	1.50	105.75	cum
			2.00	1.50	0	cum
			2.50	1.50	0	cum
h	Dia.450 mm		1.05	1.50	0	cum
			1.55	1.50	0	cum
			2.05	1.50	0	cum
i	Dia.500 mm	50.00	1.10	1.50	82.5	cum
		50.00	1.60	1.50	120	cum
		50.00	2.10	1.50	158	cum
j	Dia.600 mm	50.00	1.20	1.50	90	cum
		100.00	1.70	1.50	255	cum
		38.00	2.20	1.50	125	cum
			1.30	1.50	0	cum
			1.80	1.50	0	cum
			2.30	1.50	0	cum
k	Dia.700 mm	100.00	1.40	1.50	195	cum
		41.00	1.90	1.50	111	cum
			2.40	1.50	0	cum
l	Dia.900 mm	600.00	1.50	1.50	1350	cum
		57.00	2.00	1.50	171	cum
			2.50	1.50	0	cum
m	Dia.1000 mm	100.00	1.60	1.50	240	cum
		161.00	2.10	1.50	507	cum
n	Dia.1100 mm		1.70	1.50	0	cum

Sr No	Description	length	Width	Depth	Quantity	Unit
	o Dia.1200 mm		1.80	1.50	0	cum
	p Dia.1400 mm		2.00	1.50	0	cum
			2.50	1.50	0	cum
			3.00	1.50	0	cum
	q Dia.1600 mm	30	2.20	1.50	99	cum
		10	2.70	1.50	41	cum
	r Dia.1700 mm	100	2.30	1.50	345	cum
		28	2.80	1.50	118	cum
			3.20	1.50	0	cum
	s Dia.1800 mm	100	2.40	1.50	360	cum
		135	2.90	1.50	587	cum
		190	2.80	1.50	798	cum
		41	3.30	1.50	203	cum
		190	3.00	1.50	855	cum
		13	3.50	1.50	68	cum
		500	3.20	1.50	2400	cum
		79	3.70	1.50	438	cum
	A)Total Qty for pipe	3967.50		1.50	10950	cum
	Excavation for M.H & Drop holes					
	1 Excavation for M.H.	Nos	0.785*D2	Depth		
	900 mm X 1.50M Depth		5.72	0.45	0	
	1200 mm X 1.50M Depth	54	7.07	0.45	172	
	1500mm X 3.50M Depth	27	8.55	1.50	346	
	1500 mm x 4.50M Depth	17	14.51	1.50	370	
	1500 mm x 6.0M Depth	40	22.05	1.50	1323	
	1500 mm x 7.5M Depth	35	31.16	1.50	1636	
	1800 mm X 3.0M Depth	3	10.17	1.50	46	
	1800 mm X 4.5M Depth	3	16.61	1.50	75	
	1800 mm X 6.0M Depth	1	31.16	1.50	47	
	2400 mm X 3.0M Depth	2	13.85	1.50	42	
	2400 mm X 4.50M Depth	12	21.23	1.50	382	
	2400 mm X 6.0M Depth	12	31.16	1.50	561	
	3000mm X 4.50M Depth	4	40.69	1.50	244	
	B)Total Qty for M.H				5244	
	Total including M.H.				16657.00	cum
	Proposed Quantity in this strata	20.00%	of total Qty		3331.4	cum
	3.0 to 4.5 m lift					
	a Dia.150 mm	38.00	0.75	1.50	43	cum
			1.25	1.50	0	cum
			1.75	1.50	0	cum
			1.75	1.50	0	cum
	b Dia.200 mm	10.00	0.80	1.50	12	cum
			1.30	1.50	0	cum
			1.80	1.50	0	cum
	c Dia.225 mm	44.00	0.80	1.50	53	cum
			1.30	1.50	0	cum
	d Dia.250 mm	47.00	0.85	1.50	60	cum
			1.35	1.50	0	cum
	e Dia.300 mm	12.00	0.90	1.50	16	cum
			1.40	1.50	0	cum

Sr No	Description	length	Width	Depth	Quantity	Unit
			1.90	1.50	0	cum
			1.40	1.50	0	cum
			1.90	1.50	0	cum
f	Dia.350 mm	6.00	0.95	1.50	9	cum
			1.45	1.50	0	cum
			1.95	1.50	0	cum
g	Dia.400 mm	47.00	1.00	1.50	71	cum
			1.50	1.50	0	cum
			2.00	1.50	0	cum
h	Dia.450 mm		1.05	1.50	0	cum
			1.55	1.50	0	cum
i	Dia.500 mm	100.00	1.10	1.50	165	cum
			1.60	1.50	0	cum
j	Dia.600 mm	10.00	1.20	1.50	18	cum
			1.70	1.50	0	cum
k	Dia.700 mm		1.30	1.50	0	cum
			1.80	1.50	0	cum
l	Dia.800 mm	41.00	1.40	1.50	86	cum
			1.90	1.50	0	cum
m	Dia.900 mm	58.00	1.50	1.50	131	cum
			2.00	1.50	0	cum
n	Dia.1000 mm	122.00	1.60	1.50	293	cum
q	Dia.1200 mm		2.00	1.50	0	cum
	Dia.1400 mm		2.50	1.50	0	cum
r	Dia.1500 mm		2.20	1.50	0	cum
	Dia.1600 mm	10.00	2.70	1.50	40.5	cum
	Dia.1700 mm	28.00	3.20	1.50	134.4	cum
s	Dia.1800 mm	135.00	2.40	1.50	486	cum
t	Dia.1900 mm	190.00	2.80	1.50	798	cum
u	Dia.2000 mm	13.00	3.00	1.50	59	cum
v	Dia.2200 mm	79.00	3.20	1.50	379	cum
	A)Total Qty for pipe	990.00			2854.00	cum
	Excavation for M.H & Drop holes					
1	Excavation for M.H.	Nos	0.785*D2	Depth		
	900 mm X 1.50M Depth					
	12000 mm X 1.50M Depth					
	1500mm X 3.50M Depth	27	8.55	0.45	104	
	1500 mm x 4.50M Depth	17	8.55	1.5	218	
	1500 mm x 6.0M Depth	40	14.51	1.5	871	
	1500 mm x 7.5M Depth	35	22.05	1.5	1158	
	1800 mm X 3.0M Depth	3	10.17	0.45	14	
	1800 mm X 4.5M Depth	3	10.17	1.5	46	
	1800 mm X 6.0M Depth	1	22.05	1.5	33	
	2400 mm X 3.0M Depth	2	13.85	0.45	12	
	2400 mm X 4.50M Depth	12	13.85	1.5	249	
	2400 mm X 6.0M Depth	12	22.05	1.5	397	
	3000mm X 4.50M Depth	4	30.18	1.5	181	
	B)Total Qty for M.H				3283	
	Total including M.H.	10.00%	of total Qty		6137.00	cum
	Proposed Quantity in this strata				613.7	cum

Sr No	Description	length	Width	Depth	Quantity	Unit
1.(ii)	A)Total Qty for pipe Excavation for M.H & Drop holes					cum
	1 Excavation for M.H.	Nos	0.785*D2	Depth		
	900 mm X 1.50M Depth					
	12000 mm X 1.50M Depth					
	1500mm X 3.50M Depth					
	1500 mm x 4.50M Depth					
	1500 mm x 6.0M Depth			8.55	0.15	
	1500 mm x 7.5M Depth			14.51	0.15	
	1800 mm X 3.0M Depth					
	1800 mm X 4.5M Depth			10.17	0.15	
	1800 mm X 6.0M Depth			8.55	0.15	
	2400 mm X 3.0M Depth					
	2400 mm X 4.50M Depth			13.89	0.15	
	2400 mm X 6.0M Depth			8.55	0.15	
	3000mm X 4.50M Depth			13.85	0.15	
	B)Total Qty for M.H					cum
	Total including M.H.					
	Proposed Quantity in this strata	30.00%	of total Qty			cum
	ITEM No. 1.(ii)					
	Excavation for foundation / pipe trenches in hard murum including removing the excavated material upto a distace of 50 M and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete.					
	0 to 1.5m lift					
	Total Qty of pipe / Excavation	12187.5			43692	cum
	70.00% Proposed Quantity in this strata					
		10.00%	of total Qty		4369.2	cum
	1.5 to 3.0 m lift					
	Total Qty of pipe / Excavation	3967.5			16657.00	cum
	Proposed Quantity in this strata				1665.7	cum
		10.00%	of total Qty			
	3.0 to 4.5 m lift					
	Total Qty of pipe / Excavation	990			6137	cum
	30.00% Proposed Quantity in this strata					
		10.00%	of total Qty		613	cum
	4.5 to 6.0 m lift					
	Total Qty of pipe / Excavation					cum
1. (iii)	10.00% Proposed Quantity in this strata	10.00%	of total Qty			cum
	6.0 to 7.50 m lift					
	Total Qty of pipe / Excavation					cum
	40.00% Proposed Quantity in this strata	10.00%	of total Qty			cum
	Item No. 1. (iii)					

Sr No	Description	length	Width	Depth	Quantity	Unit
1.(iv)	Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. 0 to 1.5m lift					
	Total Qty of pipe / Excavation	12187.5			43692	cum
	90.00% Proposed Quantity in this strata	20.00%	of total Qty		8738.4	cum
	1.5 to 3.0 m lift					
	Total Qty of pipe / Excavation	3967.5			16657	cum
	Proposed Quantity in this strata	20.00%	of total Qty		3331.4	cum
	3.0 to 4.5 m lift					
	Total Qty of pipe / Excavation	990			6137	cum
	50.00% Proposed Quantity in this strata	20.00%	of total Qty		1227.4	cum
	4.5 to 6.0 m lift					
	Total Qty of pipe / Excavation					cum
	30.00% Proposed Quantity in this strata	20.00%	of total Qty			cum
	6.0 to 7.50 m lift					
	Total Qty of pipe / Excavation					cum
	60.00% Proposed Quantity in this strata	20.00%	of total Qty			cum
	ITEM No. 1.(iv)					
	Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road by all means including removing the excavated material upto a distance of 50 M beyond area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding backfilling, etc. complete. 0 to 1.5m lift					
	Total Qty of pipe / Excavation	12187.5			43692	cum
	110.00% Proposed Quantity in this strata	20.00%	of total Qty		8738.4	cum
	1.5 to 3.0 m lift					
	Total Qty of pipe / Excavation	3967.5			16657	cum
	Proposed Quantity in this strata	20.00%	of total Qty		3331.4	cum
	3.0 to 4.5 m lift					
	Total Qty of pipe / Excavation	990			6137	cum
	70.00% Proposed Quantity in this strata	20.00%	of total Qty		1227.4	cum
	4.5 to 6.0 m lift					
	Total Qty of pipe / Excavation					cum
	50.00% Proposed Quantity in this strata	20.00%	of total Qty			cum
	6.0 to 7.50 m lift					
	Total Qty of pipe / Excavation					cum
	80.00% Proposed Quantity in this strata	20.00%	of total Qty			cum

Sr No	Description	length	Width	Depth	Quantity	Unit
1.(v)	ITEM No. 1.(v) Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by all means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 metres beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding backfilling, etc. complete by all means. 0 to 1.5m lift Total Qty of pipe / Excavation 12187.5 130.00% Proposed Quantity in this strata20.00% of total Qty43692 cum 1.5 to 3.0 m lift Total Qty of pipe / Excavation 3967.5 Proposed Quantity in this strata20.00% of total Qty16657 cum 3.0 to 4.5 m lift Total Qty of pipe / Excavation 990 90.00% Proposed Quantity in this strata20.00% of total Qty3331.4 cum 4.5 to 6.0 m lift Total Qty of pipe / Excavation 70.00% Proposed Quantity in this strata20.00% of total Qty6137 cum 6.0 to 7.50 m lift Total Qty of pipe / Excavation 100.00% Proposed Quantity in this strata20.00% of total Qty1227.4 cum					
2	ITEM No. 2 Lowering, laying and jointing in proper grade and alignment Stoneware pipes with cement joints in C. M. (1:1) proportion of following diameters including cost of conveyance from stores to site of work jointing material, labour, giving satisfactory hydraulic testing etc. complete. (I.S. 1742) A) For Non-water logged area 0 to 1.5m lift 1.5 to 3.0 m lift2794.001.52382 sqm 3.0 to 4.5 m lift2198.001.5594 sqm 4.5 to 6.0 m lift21.5sqm 6.0 to 7.5 m lift21.5sqm					
	B) For water logged area 0 to 1.5m lift22438.001.57314 sqm					
	1.5 to 3.0 m lift2794.001.52382 sqm 3.0 to 4.5 m lift2198.001.5594 sqm					
3	ITEM No. 3					

Sr No	Description	length	Width	Depth	Quantity	Unit
	Lowering, laying and jointing in proper grade and alignment R.C.C. pipes with rubber ring joints (excluding cost of rubber ring) including cost of conveyance from stores to site of work jointing material,labour, giving satisfactory hydraulic testing etc.complete as directed by Engineer- in-charge.(For all class of pipes)					
	150 mm	1238.00			1238.00	M
	200 mm	210.00			210.00	M
	225 mm	694.00			694.00	M
	250 mm	197.00			197.00	M
	300 mm	1212.00			1212.00	M
	350 mm	306.00			306.00	M
	400 mm	497.00			497.00	M
	450 mm					M
	500 mm	254.00			254.00	M
	600 mm	148.00			148.00	M
	700 mm					M
	800 mm	341.00			341.00	M
	900 mm	1657.00			1657.00	M
	1000 mm	561.00			561.00	M
	1100 mm					M
	1200 mm					M
	1500 mm	551.00			551.00	M
	1600 mm	748.00			748.00	M
	1700 mm	728.00			728.00	M
	1800 mm	774.00			774.00	M
	1900mm	431.00			431.00	M
	2000mm	1579.00			1579.00	M
	2100mm					M
	2200mm	297.00			297.00	M
4	ITEM No. 4					
	Transporting within 500 meters, laying in position to correct line and level M. S. pipes with / without any outcoating, on prepared bedding in trenches including marginal cutting wherever required, assembling tack welding the same. The rate to include loading, unloading, hoisting, ect. complete as specified.					
	2200 mm	29.70			30.00	M
	2400 mm					M
	2600 mm					M

Sr No	Description	length	Width	Depth	Quantity	Unit
5	ITEM No. 5 Manufacturing, providing and supplying spirally welded / ERW / SAW / fabricated M. S. pipes (Commercial Quality) including procurements of plates, gas cutting to required size rolling, tack welding assembling in suitable lengths to form pipes, welding on automatic welding machine and forming 'V' edge on both ends of pipes including all taxes (Central and local), railway freight, insurance unloading from railway wagon, loading into truck, transport to stores / site, unloading, stacking, etc, complete as per IS - 3589 and IS-5504 as applicable as per specifications (No negative tolerance in thickness is permissible). 2200 mm 2400 mm 2600 mm	29.70			30.00	M
6	ITEM No. 6 Gas cutting (either square cut or V cut) pipes, plates, Gas cutting (either square cut or V cut) pipes, plates, etc. of thickness 5 mm to 12 mm	2.00			2.00	M
7	ITEM No. 7 Welding in all positions with required number of runs, for M. S. pipes internally and / or externally including gauging wherever necessary, fixing appurtenances and other accessories in connection with pipe laying work as per specification.	35.00			35.00	M
8	ITEM No. 8 Providing and applying with mechanical arrangement 1:3 proportion cement sand gunite, 40 to 50 mm thick to M. S. pipe surface under 2.1 kg. per sqcm. to 2.80 kg.per sqcm. pressure including removing the loose materials as directed by Engineer-in-charge and including scrapping the surface with wire brushes, degreasing, cleaning by compressed air and providing fixing BRC fabric no.14 as reinforcement, curing for 21 days, disposing off the rebound materials within a lead of 50 M, etc. complete as directed by Engineer-incharge	207.00			207.00	M

Sr No	Description	length	Width	Depth	Quantity	Unit
9	ITEM No. 9 Providing and making inner cement mortar lining to M.S. pipes with mechanical devices in cement mortar 1:1 proportion, including cost of all materials, labour, special sand required, machinery, power generation, all equipments and taking necessary access openings and manholes, cuts at suitable intervals as directed by Engineer-in-charge and rewelding the same after done with doubler plates pipes including necessary excavation, refilling concrete breaking and remaking if any, breaking guniting and remaking the same, repainting wherever required with epoxy paint in 3 coats, all dewatering including emptying the pipeline and refilling the same after done with (water to be supplied by department free of cost within 5 km. lead at fixed point and all other arrangements to be done by agency), including carrying out "C" value performance test of pipeline, complete job as per the directions of the Engineer-in-charge.	205.00			205.00	M
10	ITEM No. 10 Providing ISI standard stoneware pipes including all taxes (Central and local), inspection charges, railway freight, unloading from railway wagons, loading into trucks, transport to departmental stores, unloading, stacking etc. complete. ii) 150 mm iii) 200 mm iv) 225 mm v) 250 mm vi) 300 mm					M M M M M
11	ITEM No. 11 Providing ISI standard R.C.C. pipes in standard lengths of following class and diameter suitable for either collar joints or rubber rings joints, including all taxes Central and local), inspection charges, transport to departmental stores/ site, unloading and stacking etc. complete..Pipes with internal cement mortar lining including all taxes, insurance, railway freight, unloading from railway wagon, loading into truck, transport to departmental stores / sites loading / unloading, stacking, etc, complete.					
	High alumina concrete lining and coating shall be class NP -N					

Sr No	Description	length	Width	Depth	Quantity	Unit
	Dia 150mm	1263			1263	M
	Dia 225mm	214			214	M
	Dia 200mm	708			708	M
	Dia 250 mm	201			201	M
	Dia 300 mm	1236			1236	M
	Dia 350 mm	312			312	M
	Dia 400 mm	507			507	M
	Dia 450 mm					M
	Dia 500 mm	259			259	M
	Dia 600 mm	151			151	M
	Dia 700 mm					M
	Dia 800 mm	348			348	M
	Dia 900 mm	1690			1690	M
	Dia 1000 mm	572			572	M
	Dia 1100 mm					M
	Dia 1200 mm					M
	Dia 1500 mm	562			562	M
	Dia 1600 mm	763			763	M
	Dia 1700 mm	743			743	M

Sr No	Description	length	Width	Depth	Quantity	Unit
	Dia 1800 mm	789			789	M
	Dia 1900 mm	440			440	M
	Dia 2000 mm	1611			1611	M
	Dia 2100 mm					M
	Dia 2200 mm	303			303	M
12	ITEM No. 12 Providing granular bedding with graded hard broken stone 100% passing through 20mm sieve, 20 to 50% passing through 10mm sieve and 100% retained on 6mm sieve, laying in layers of 15cm thick including ramming, consolidation etc., complete for pipe bedding For RCC NP-IV Pipes Dia 150mm 1238 0.95 0.2 235 cum Dia 225mm 210 0.8 0.2 34 cum Dia 200mm 694 0.8 0.2 111 cum Dia 250 mm 197 0.85 0.2 33 cum Dia 300 mm 1212 0.9 0.2 218 cum Dia 350 mm 306 0.95 0.2 58 cum Dia 400 mm 497 1 0.2 99 cum Dia 450 mm 0.2 0 cum Dia 500 mm 254 1.1 0.2 56 cum Dia 600 mm 148 1.2 0.3 53 cum Dia 700 mm 1.3 0.3 0 cum Dia 800 mm 341 1.4 0.3 143 cum Dia 900 mm 1657 1.5 0.3 746 cum Dia 1000 mm 561 1.6 0.3 269 cum Dia 1100 mm 0.3 0 cum Dia 1200 mm 0.3 0 cum Dia 1500 mm 551 2 0.3 331 cum Dia 1600 mm 748 2.2 0.3 494 cum Dia 1800 mm 774 2.4 0.3 557 cum Dia 1900 mm 431 2.8 0.3 362 cum Dia 2000 mm 1579 3 0.3 1421 cum Dia 2100 mm 3.2 0.3 0 cum Dia 2200 mm 297 3.7 0.3 330 cum Total 5220 cum					
13	ITEM No. 13 Laying of M.S cover pipes ,minimum 2.00 m below IRDP Roads, cement concrete and major roads by horizontal directional drilling method / push on method including all operations such as making pits for installation of achine, excavation starting and end point for laying of pipes etc. complete. (Including cost of cover pipe but excluding cost of inner pipe)	100			100	m
14	ITEM No. 14					

Sr No	Description	length	Width	Depth	Quantity	Unit
	Reinstating the road surface with excavation, 30 cm soling, murum blindage, 40 mm size metal, 25 mm thick premixed bitumen, carpet with hot mixed seal coat, including compacting at all stages etc. complete					
	Qty of excavation of pipe A) of item No 1 to 5				5044	cum
	Deduct volume of pipe				21375	cum
	Qty gravel bedding				5220	cum
	A) Net qty of refilling for pipe trenches				23649	cum
	Qty of excavation for chambers				16242	cum
	Deduct volume of chamber				3422	cum
	B) Net qty of refilling for chambers				12820	cum
	Total qty of refilling A) +B)				36469	cum
	Proposed in this item	50.00%	of total	Qty	18235	cum
15	ITEM No. 15 Backfilling of trenches and pits with selected excavated materials brought from outside, watering, refilling and ramming with selected earth for foundation and rounding the bottom of trenches for pipe bedding, consolidation in layers of 15cms including guarding, lighting, fencing the trenches and pits, supporting public utilities such as cables, drains, service pipes, sewers etc., complete					
		50.00%	of total	Qty	18235	cum
16	ITEM No. 16 Reinstating the road surface with excavation, 30 cm soling, murum blindage, 40 mm size metal, 25 mm thick premixed bitumen, carpet with hot mixed seal coat, including compacting at all stages etc. complete For WBM & Tar road (other than IRDP) 100-400 mm	100			100	sqm
	IRDP & PWD/ corp cement roads reinstating	100			100	m
17	ITEM No. 17 Disposal of surplus excavated stuff by truck including loading, unloading and stacking as directed lead upto 20 Km.					
		30017			30017	cum
18	ITEM No. 18 Detecting under ground services such as telephone, electric cables, water & sewer pipe line by advance technology/ by trial pits including all operations such as installation of system, etc. complete. along the route of pipe line.					km
19	ITEM No. 19					

Sr No	Description	length	Width	Depth	Quantity	Unit
	Dismantling dead pipeline of M.S./R.C.C./ C.I./ P.S.C. and G.I./ A. C. / P. V. C. / S. W. / H. D. P. E. pipe including cost of necessary excavation and refilling of trenches, breaking the joints, lifting the pipes and stacking to the place as directed by Engineer-in-charge with all leads and lifts including cleaning the surface, etc. complete.					
	For 500 mm dia	234.00			234.00	m
	For 600 mm dia	148.00			148.00	m
	For 700 mm dia					m
	For 800 mm dia	341.00			341.00	m
	For 900 mm dia	1583.00			1583.00	m
	For 1000 mm dia	561.00			561.00	m
	For 1500 mm dia	551.00			551.00	m
	For 1600 mm dia	96.00			96.00	m
	For 1400 mm dia					m
	For 1600 mm dia					m
	For 1700 mm dia					m
	For 1700 mm dia	658.00			658.00	m
	For 1800 mm dia	439.00			439.00	m
	For 1900 mm dia	29.00			29.00	m
A-2	ANCILLARY WORKS(M.H)					
1	ITEM No. 1					
	Providing and constructing on sewer, B.B. masonry circular manhole concentric cone 1.2 M dia. at bottom and 0.5 M dia. at top and upto a depth of 2.00 M with 23 cm brick work in CM 1:4 proportion excluding excavation including foundation concrete 250 mm thick and haunches and channels in c.c.1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56 cm.dia. etc. complete as directed by Engineer-in-charge.					
	Depth up to 1.5 M	20			20	No
	Depth up to 2.0 M	20			14	No
	Depth up to 2.50 M	14				

Sr No	Description	length	Width	Depth	Quantity	Unit
2	ITEM No. 2 Providing and constructing on sewer, B.B. masonry circular manhole concentric cone 1.5 M dia. at bottom and 0.5 M dia. at top and upto a depth of 5.00 M with 23 cm brick work up to depth of 2 M from top and 35 cm thick brick work for balance depth in CM 1:4 proportion with 20 mm thick smooth plaster on both side in cm 1:2 proportion excluding excavation including foundation concrete 250 mm thick and haunches and channels in c.c.1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighting 5.5 kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56 cm.dia. etc. complete as directed by Engineer-in-charge.					
	Depth up to 2.0M	7			7	No
	Depth up to 2.5 M	20			20	No
	Depth up to 3.0 M	7			7	No
	Depth up to 3.5 M	8			8	No
	Depth up to 4.0 M	30			30	No
	Depth up to 4.5 M	9			9	No
	Depth up to 5.0 M					No
3	ITEM No. 3 Providing and constructing on sewer, B.B. masonry circular manhole with concentric cone 1.5 M dia. at bottom and 0.5 M dia. at top and upto a depth of 9.00 M with 23 cm brick work, upto depth of 2 M from top and 35 cm thick brick work for depth of 2 M and 45 cm thick brick work for remaining depth upto 9 M in CM 1:4 proporpion with 20 mm thick smooth plaster on both sides in CM 1:2 proportion excluding excavation, including foundation concrete 250 mm thick and haunches and channels in c.c.1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56 cm.dia. etc. complete as directed by Engineer-in-charge.					
	Depth up to 5.5 M	15			15	No
	Depth up to 6.0 M	15			15	No
	Depth up to 6.5 M	5			5	No
	Depth up to 7.0 M					No
	Depth up to 7.5 M					

Sr No	Description	length	Width	Depth	Quantity	Unit
4	ITEM No. 4 Providing and constructing on sewer, B.B. masonry circular manhole with concentric cone 1.8 M dia. at bottom and 0.5 M dia. at top and upto a depth of 9.00 M with 23 cm brick work, upto depth of 2 M from top and 35 cm thick brick work for depth of 2 M and 45 cm thick brick work for remaining depth upto 9 M in CM 1:4 proporpion with 20 mm thick smooth plaster on both sides in CM 1:2 proportion excluding excavation, including foundation concrete 250 mm thick and haunches and channels in c.c.1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56 cm.dia. etc. complete as directed by Engineer-in-charge.					
	Depth up to 3.0 M	23			23	No
	Depth up to 4.5 M	21			21	No
	Depth up to 6.0 M	3			3	No
5	ITEM No. 5 Providing and constructing on sewer, B.B. masonry circular manhole with concentric cone 2.4 M dia. at bottom and 0.5 M dia. at top and upto a depth of 9.00 M with 23 cm brick work, upto depth of 2 M from top and 35 cm thick brick work for depth of 2 M and 45 cm thick brick work for remaining depth upto 9 M in CM 1:4 proporpion with 20 mm thick smooth plaster on both sides in CM 1:2 proportion excluding excavation, including foundation concrete 250 mm thick and haunches and channels in c.c.1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56 cm.dia. etc. complete as directed by Engineer-in-charge.					
	Depth up to 3.0 M	20			20	No
	Depth up to 4.5 M	20			20	No
	Depth up to 6.0 M	9			9	No

Sr No	Description	length	Width	Depth	Quantity	Unit
6	ITEM No. 6 Providing and constructing on sewer, B.B. masonry circular manhole with concentric cone 3.0 M dia. at bottom and 0.5 M dia. at top and upto a depth of 9.00 M with 23 cm brick work, upto depth of 2 M from top and 35 cm thick brick work for depth of 2 M and 45 cm thick brick work for remaining depth upto 9 M in CM 1:4 proporpion with 20 mm thick smooth plaster on both sides in CM 1:2 proportion excluding excavation, including foundation concrete 250 mm thick and haunches and channels in c.c.1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56 cm.dia. etc. complete as directed by Engineer-in-charge.					
	Depth up to 4.5 M	13			13	No
7	ITEM No. 7 Providing and fixing in position steel fibre reinforced concrete (S.F.R.C.) frame and covers of approved make including loading, unloading, transportation, all taxes, etc. complete as directed by Engineer-in-charge (20 tonnes capacity) 540 mm dia	279			279	No
A-3	Providing chairs, thrust blocks, Encasing etc to sewers in RCC m-20					
1	ITEM No. 1 Providing and laying in situ following grades of C.C. trap / granite / quartize / gnesis metal for bedding including dewatering form work, compacting and curing, finishingetc., complete 1:2:4 (M -150) grade (with 12 to 20 mm metal)					
	0 - 1.50m depth	221			221	cum
	1.5 - 3.0m depth	85			85	cum
	3.0 - 4.50m depth	49			49	cum
	4.5 - 6.00m depth					cum
	6.0 - 7.50m depth					cum
	7.5 - 9.0m depth					cum
2	ITEM No. 2					

Sr No	Description	length	Width	Depth	Quantity	Unit
	Providing and laying in situ Cement concrete of trap/ granite/ quartzite / gneiss metal for RCC work in foundation like raft, grillage, strip foundation and footing of RCC columns and steel stanchions including normal dewatering, formwork, compaction, finishing and curing,					
	In RCC M20					
	0 - 1.50m depth	55			55	cum
	1.5 - 3.0m depth	22			22	cum
	3.0 - 4.50m depth	25			25	cum
	4.5 - 6.00m depth					cum
	6.0 - 7.50m depth					cum
	7.5 - 9.0m depth					cum
3	ITEM No.3					
	Providing and laying RCC (M20) for encasing RCC pipes including the cost for required formwork, reinforcement and curing etc., complete					
	In RCC M20					
	0 - 1.50m depth	110			110	cum
	1.5 - 3.0m depth	85			85	cum
	3.0 - 4.50m depth	49			49	cum
	4.5 - 6.00m depth					cum
	6.0 - 7.50m depth					cum
	7.5 - 9.0m depth					cum
4	ITEM No.4					
	Providing and fixing in position steel bar reinforcement of various diameters for RCC pipes, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chajjas, lintels, parades, copings, fins, arches, etc., as per detailed designs, drawings required etc., complete (including cost of binding wire)					
	Tor steel 0.075 MT/cum of I.No11& 12 above	0.05	x	346.6	17	M.T

ANNEXURE I

ANNEXURE II

ANNEXURE III

ANNEXURE IV

ANNEXURE V

ANNEXURE VI

Executive Summary

CHAPTER -1: Introduction

This Report presents the Detailed Project Report for the Comprehensive Sewerage Scheme for Nagpur Municipal Corporation for the year 2041. The consultancy for the Master Plan/ Perspective Plan for Sewerage System of Nagpur City for the year 2041 has been awarded by the Nagpur Municipal Corporation to M/s. Shah Technical Consultants Pvt. Ltd., Mumbai.

Work on the consultancy was started in the third week of July 2007. The Inception Report & the Master Plan for the consultancy work was submitted on 30.08.07 & 12.10.07. As part of the Project requirements, a Detailed Project Report (DPR) containing detailed design, cost estimate and Implementation for the sewerage schemes is now being submitted. The DPR contains following

- I Main Report
- II Annexure (Hydraulic Statement of Collection systems & Design details of Pumping Stations, Pumping mains and Sewage Treatment Plant)
- III Drawings

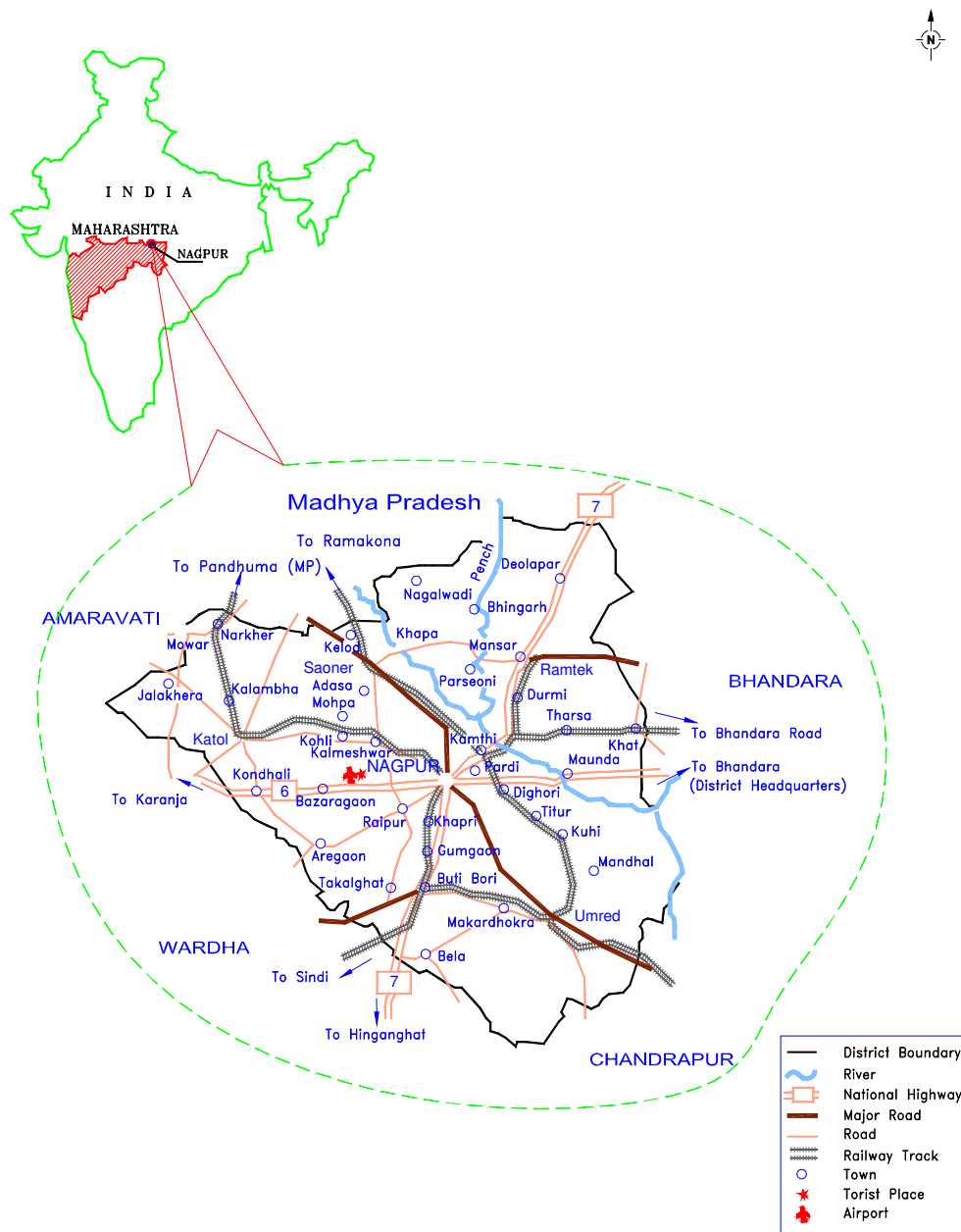
Aim of Consultancy

The aim of the present consultancy assignment is to make readily available for implementation technically sound and viable schemes forming integral parts of a Comprehensive Sewerage Scheme for Nagpur City. The assignment includes preparation of a Master Plan for a Sewerage Scheme with 2041 as the ultimate design year, feasibility studies and preparation of Detailed Project Reports for the Master Plan components, contract procurement, and provision of technical support during construction.

CHAPTER-2: Existing Water Supply & Sewerage Systems

Background Information

Nagpur City has an area of 217.56 sq.km. The present (2007) population is 25.49 lakhs. The population is projected to rise to 62.75 lakhs by 2041.



Existing Water Supply

The water supply to the NMC is derived mostly from surface sources located within a few km from the city. The water supply available at source for the City in 2001 was about 484.5 MLD or 172 lpcd. Augmentation of the water supply by 113 MLD more is in progress.

Existing Sewerage Facilities

The city is sewered to an extent of 64% of its total area. The total length of sewers provided is 1474 km with size ranging from 100 mm to 2100 mm dia with small lengths of larger rectangular brick sewers.

The existing sewers are several decades old. They are badly clogged and are not functioning satisfactorily. Moreover, the sewer lines have been developed in a piecemeal fashion and in most areas there are no trunk sewers provided to collect the sewage from the street sewers and convey it away for treatment and proper disposal. The sewage is mostly allowed to discharge into the water courses in the city such as the Pioli Nadhi, the Nag Nadi, the Pora Nadhi and their various tributaries without any treatment which is against the State Water Pollution Control Regulations. f

It is only in the eastern portion of the central part of the City that a properly designed sewer system with a trunk sewer, a final sewage pumping station (SPS) and a sewage treatment plant (STP) has been provided. The SPS and the STP are located at Bhandewadi. The STP consists of a Conventional Activated Sludge Plant (CASP) with sludge digestion tanks and with both sludge drying beds and mechanical sludge dewatering equipments. The sludge gas is now being flared. The STP design capacity is 100 MLD but it is currently receiving only 70-80 MLD sewage. Considering that nearly 36% of city area is unsewered, that the sewers provided are not functioning satisfactorily and that only a part of the city sewage is getting properly treated, there is an urgent need to design a Comprehensive Sewerage Scheme for the NMC based on a Master Plan, prioritise the proposed components optimally and implement the proposals as per the priorities fixed.



Need for Comprehensive Sewerage Scheme

As seen above, the existing situation in the NMC in regard to sewerage is far from satisfactory with the coverage being incomplete and the system provided functioning poorly in many areas and also causing serious stream pollution because of inadequate sewage treatment facilities. The deficiencies as above raise public health dangers. They will also retard the development of the city in the industrial sector for which other infrastructure facilities are encouraging as already discussed. The present sewerage system therefore requires major improvements.

It is seen that there will be an inadequacy of fresh water resources in the future for meeting the potable and non- potable water demands of Nagpur and its surrounding areas. It is therefore also necessary to consider the prospects and possibilities of sewage reclamation for non potable uses to manage anticipated future water shortage.

The problems facing the NMC in regard to sewerage are mostly due to the piece-meal approach made so far for developing the sector. It is therefore necessary to adopt a detailed approach and formulate Comprehensive Improvements for the NMC Sewerage System, prioritize the various components of the proposed improvements optimally and implement them as per the priority fixed.

CHAPTER-3: Data Collection, Topographical Survey & Review of Existing system.

Data Collection:

Collection of all available information pertaining to the project is vital for bringing out a proper design of the project. Basic data required for formulation of the project such as census population, project area maps, land availability for pumping station and sewage treatment plant, etc have been collected and analyzed.

Topographical Survey, Contour Map, Soil Investigations:

Sewage collection is effected by gravity and therefore accurate topographic (contour) map of the project area based on street levels is of prime importance in the design of the system and its subsequent efficient performance. A topographic survey has been carried out for the unsewered area of the City and a contour map has been prepared

for the whole NMC area taking into account the new street levels as well as street levels available for the areas already sewered. All new roads also have been entered into the City Map. Prior to the topographical survey, temporary benchmarks were established in the project area from the nearest available permanent benchmarks.

Knowledge of the soil strata in the project area is critical for deciding maximum depth of sewers, classification of earthwork quantities and estimation of costs for the implementation of the sewage collection system, pumping station and treatment facility. The subsoil investigation has been carried out.

Review of Existing System & Deficiency

Observations on the existing sewerage system in Nagpur City are as follows,

- City not covered fully by sewers.
- Sewer lines have not been provided in many streets particularly in the slum areas.
- In the North and the South Zones completely and in the Central Zone partly the sewage is being disposed off directly into watercourses like Nag Nadhi and Pioli Nadhi., without any treatment.
- The access to sanitary facilities for the urban poor and slum dwellers is highly unsatisfactory.
- 15 -25 % of the existing manholes are choked resulting in overflows at upstream manholes.
- The choking is due to the dumping of solid wastes and cattle – shed wastes into manholes.
- The existing sewers are heavily silted up causing sluggish flow and backing up of sewage in the manholes and septicisation of the sewage. The cause seems to be the neglect of periodical cleaning of sewers as a part of preventive maintenance.
- Parts of existing sewers are damaged requiring replacement.
- The street sewers are overflowing during storms, which is due to storm water connections having been made to the sewer unauthorized.
- No proper database is available showing accurate details of existing collection system. (Preparation of the database including system condition is in progress.)
- The problems faced in the existing sewerage system of the NMC has arisen most by on account of the piece-meal approach adopted in the past for implementation of the works.

CHAPTER-4: Population Projection & Sewage Generation

The design period for the Comprehensive Sewerage Scheme for the NMC has been proposed as 2011-2041.

The design population for the project period has been worked out taking into account past population figures which ranged from 4.49lakhs in 1951 to 21.29 lakhs in 2001. Account has also been taken of the population projections approved by the NMC for the Master Plan for the Water Supply Scheme framed in 2000 by M/s.Tata Consulting Engineers Ltd. (TCE). The land use proposals and the ward density projections made by the Nagpur Improvement Trust have also been considered. The population projections made now for the whole of the city corporation are;

Year	Population of NMC Area	Population of MIHAN Area	Project Area Population (MIHAN Area excluded)
2011	2830000	88766	2741234
2026	4225780	174073	4051707
2041	6275530	307071	5968459

Proposed Design Population for the Project Area.

It has been already mentioned that the MIHAN area covering ward nos. 13 (part), 14 (part) and 15 is to be excluded from the NMC Sewerage Scheme Project area. The population figures for the Sewerage Scheme Project Area with the MIHAN area excluded are shown below:

Details of Project Area Population.				
S.No.	Name of Project Area	Population In Nos.		
		Base year - 2011	Intermediate year - 2026	Ultimate year – 2041
1	Nagpur Municipal Corporation	2741234	4051707	5968459

Population Projection for Central Zone

This report deals with Central Zone only, the contributing population is presented in the following table.

Details of Central Zone Population.				
S.No.	Name of Project Area	Population In Nos.		
		Base year – 2011	Intermediate year – 2026	Ultimate year – 2041
1	Nagpur Municipal Corporation	1287622	1702362	2313026

Rate of Sewage Generation

The unit sewage flow likely to be generated in the ULBs has been calculated based on the unit water supply rate recommended by JNNURM and a suitable provision towards infiltration.

S.No	Description		Value
a)	Total per capita water supply	=	150 lpcd
b)	Sewage generation at 80% of the total water supply	=	120 lpcd
c)	Add for infiltration	=	6 lpcd
d)	Total unit sewage rate being admitted to system	=	126 lpcd

Projected Sewage Generation

The water supply rate adopted for the on-going water supply project is 150 lpcd. As per the CPHEEO manual, 80 % of the water supply is to be taken as the sewage generation. The sewage generation will therefore be 120 lpcd.

It has been shown that the infiltration into sewers may be 6 lpcd. Hence the total per capita sewage flow will be 126 lpcd. At the rate of 126 lpcd sewage flow the total sewage flow generated in the NMC Project Area will be as given below during different project years.

Sewage Flow Projection for Nagpur Municipal Corporation				
Year	Population	Avg. Daily Flow (MLD)	Average Flow (lps)	Peak Flow (lps)
2011	2830000	356.58	4127.08	8057.64
2026	4225780	532.45	6162.60	12031.73
2041	6255019	790.72	9151.81	17867.83

Sewage Flow Projection for Project Excluding (MIHAN AREA)				
Year	Population	Avg. Daily Flow (MLD)	Average Flow (lps)	Peak Flow (lps)
2011	2741234	345.40	3997.63	7804.90
2026	4051707	510.52	5908.74	11536.11
2041	5968459	752.03	8704.00	16993.53

The projections given above do not include wards 13 part and 14 part and ward 15 full as they fall in the “Multimodal International Hub Airport at Nagpur (MIHAN)” area for which the MIHAN authorities themselves are to provide sewerage facilities.

Sewage Flow Projection for Central Zone

This report deals with Central Zone only, the contributing population and sewage flow projection along with the average and peaks flows is presented in the following table.

Sewage Flow Projection for Central Zone				
Year	Population	Avg. Daily flow (MLD)	Average Flow (lps)	Peak Flow (lps)
2011	1287622	162.24	1877.78	3666.14
2026	1702362	214.5	2482.61	4847.00
2041	2313026	291.44	3373.16	6585.70

CHAPTER -5: Concept & Methodologies

The following concepts and methodologies have been adopted for formulation of the detailed proposal of Comprehensive Sewerage Scheme.

Sewage Collection System

- (i) Sewage collection system to be kept strictly separate from the stormwater drainage system.
- (ii) Discharge of raw sewage into the City watercourses to be stopped and sewage treatment to be provided in all cases before final disposal of the sewage.
- (iii) All streets which are presently unsewered to be sewerred. Trunk sewers, main sewers etc to be provided to intercept all sewage flows and convey them to pumping stations for pumping to sewage treatment plants.

- (iv) Existing sewers which are inadequate to carry 2026 flows to be replaced with new sewers as Phase I of the detailed proposals. Replacement to be taken up in Phase I of sewers which are not functioning satisfactory and cannot be repaired easily. Replacing sewers which are adequate for 2026 but not for 2041 flows to be taken up as Phase II of the detailed proposal in 2026.
- (v) All replacements of sewers and new sewer provisions to be designed for 2041 flows.
- (vi) In the new proposals, depth of sewers shall be kept within 6m, and pumping stations shall be minimized.
- (vii) The Hydraulic design for new proposed sewer lines and adequacy check for existing sewer lines shall be carried by CAD employing the SEWERCAD model.

Pumping

- (i) Pumping stations (PS) shall be employed to avoid excessive depth of sewer. Sewage Pumping Stations shall be employed to convey the sewage for treatment.
- (ii) Automated operation of pumps shall be provided wherever possible.
- (iii) Pumping mains shall be sized based on economical size calculations subject to meeting velocity criteria.

Sewage Treatment

- (i) Reuse potential of the treated sewage shall be considered in all cases. Feasibility of sludge gas utilization shall also be considered.
- (ii) Irrespective of the quality requirements for any reuse, treatment at the Municipal STP shall be to produce effluent fit for discharge into water courses. Any extra treatment required for effluent reuse is better carried out by the prospective “reuser”.
- (iii) Sewage treatment process shall be selected based on techno-economic comparison of feasible alternatives.

- (iv) Modular design shall be adoption and initial construction shall be restricted to one or two modules to avoid the plant remaining unused in the initial period.

CHAPTER – 6: Design Criteria & Procedures

- (i) The design criteria adopted for the project proposals are based on the recommendations given in the CPHEEO Manual on Sewerage and Sewage Treatment.
- (ii) Design years for various components of the sewerage scheme have been fixed as given below.

Collection System	-Ultimate Year (2041)
Pumping Station Civil Works	-Ultimate Year (2041)
Pumping Plants	-Initial provision for intermediate year (2026) To be renewed in 2026 for ultimate year (2041).
Sewage Treatment Plants	- To be designed 2/3 modules for ultimate year (2041) and constructed stages.
- (iii) For new sewers lines, SW pipes are proposed for dia upto 300 mm and depth upto 3.5 m. The sewer lines shall be provided appropriate bedding to withstand external loads. For larger dia's and greater depths, RCC NP pipes are proposed, the pipes being manufactured of SRP cement with internal sacrificial lining (12.5 mm thick) to enhance their life.
- (iv) For sewage pumping mains, the choice of pipe material is made between DI, Bar-wrapped Steel Cylinder and Mild Steel with lining and coating based on cost and availability.
- (iv) Generally, vertical shaft submersible motor, centrifugal non-clog pumps shall be used for pumping of sewage. When capacity required is very large, multiple VSSM pump sets shall be installed in parallel.
- (v) A pumping stations, provision shall be made for screening and grit removal before pumping.

CHAPTER – 7: Proposals for Sewerage System: Collection System & Pumping Arrangements

General:

The city has three valley lines running more or less parallel from the western side of the city to the eastern side. It will therefore be logical to design the collection system for the city in three independent zones namely a North Zone, a Central Zone, a South Zone running parallel from the Western end to the eastern end with final collection points at the eastern ends.

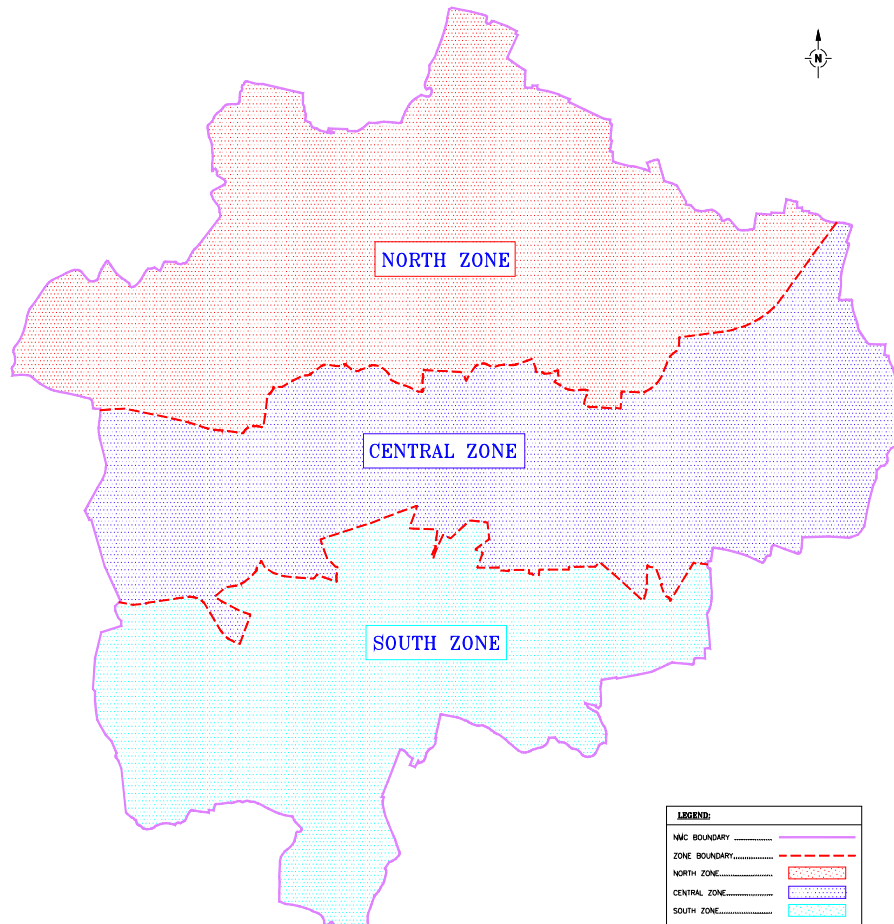
In the comprehensive proposals for Nagpur Sewerage Scheme framed in 1988. The sewage collection system for the city was proposed in three zones as above. The Phase I proposals for the Central Zone complete with final pumping station and STP has also been implemented on the basis of the above zoning proposal. Further, sites also have already been identified and reserved for the final pumping stations and STPs for the North Zone and the South Zone.

As the zonal division already conceived is suited for the city's topography and is also partly implemented, it is retained in this proposal. The zonal divisions are shown in Drawing.

The total per capita sewage flow including infiltration water has been derived as 126 lpcd. On this basis per day sewage flows as given in Table from the three sewerage zones of the City during different years of the project design period.

Daily Flow details of three zones

Zones	Population			Average Flow (MLD)		
	2011	2026	2041	2011	2026	2041
North Zone	822252	1326613	2048577	103.6	167.15	258.12
Central Zone	1287622	1702362	2313026	162.24	214.50	291.44
South Zone	631360	1022732	1606856	79.55	128.86	202.46
Total	2741234	4051707	5968459	345.40	510.52	752.03

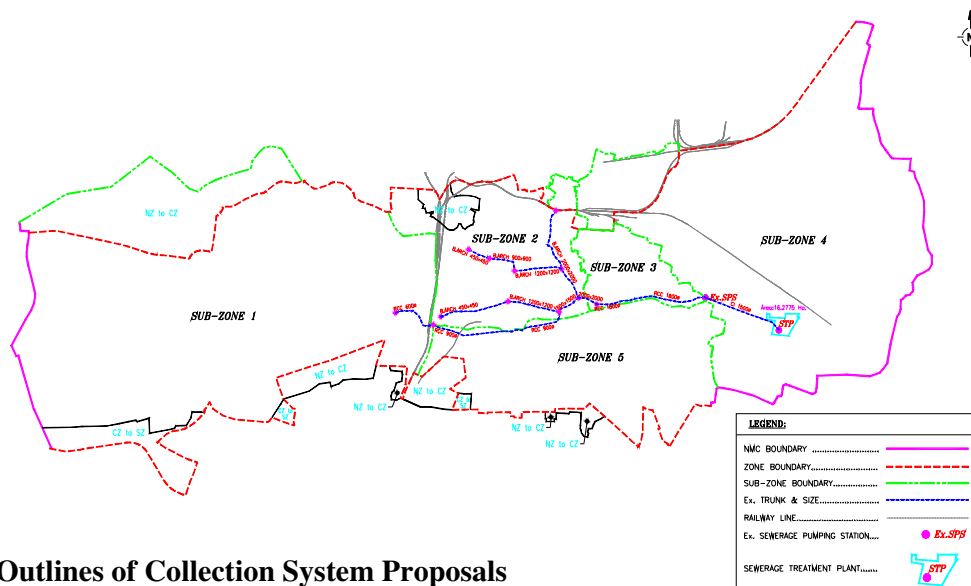


Sewage Collection and Pumping Proposals for Central Zone

Background Information

The Central Zone extends from the western end of the city to its eastern end with the ground level falling from +335.00m at the west to +280.00m at the east and with a total area of 8169 Ha. The total population and flow details of the Central zone are given below

Area (Ha)	Street Length (KM)	Population			Average Daily Flow (MLD)		
		2011	2026	2041	2011	2026	2041
8169.0445	1002	1287622	1702362	2313026	162.24	214.50	291.44



Outlines of Collection System Proposals

The Central Zone will require sewers for a total length of about **1088** km to serve all its area. Out of this, sewers are already provided for about 656.075 km. considering the large length for which sewers are already available; it becomes economical essential to retain them to the maximum extent possible.

Zone	Existing Length of Sewers	New Sewers Lengths Required *
Central Zone	656.075 Km	432.75 km

* Trunk sewers included.

The Central Zone has trunk sewers, sewage pumping stations and sewage treatment plant at present and the street sewers discharge into nearby watercourses without treatment. Keeping in mind the above requirement the collection system is proposed to remodel the existing collection system in the Central Zone on the following lines.

- (a) Sewers in all unsewered streets.
- (b) Sewer replacements where existing lines are inadequate. To be taken up in two Phases, Phase I in 2011 and Phase II in 2026.
- (c) Sewer replacements where existing sewers are in poor condition. The reaches are to be identified after carrying out a comprehensive, one-time cleaning and desilting exercise for the existing sewers which are generally badly silted up and blocked. Main sewers and a trunk sewer to intercept the flows from existing and new sewers and convey the same to a final pumping station. The trunk sewer will run

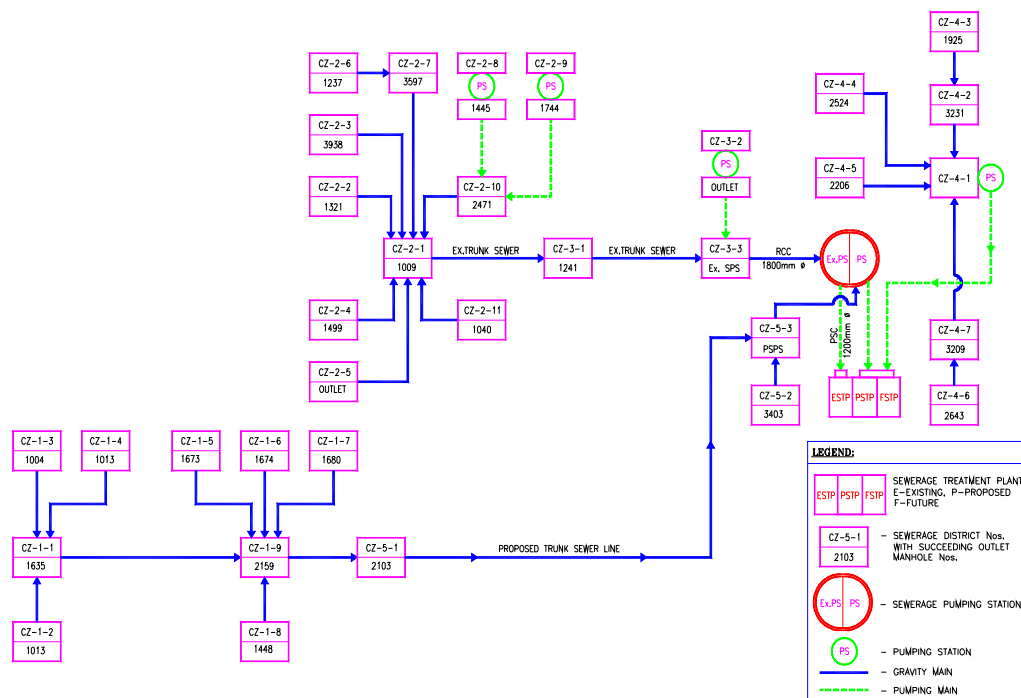
from the west end to the east end. The final pumping station for the zone will be located at Bhandewadi at the south eastern end of the zone close to the STP for the zone.

Formulation of Sub Zones and Sewerage District of Central Zone.

As detailed in the methodology the Central Zone is divided into Sub Zones (5 Nos.) and Sewerage District (33 Nos.) for the flexibility of contract packaging and Software limitation. The Schematic flow diagram shows the sewerage district of Central Zone. The Contributory population and sewage flow details of Sub Zone and Sewerage District are given in the following table.

The summary of Sewer Length in Central Zone is given below :

Existing Length of Sewers (KM)	Proposed length of Sewers NIT cluster (KM)	Proposed length of Sewers (KM)	Total length of Sewers including NIT cluster (KM)	Replacement length of Existing Sewer in Phase -I (KM)	Replacement length of Existing Sewer in Phase II (KM)
656.075	194.13	238.62	432.75	97.462	5.16



CENTRAL ZONE Contributory population and Sewage flow details of Sub Zone and Sewerage District

SubZone	Sewerage District	Area	Population			Avg.Flow (Mld)			Avg.Flow (lps)			Peak Flow (lps)		
			2011	2026	2041	2011	2026	2041	2011	2026	2041	2011	2026	2041
1	CZ 1-1	22.30	1139	1327	1529	0.14	0.17	0.19	1.66	1.93	2.23	4.83	5.62	6.48
	CZ 1-2	741.38	71170	96282	125156	8.97	12.13	15.77	103.79	140.41	182.52	227.35	307.57	399.80
	CZ 1-3	205.56	43857	53641	63813	5.53	6.76	8.04	63.96	78.23	93.06	155.33	171.35	203.85
	CZ 1-4	327.08	22518	26721	30793	2.84	3.37	3.88	32.84	38.97	44.91	79.75	94.64	109.06
	CZ 1-5	321.13	32559	33966	35254	4.10	4.28	4.44	47.48	49.53	51.41	115.31	120.30	124.86
	CZ 1-6	12.38	3290	3317	3317	0.41	0.42	0.42	4.80	4.84	4.84	13.94	14.05	14.05
	CZ 1-7	8.94	1779	1794	1794	0.22	0.23	0.23	2.59	2.62	2.62	7.54	7.60	7.60
	CZ 1-8	1381.11	52026	80017	120714	6.56	10.08	15.21	75.87	116.69	176.04	166.20	255.61	385.62
	CZ 1-9	338.99	48806	61090	75162	6.15	7.70	9.47	71.18	89.09	109.61	172.86	195.15	240.10
2	CZ 2-1	253.32	117502	118823	118850	14.81	14.97	14.98	171.36	173.28	173.32	375.35	379.57	379.66
	CZ 2-2	147.79	29408	29983	30011	3.71	3.78	3.78	42.89	43.73	43.77	104.16	106.19	106.29
	CZ 2-3	18.84	11861	11960	11960	1.49	1.51	1.51	17.30	17.44	17.44	50.24	50.66	50.66
	CZ 2-4	69.03	17268	17971	18425	2.18	2.26	2.32	25.18	26.21	26.87	73.15	76.13	78.05
	CZ 2-5	16.38	8763	8836	8836	1.10	1.11	1.11	12.78	12.89	12.89	37.12	37.43	37.43
	CZ 2-6	109.26	16172	16306	16306	2.04	2.05	2.05	23.58	23.78	23.78	68.51	69.07	69.07
	CZ 2-7	87.81	47462	47858	47858	5.98	6.03	6.03	69.21	69.79	69.79	168.09	169.50	169.50
	CZ 2-8	99.28	38346	38666	38666	4.83	4.87	4.87	55.92	56.39	56.39	135.81	136.94	136.94
	CZ 2-9	18.26	7742	7807	7807	0.98	0.98	0.98	11.29	11.39	11.39	32.80	33.07	33.07
	CZ 2-10	40.11	25062	25272	25272	3.16	3.18	3.18	36.55	36.85	36.85	88.76	89.50	89.50
	CZ 2-11	3.40	2326	2345	2345	0.29	0.30	0.30	3.39	3.42	3.42	9.85	9.94	9.94
3	CZ 3-1	98.69	36713	38545	40107	4.63	4.86	5.05	53.54	56.21	58.49	130.03	136.51	142.05
	CZ 3-2	8.28	4540	5476	6266	0.57	0.69	0.79	6.62	7.99	9.14	19.23	23.20	26.54
	CZ 3-3	166.47	45398	54311	62794	5.72	6.84	7.91	66.21	79.20	91.57	160.79	173.49	200.59

SubZone	Sewerage District	Area	Population			Avg.Flow (Mld)			Avg.Flow (lps)			Peak Flow (lps)		
			2011	2026	2041	2011	2026	2041	2011	2026	2041	2011	2026	2041
4	CZ 4-1	372.10	63273	97691	146761	7.97	12.31	18.49	92.27	142.47	214.03	202.12	312.07	468.82
	CZ 4-2	101.02	6668	13986	27541	0.84	1.76	3.47	9.72	20.40	40.16	28.25	59.24	97.54
	CZ 4-3	441.00	27459	57129	111939	3.46	7.20	14.10	40.04	83.31	163.25	97.25	182.49	357.58
	CZ 4-4	190.67	66546	84074	104419	8.38	10.59	13.16	97.05	122.61	152.28	212.58	268.57	333.56
	CZ 4-5	194.61	39012	50908	65007	4.92	6.41	8.19	56.89	74.24	94.80	138.17	162.62	207.66
	CZ 4-6	787.05	102229	211890	392813	12.88	26.70	49.49	149.08	309.01	572.85	326.56	676.87	1254.82
	CZ 4-7	452.35	29858	62625	123322	3.76	7.89	15.54	43.54	91.33	179.84	105.75	200.05	393.95
5	CZ 5-1	485.18	116106	122161	125821	14.63	15.39	15.85	169.32	178.15	183.49	370.89	390.24	401.93
	CZ 5-2	233.38	24329	56302	113439	3.07	7.09	14.29	35.48	82.11	165.43	86.17	179.85	362.37
	CZ 5-3	415.87	126432	163285	208930	15.93	20.57	26.33	184.38	238.12	304.69	403.88	521.60	667.42
	Total	8169.04	1287622	1702362	2313026	162.24	214.50	291.44	1877.78	2482.61	3373.16	3666.14	4847.00	6585.70

Sewage Pumping Arrangements for the Central Zone

Apart from one existing pumping station of 100 MLD capacity at Bhandewadi Six pumping Stations are proposed in the Central Zone. Pumping stations are provided in sewerage district C-2-8, sewerage district C-2-9, sewerage district C-3-2, sewerage district C-4-1 and sewerage district C-5-3. Detail of pumping station and the design flow to be handled by the pumping station will be as shown in Table below..

Pumping Station (PS) Flow details of Central Zone

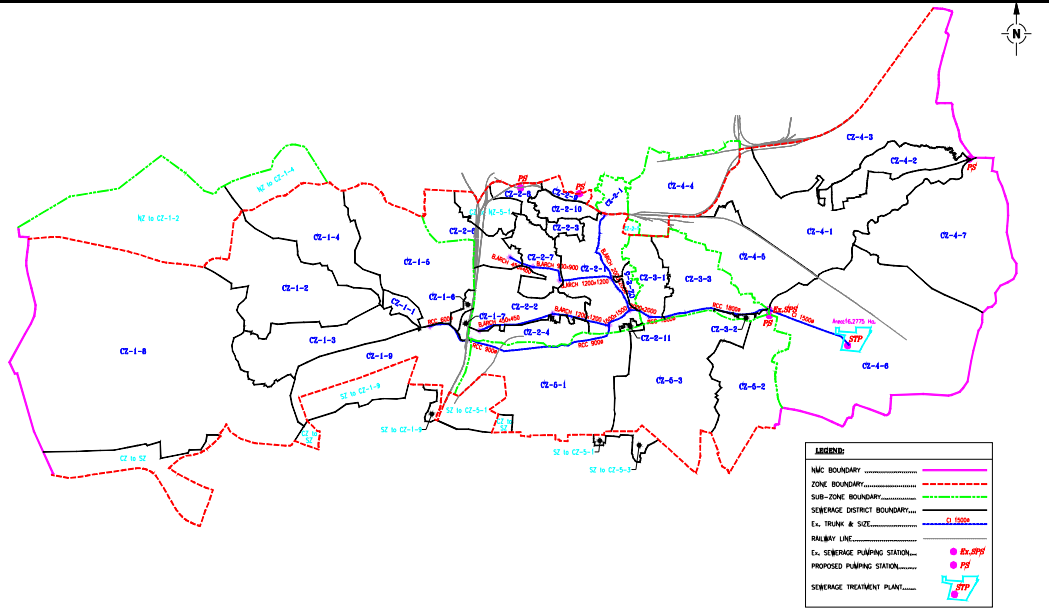
Proposed Pumping Station details								
Description			CZ 2-8	CZ 2-9	CZ 3-2	CZ 3-3	CZ 4-1	CZ 5-3
Total flow in lps	Intermediate	Peak	150.72	37.68	23.2	1356.48	1847.35	2235.8
		Low	75.36	18.84	11.6	678.24	923.68	1117.9
	Ultimate	Peak	150.72	37.68	26.54	1391.19	2766.93	2578.79
		Low	75.36	18.84	13.27	695.6	1383.47	1289.4
Total Head in m	Intermediate	Peak	12.77	12.65	18.27	26.23	45.93	29.98
		Low	11.22	11.04	16.23	24.63	41.45	28.55
	Ultimate	Peak	12.77	12.65	18.9	26.31	52.19	30.38
		Low	11.22	11.04	16.43	24.65	43.41	28.68
Pump Break Power : BKW	Intermediate	Peak	42.77	10.59	9.42	790.78	1885.63	1489.71
		Low	18.8	4.62	4.18	371.22	850.74	709.27
	Ultimate	Peak	42.77	10.59	11.15	813.34	3209.05	1741.19
		Low	18.8	4.62	4.84	381.08	1334.59	821.68

The civil works shall be designed for the ultimate peak flow. The pumping plants shall be installed to handle intermediate peak flow. The initial pumps will be installed for 2026 peak flow. Provision shall also be made for pumping at half the peak flow. The pumps installed in 2011 may require replacement pumps by 2026. The new shall be designed for the 2041 peak rate.

Rising Main:

Size of pumping mains

The pumping mains are sized primarily to maintain satisfactory velocities as per design criteria at low pumping rates as well as at peak pumping rates from initial stage itself.



Pipe material

The pumping mains will be of Ductile Iron pipes of class K9 (DI – K9) / Mild Steel for diameter more than 100mm, unless otherwise specified.

Details of proposed pumping mains are given in the Table

Details of Proposed Pumping Mains							
Details of Size, Material, Flow & Velocity and Alignment of Pumping Main.							
Zones		CZ 2-8	CZ 2-9	CZ 3-2	CZ 3-3	CZ 4-1	CZ 5-3
Alignment		CZ 2-8 to CZ 2-10	CZ 2-9 to CZ 2-10	CZ 3-2 to CZ 3-3	Ex.SPS to STP	CZ 4-1 to STP	SPS to STP
Size (mm) / Material		400 / DI	200 / DI	150 / DI	1200 / Psc	1400 / MS	1500 / MS
Length (m)		385	180	150	1500	6500	1500
Proposed Peak Flow, lps	Int. - 2026	150.72	37.68	23.2	1356.48	1847.35	2235.8
	Ult.- 2041	150.72	37.68	26.54	1391.19	2766.93	2578.79
Velocity, m/s.	Int. - 2026	1.09	1.2	1.31	1.2	1.2	1.27
	Ult.- 2041	1.09	1.2	1.5	1.23	1.8	1.46

CHAPTER -8: Proposal for Sewage Treatment & Disposal

Sewage flow to be handled at STP:

Zones	Total Capacity to be made available (MLD)				Proposed Capacity for construction (MLD)		Total Proposed Capacity (MLD)
	Existing Capacity	2011	2026	2041	2011	2026	
Central Zone	100	162	215	292	100	92	192

- (i) Localized independent sewage treatment plants have been proposed for the Central sewerage zones of the city. The sites for the STP have been identified and reserved. The ultimate sewage, treatment capacity to be provided for the Central Zone at Bhandewadi will be about 192 MLD. This capacity is proposed to be provided in 2 independent phases. The initial phase to be taken up available capacity of 100 MLD. The balance capacity of 92 MLD may be provided in further Phase.

The STP capacity of 100 MLD considered for the projected population of the Central Zone for 2026.. It is expected that the 100 MLD capacity proposed as Phase II may be equaled only by 2026 by when the Phase II STP may be readied..

Phasing proposals for zonal STPs:

Zones	Population to be served			Total Capacity to be made available (MLD)		
	2011	2026	2041	Existing Capacity	2011	2026
Central Zone	1287622	1702362	2313026	100	0	100

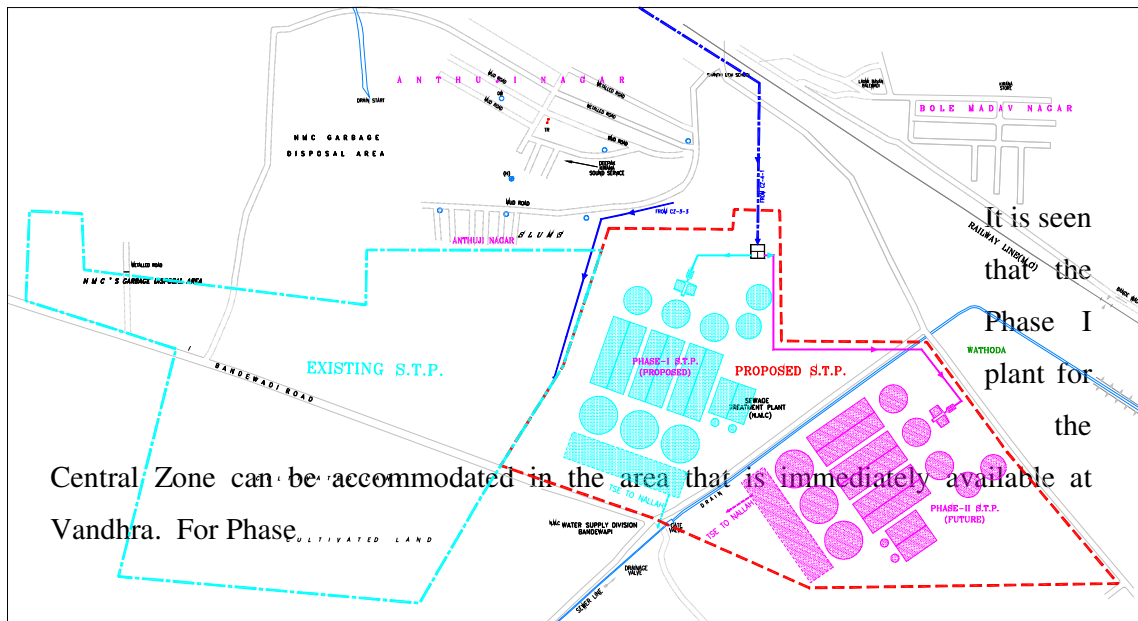
- (ii) Sewage treatment provision shall be to secondary level with effluent BOD less than 20 mg/l and SS less than 30 mg/l so that the effluent can be discharged to any water course. Bacterial quality standards may have to be satisfied in the future.

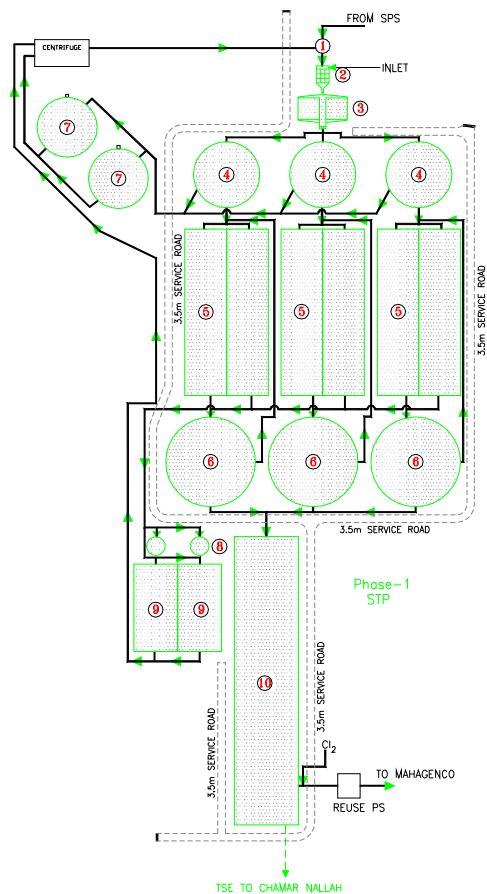
(iii) Various alternatives have been considered for sewage treatment as mentioned below:

- Conventional Activated Sludge Process
- Extended Aeration ASP
- Trickling Filters
- Waste Stabilisation Ponds
- Aerated Lagoons
- Other propriety treatment process(C-Tech , MMBR, MBR & FBR)

Choice of Treatment Process for Central Zone

It is seen that the Conventional-Activated Sludge Process alone is suited for the high STP capacity required for the Central Zone. The advantages of the method are the comparatively low power demand and the prospects that it has for generation of power from digester gas which may well be able to meet the full power needs for sewage treatment. Using digester gas containing methane for power generation instead of releasing it into the atmosphere will also be able to gain carbon credit.

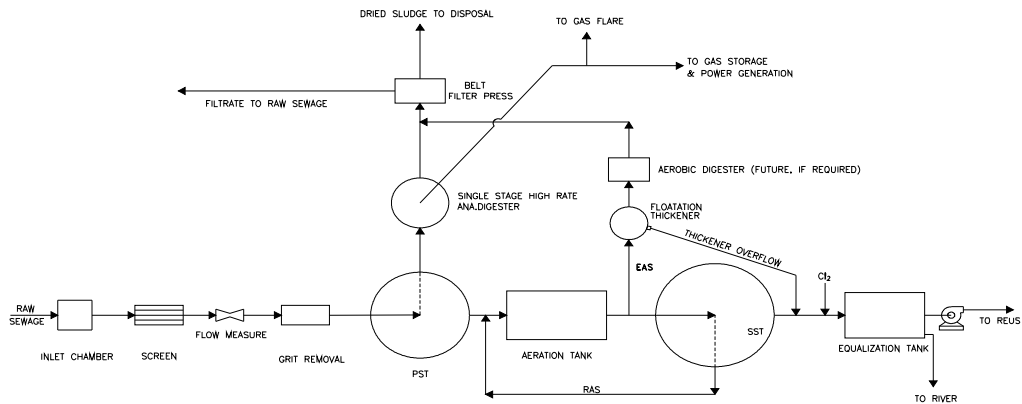




KEY-PLAN

EQUIPMENT LIST		AREA OF STP - 8.3240 Ha.	
UNIT NO.	DESCRIPTION	SIZE/CAPACITY	QTY.
01	INLET CHAMBER	5000x5000	01
02	SCREEN CHAMBER	7200x3500x6000	01
03	GRIT CHAMBER	9500x9500x6000	02
04	PRIMARY SETTLING TANK	30750x3500 SWD.	03
05	AERATION TANK	76000x19000x5600	06
06	SECONDARY SETTLING TANK	42000x4000 SWD.	03
07	SLUDGE DIGESTORS	27500x12650 D	02
08	THICKENERS FOR EAS DISSOLVED AIR FLOTATION	8500x1000	02
09	EAS DIGESTERS (AERATED)	39000x19500x4500 SWD.	02
10	EQUALISATION TANK	130000x30000x3500	01

II and Phase III which are to be taken up in the future, the land immediately available will not be sufficient and additional area will also have to be made available.



It is seen that there will be no advantage gained by going in for the new developments in sewage treatment for the Central Zone. Even with these alternatives, it is only the Phase I requirement that can be accommodated in the land immediately available See layout plans annexed. For Phase II and Phase III, additional area will have to be provided even with these methods.

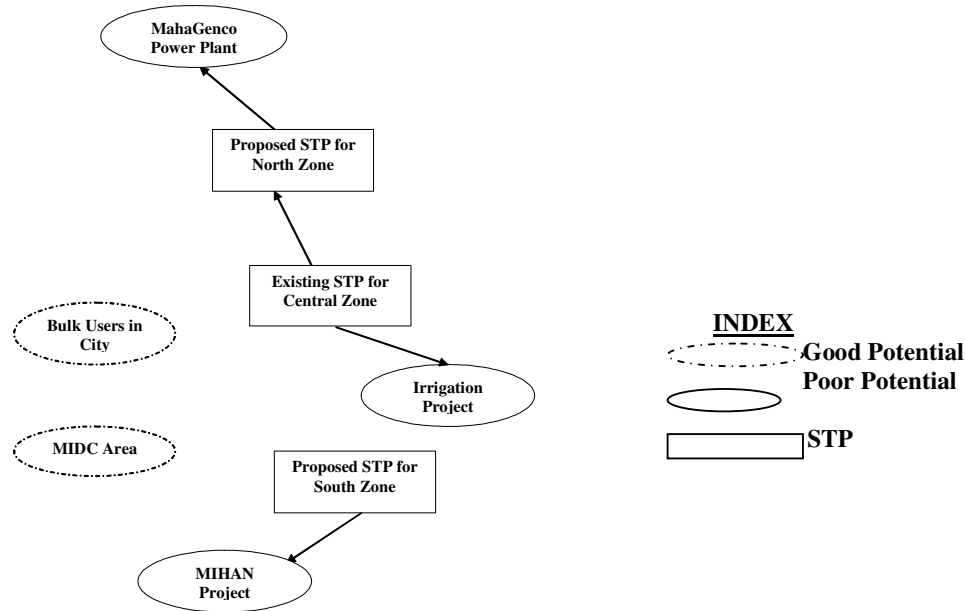
In view of the above factors, the new sewage treatment developments are not considered in framing the detailed project proposals for the STP for the Central Zone. However, while preparing Bid Documents for the Central Zone STP, the tenderers will be given the option to quote not only for the C-ASP method but also for the new developments prescribing appropriate performance criteria. It has been claimed by the promoters of the new methods that their methods require less power making them cheaper in life-time cost. The bids may be evaluated taking into account the life time costs.

CHAPTER -9: Proposals for Sewage Reuse of Treated Effluent

It is seen that in the coming years there will be a considerable shortage in the fresh water available for the Nagpur City Water Supply Scheme reasonable distance from the city. The expected shortage is 149 MLD in 2011 which will increase to 1176 MLD in 2041. It is necessary to consider Integrated Water Resources Management Strategies to meet the shortage. In this context, the feasibility of reusing the treated sewage effluent for non-potable uses in the Nagpur Region has been considered a detailed study in this matter has been made and a Draft Detailed Project Report was submitted in March 2006 by PA Government Services Ltd for review by the US Agency for International Development (US AID).

The fresh water shortage for Nagpur City can be significantly reduced by supplying treated sewage effluent to the bulk consumers around Nagpur for their non-potable uses as substitute for the treated potable water provided or promised to them from the NMC Water Supply System or as swap for the fresh water that they have been promised by the Irrigation Department from the Pench source serving the NMC Water Supply scheme also. The likely customers for the treated effluent identified are Maha Genco, MIHAN and the Irrigation Department with a total potential use 349 MLD by

2041. There will still be a surplus of treated effluent reaching a value of 295 MLD in 2041 which can be offered to new enterprises intending to come up in the Nagpur region with financial benefit to the NMC.



Perspective Demand, Present supply & deficit of water

Year	Water Supply demand (Raw Water)	Present water Supply with Augmentation	Deficit
2011	804	485 + 170 = 655	149
2021	1197		542
2031	1831		1176

All Figures are In MLD

Effluent Quantities availability for Reuse (Lag consideration)				
S.No	Zones	Years		
		2011	2026	2041
1	North Zone	86	151	241
2	Central Zone	104	154	223
3	South Zone	62	110	180
	Total	252	415	644

(All values in MLD)

The potential customers for treated effluent from the NMC Sewerage System and their ultimate demand as now forecast will be as follows:

1. MahaGenco	-	240 MLD
2. Mihan & SEZ	-	39 MLD
3. Irrigation	-	70 MLD

Total	-	349 MLD

CHAPTER – 10..... Environmental Compliance & Social Environmental Management Plan

An environmental and social impact assessment report is required for any infrastructure project to identify and assesses the environmental and social issues involved in the proposed project and ensures that they are taken care of adequately in the formulation and execution of the project and its day to-day operation. The ESR is also required to sensitise the would-be managers of the project to the various environmental and social issues attending the project.

The NMC has in the Terms of Reference for the Consultancy Project required an Environmental and Social Impact Assessment Report to be prepared for the present project along with an Environmental Mitigation Plan (EMP).

CHAPTER -11: Cost Estimate

Basis of Costing / Investment

The project consists of providing a Sewerage System for NMC covering the construction of the collection system, pumping station and conveyance system, treatment plant, low cost sanitation facilities and environment management. The cost for the Sewerage System is estimated based on preliminary design and preliminary quantity survey for all component works involved. Costing will be based on the current (2009 - 2010) MJP / PWD Schedule of Rates.

Possible Phasing of Investment

General

The proposed works require to be phased to suit the availability of funds and to avoid under-utilisation of the scheme in the areas, which are sparsely developed.

As a first step towards phasing, the proposed works require to be split into packages having differing priorities. Each package should be complete making the works fully functional. Tentatively, the packaging may be done in the following manner (Packaging to be finalised in Feasibility Report)

Phase – I: Execution of those sewerage system components that is required up to year 2026.

Phase – II: Execution of those sewerage system components that is required after the year 2026 and to server for the ultimate design period for the year 2041.

The total installation cost of the project is estimated at Rs. 381.79 Crores. (Phase-I: Rs.286.41 Crores and Phase-II: Rs.95.38 Crores) General abstract attached below and breakup cost of abstract is provided in Chapter – 10.

The details of Project Cost / Phasing investment are given in the following table.

NAGPUR MUNICIPAL CORPORATION NAGPUR						
SEWERAGE COLLECTION SYSTEM OF NAGPUR CITY FOR CENTRAL ZONE						
	Description		Phase-I (2011 to 2026)		Phase-II (2026 to 2041)	
Bill.No	Component	Unit	Quantity	Amount in Rs.	Quantity	Amount in Rs.
A	Collection System					
	Providing and laying of gravity sewer in Catchment area of Central Zone	m	233459.00	1647730000	5158.50	49,960,000
B	Providing and laying Sewer Network for Central Zone for NIT Cluster- ~~DELETED~~					
	Proposed seperately 194.13 Km costing 48.42 Crores					
	Collection system for Fringe areas					
	Providing and laying Sewer Network for Central Zone					
	Rehabilitation System					
	Providing and laying Sewer Network for Central Zone					

Bill.No	Component	Unit	Quantity	Amount in Rs.	Quantity	Amount in Rs.
C	Sewage Pumping Station	No	6	282,800,000	2	63150000
	Providing Lift Station for Central Zone-Civil works					
	Electrical & Mechanical Works					
	Electrical works for SPS					
	Electrical works for North Zone					
D	Sewage Pumping Mains					
	Pumping for Central Zone	No	6	253,113,335		
E	Sewerage Treatment Plants					
	Sewerage Treatment Plant for Central Zone				100	760,000,000
F	Misc. works & Land Acquisition					
	Misc. works such as compound wall, Roads, Site drain, Land Acquisition, etc.	Job		20,000,000		10000000
	Total of A + B + C + D + E+F			2,203,643,335		883,110,000
	Centage Charges @ 3%			66,109,300		26,493,300
	Consultacy Charges @ 5%			110,182,167		44,155,500
	GRAND TOTAL			2,379,934,802		953,758,800
	Total Rs. In Crores			237.99		95.38
	Total Rs. In Crores Phase I & II				333.37	
Funding Pattern:		Phase-I	Phase-II			
Sr. No	Particulars					
1	Total Project Cost (Phase-I & II)		237.990	95		
2	Central Government Share		119.000	47.690		
3	State Government Share		47.600	19.080		
4	ULB Share (Total)		71.390	28.610		
SEWERAGE COLLECTION SYSTEM OF N.I.T. PART CLUSTERS OF CENTRAL ZONE						
	Description		Phase-I (2011 to 2026)			
	NIT Collection system		48.42			
				48.42		
	Funding Pattern:					
	Particulars		Phase-I (2011 to 2026)			
	Project Cost of NIT Part in Crores			48.42		
	Central Government Share	50%	of NMC	24.21		
	State Government Share	20%	of NMC	9.68		
	ULB Share (NIT Part)			14.53		
Note:-	1) NIT Part of sewerage collection system in cluster area of Central Zone is marked in map in attached DPR. NIT has to arrange for funding, construction for development of area to be regularized under Gunthewari					

CHAPTER – 12... Institutional Frame Work

Role Of Different Institution Involved In Construction Phase:

- Existing utility (Bhandewadi Sewage Pumping Station and Sewage Treatment Plant) is presently Operated & Maintained by ULB, Nagpur Municipal Corporation (NMC).

- NMC has appointed the Consulting agency for “Design, Planning & Preparation Project Report” the Consulting Agency will also be responsible for Project Management.
- Proposed component and augmentation work under this project will be executed by appointing “Executing Agency” through tendering process.
- Executing Agency should have necessary expertise and desired past experience of undertaking project of similar nature & magnitude.
- Executing agency appointed for execution of above work will also be responsible for Operation and maintenance as an “Operator” for Operation and Maintenance of utility after augmentation.

Responsibility Matrix:

Sr. No.	Responsibility	State / Central Govt.	NMC	Executing Agency	Project Management Consultant	Operator
1	Statutory Permissions		✗			
2	Funding	✗	✗			
3	Project Drawing /Specification.		✗		✗	
4	Patented design of component			✗		
5	Execution of work			✗		
6	Supervision & Quality Monitoring		✗		✗	
7	Operation & Management		✗			✗
8	Revenue Collection		✗			

Period of Operation & Maintenance for operator shall be 5-15years as per the agreement between ULB (NMC) & operator at the time of tendering.

However for any one of the option as discussed above, Operation & maintenance of the of Modern Water Treatment plant, for Minimum period of Five years will be with executing agency for this STP.

CHAPTER -13: Financial Structuring

Sewerage schemes should as far as possible will run on self supporting basis. The criteria for grant-in-aid for sewerage schemes should be fixed so that Zones may, at the outset, know how much funds they have to mobilize by loans and what tariff has to be set to meet loan repayments and O & M costs.

The sewerage tariff should be revised periodically in tune with property tax revision. The efficiency of tariff collection has to be improved from present level. So that the scheme can be sustained as planned. Otherwise, adequate funds may not be left for O & M after meeting loan re-payments and the schemes may fail due to poor upkeep. If sewerage schemes are to be run on self-supporting basis, it is essential that separate accounting be done for them.

The funding pattern as suggested is as follows:

Funding Agency	Source	% of total investment
GOI Grant	JNNURM	50%
GOM Grant	JNNURM	20%
Loan	Financial institutions	15%
Local bodies	NMC	15%

Considering above it is assumed that all the future works under this proposal shall be funded mainly through collection of deposits. The deficit funding after adjusting deposits shall be funded by loans. It is assumed that the loans shall be repayable over a period of 15 years with 2 years moratorium. The loans shall carry 12 % interest and shall be repayable on equated yearly installment basis. During the moratorium period, only simple interest shall be charged.

The Internal Rate of Return (IRR) of Operation and Maintenance phase comes to 19.50%. The Internal Rate of Return (IRR) of the project overall comes to 12.48%.

CHAPTER 14: Project Phasing

Schedule of Tendering / Selection for Procurement of Services:

I) Consultants/ Firm for Supervision and quality assurance:

Nagpur Municipal Corporation (NMC) has already appointed Project Management Consultant for extending their services to assist NMC in following activities,

- Survey & investigation of project,
- Design & Preparation Detailed project report,
- Preparation of Tender documents
- Preparation of construction & working Drawing
- Supervision and Quality assurance during execution of work.

Nagpur Municipal Corporation (NMC) may extend the scope of Project Management Consultant for rendering their services to assist NMC in following activities, Preparation of Project Report in Prescribed format and documentation required by funding organization and necessary follow for same.

II) Consultants/ Firm for Specialized Activity:

This has been already covered in above para. However for any specialized scope of work i. e Design of Modern STP, Third party checking of structural & hydraulic design of components submitted by consultant from well reputed Organization working in field e.g. VNIT, VJTI, IIT NEERI etc.

This activity will be simultaneously done as soon as the project is submitted for technical & financial approval to funding organization

Organisation for construction phase

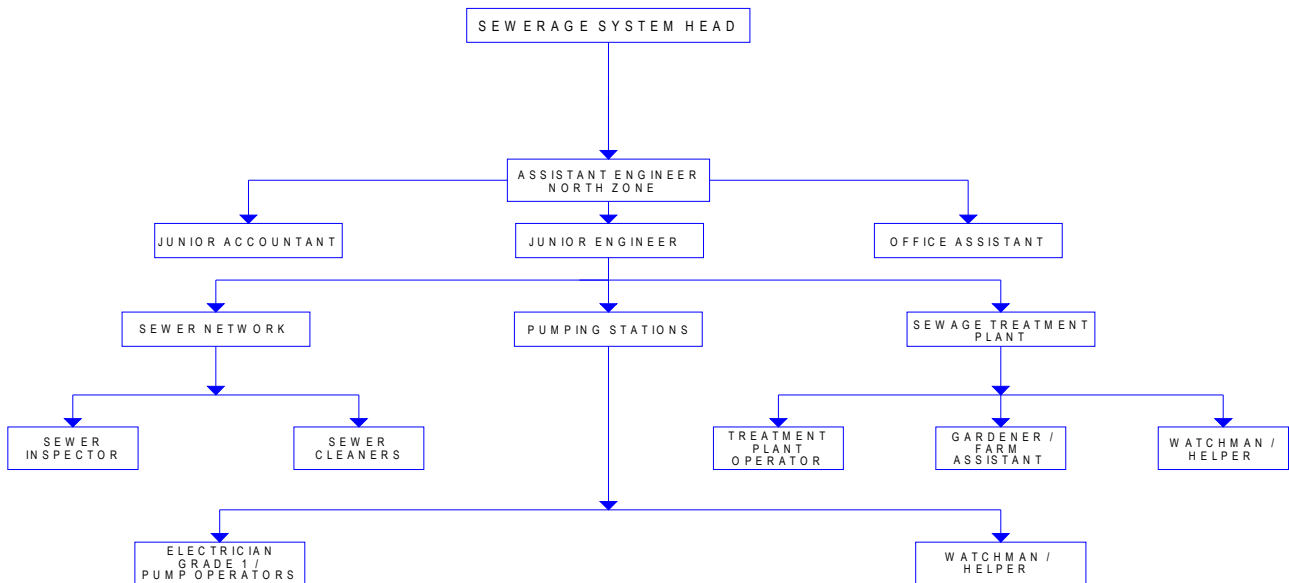
The Phase –I of the Project is **proposed to execute in a span of three years**. Within this contract period all works to have be completed with the coordination of Railways, Highways Dept., MSEB, Telephones and Revenue Dept. The supervision, monitoring and coordination of Project execution may be entrusted to Project Management Consultants or may be executed by local body with a suitable Construction wing.

CHAPTER – 15: Operation & Maintenance Frame work & Planning

Effective O&M of an underground sewerage scheme is critical and the direct responsibility rests with the Sewerage Section Engineer and his support team. The O&M section of the report throws light on specific requirements of an effective O&M plan, problems that can occur due to faulty maintenance and organizational or institutional strengthening requirement. Annual O&M cost of the proposed underground sewerage scheme under expenditure heads of establishment costs (salaries), energy charges, repairs, replacements and administrative expenses are worked out at Rs. 49.00 Crores per year as shown below

O&M Charges		
S. No.	Description	Amount (Crores.)
1	Electrical Energy Charges	25.25
2	Establishment Charges	1.61
3	Other Operation & Maintenance charges	21.36
Total		48.22
Say		49

ORGANOGRAM FOR OPERATION & MAINTENANCE



CHAPTER 16:

Financial Viability & Sustainability

COST OF PROJECT

The total cost of project for Phase I is Rs. 1145 crores, includes construction of collection system & Sewerage Treatment Plants for North, South & Central Zone.

It will require 2 years construction period. The project will be operational in the year 2013-2014.

CHAPTER 17: Project Benefits Assessment (Social Cost Benefit Assessment)

A List of Benefits from Social Perspective:

Sewerage facility is an absolute essential for a city of the size and importance of Nagpur. At present only 66% of the population is served by sewer system. The project will ensure that the entire city population has the facility, particularly the poor areas and the slum areas. The project will help to control unhygienic sanitation practices.

At present sewage treatment is provided only for about 100 MLD of sewage whereas the city is generating about 357 MLD of sewage. The balance goes untreated into the city water ways causing stream pollution. The project will control the situation by ensuring proper sewage treatment. The project is also necessary to enhance the NMC to adhere to the State's Water Pollution Regulations

There is good scope for sewage reclamation for industrial use in the Nagpur neighbourhood. Already reuse proposal have been firmed up for the Mahagenco proposed new power plant. The MIHAN project also is proposing to utilise reclaimed sewage. The sewage project for NMC will make these reclamation proposals by collecting the sewage and treating it to the basic level required for supply for reuse.

The sewage treatment proposal will provide and opportunity for generation of electrical power to an extent of 1100KWH per 100 MLD of sewage treated. The total quantity of sewage to be treated at Nagpur in 2011 will 357 MLD.

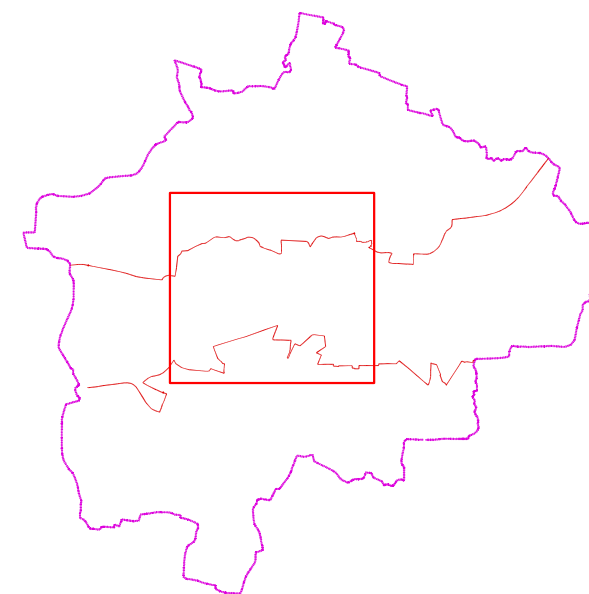
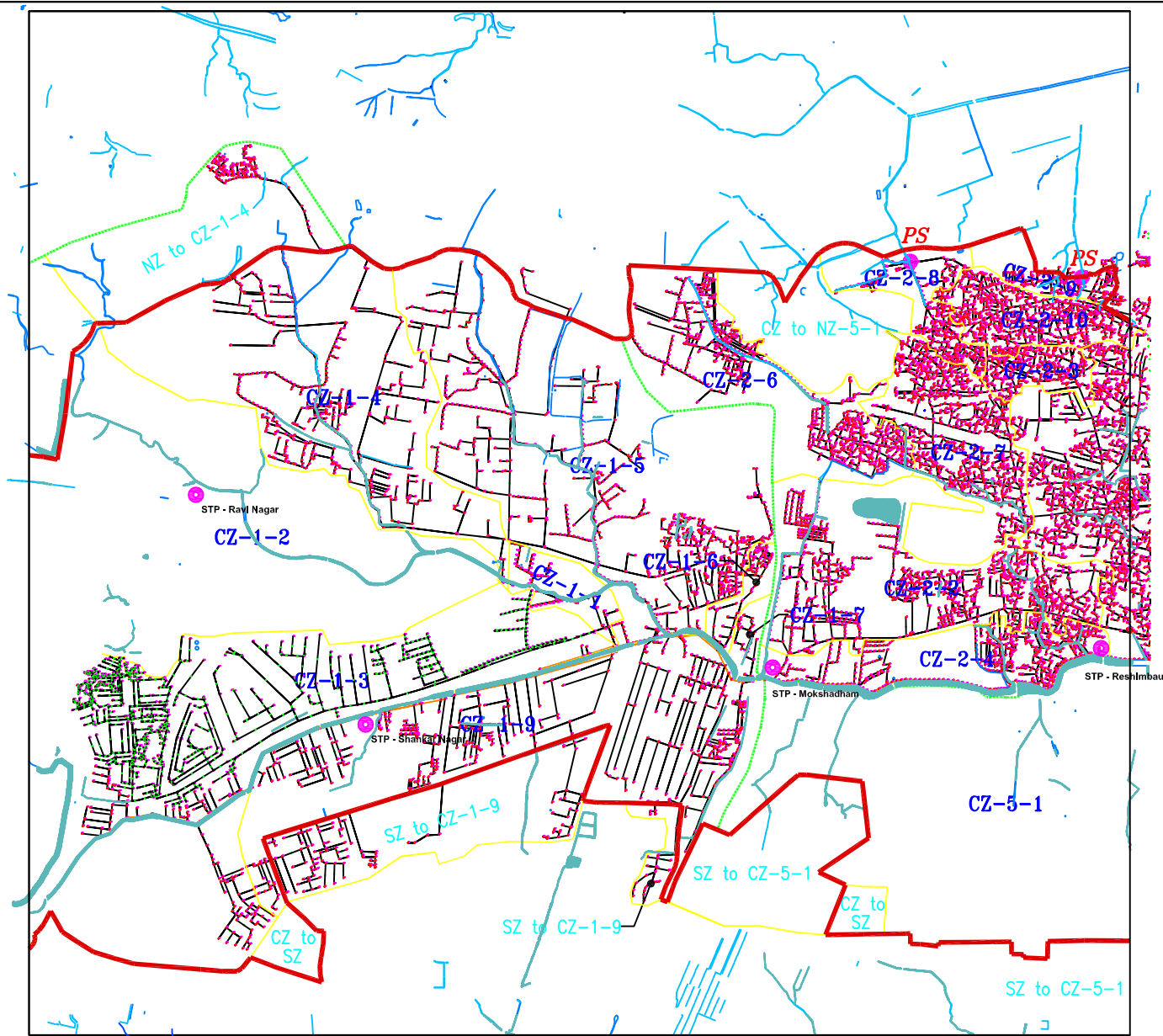
The sewage scheme will help to improve the quality of life in the city in regard to aesthetic by controlling the unsightliness of the city water ways and reducing odour nuisance control of mosquito nuisance and improvement of health.

A List of Negative Externalities:

There will be no adverse impact from the project as it aims only at providing a basic necessity of urban life and as there is no displacement of settled population is involved.

ANNEXURE VII

ANNEXURE VIII



KEY PLAN FOR NAG RIVER

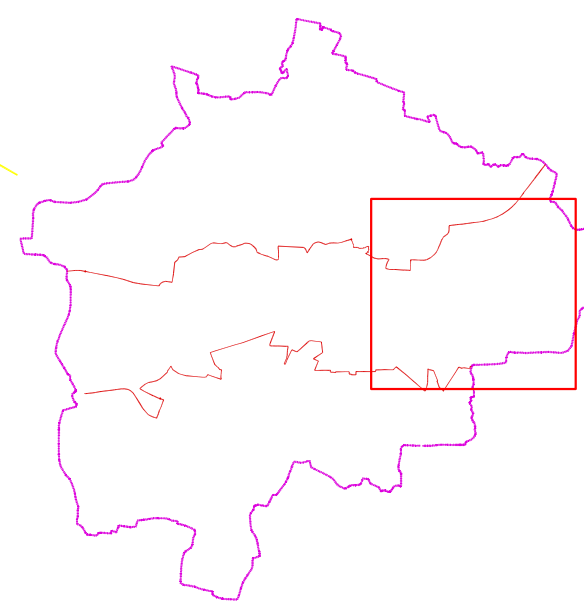
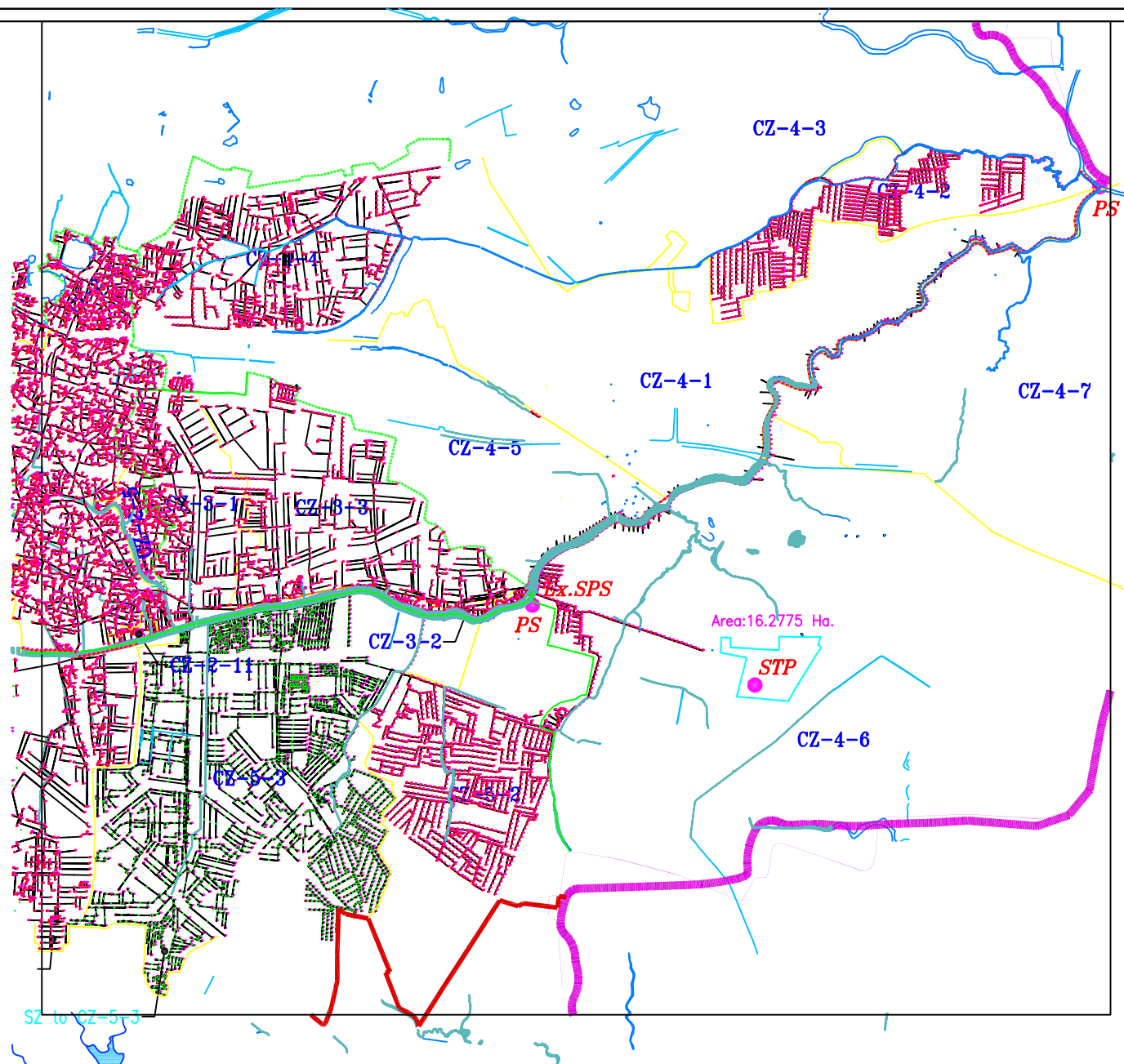
NAG RIVER - SEWERAGE NETWORK - 1

REJUVINATION OF LAKES AND RIVERS OF NAGPUR CITY

SHAH TECHNICAL CONSULTANTS (STC), DINESH RATHI AND ASSOCIATES (DRA) AND GRASSROOTS RESEARCH AND CONSULTANCY (GRC)

N





KEY PLAN FOR NAG RIVER

NAG RIVER - SEWERAGE NETWORK - 2

REJUVINATION OF LAKES AND RIVERS OF NAGPUR CITY

SHAH TECHNICAL CONSULTANTS (STC), DINESH RATHI AND ASSOCIATES (DRA) AND GRASSROOTS RESEARCH AND CONSULTANCY (GRC)

ANNEXURE IX

RATE ANALYSIS

Item of work		CSR Rates	Add for corp limit	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
ITEM No.	1.(i)							
Excavation for foundation / pipe trenches in earth, soils of all types, sand, gravel and soft murum, including removing the excavated material upto a distance of 50 M and lifts as below, stacking and spreading as directed, normal dewatering, preparing the bed for foundation and excluding back filling, etc. complete.		(MJP SOR 2011-12 I.No.1 , Page No.27	Add for corp limit @10%					
	0 to 1.5 m lift	120	12	132	1.32	133.32	5.3	138.65
	1.5 to 3.0 m lift	131	13.1	144.1	1.441	145.541	5.8	151.36
	3.0 to 4.5 m lift	142	14.2	156.2	1.562	157.762	6.3	164.07
	4.5 to 6.0 m lift	153	15.3	168.3	1.683	169.983	6.8	176.78
	6.0 to 7.5 m lift	164	16.4	180.4	1.804	182.204	7.3	189.49
	7.5 to 9.0 m lift	175	17.5	192.5	1.925	194.425	7.8	202.20
	9.0 to 10.5 m lift	186	18.6	204.6	2.046	206.646	8.3	214.91
	10.5 to 12.0 m lift	197	19.7	216.7	2.167	218.867	8.8	227.62
	12.0 to 13.5 m lift	208	20.8	228.8	2.288	231.088	9.2	240.33
	13.5 to 15.0 m lift	219	21.9	240.9	2.409	243.309	9.7	253.04
Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 4%	Finished rate
ITEM No.	1.(ii)							
Excavation for foundation / pipe trenches in hard murum including removing the excavated material upto a distance of 50 M and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding back filling, etc. complete.		(MJP SOR 2011-12 I.No.2 , Page No.27	Add for corp limit @10%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
	0 to 1.5 m lift	134	13.4	147.4	1.474	148.874	6.0	154.83
	1.5 to 3.0 m lift	145	14.5	159.5	1.595	161.095	6.4	167.54
	3.0 to 4.50 m lift	156	15.6	171.6	1.716	173.316	6.9	180.25
	4.5 to 6.0 m lift	167	16.7	183.7	1.837	185.537	7.4	192.96
	6.0 to 7.5 m lift	178	17.8	195.8	1.958	197.758	7.9	205.67
	7.5 to 9.0 m lift	189	18.9	207.9	2.079	209.979	8.4	218.38
	9.0 to 10.5 m lift	200	20	220	2.2	222.2	8.9	231.09

	10.5 to 12.0 m lift	211	21.1	232.1	2.321	234.421	9.4	243.80
	12.0 to 13.5 m lift	222	22.2	244.2	2.442	246.642	9.9	256.51
	13.5 to 15.0 m lift	233	23.3	256.3	2.563	258.863	10.4	269.22
ITEM No.	1.(iii)							
Excavation for foundation / pipe trenches in hard murum and boulders, W.B.M. road including removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking and spreading as directed by Engineer-in-charge, normal dewatering, preparing the bed for foundation and excluding back filling, etc. complete.		(MJP SOR 2011-12 I.No.3 , Page No.27	Add for corp limit @10%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
	0 to 1.5 m lift	150	15	165	1.65	166.65	6.7	173.32
	1.5 to 3.0 m lift	161	16.1	177.1	1.771	178.871	7.2	186.03
	3.0 to 4.50 m lift	172	17.2	189.2	1.892	191.092	7.6	198.74
	4.5 to 6.0 m lift	183	18.3	201.3	2.013	203.313	8.1	211.45
	6.0 to 7.5 m lift	194	19.4	213.4	2.134	215.534	8.6	224.16
	7.5 to 9.0 m lift	205	20.5	225.5	2.255	227.755	9.1	236.87
Item of work		216	Add for corp limit	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
	9.0 to 10.5 m lift	227	22.7	249.7	2.497	252.197	10.1	262.29
	10.5 to 12.0 m lift	238	23.8	261.8	2.618	264.418	10.6	275.00
	12.0 to 13.5 m lift	249	24.9	273.9	2.739	276.639	11.1	287.71
	13.5 to 15.0 m lift	260	26	286	2.86	288.86	11.6	300.42
ITEM No.	1.(iv)							
Excavation for foundation / pipe trenches in soft rock and old cement and lime masonry foundation asphalt road including removing the excavated material upto a distance of 50 M beyond area and lifts as below, stacking as directed by Engineer-in-charges, normal dewatering, preparing the bed for foundation and excluding back filling, etc. complete.		(MJP SOR 2011-12 I.No.5 , Page No.27	Add for corp limit @10%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
	0 to 1.5 m lift	420	42	462	4.62	466.62	18.7	485.29
	1.5 to 3.0 m lift	440	44	484	4.84	488.84	19.6	508.39
	3.0 to 4.50 m lift	460	46	506	5.06	511.06	20.4	531.50
	4.5 to 6.0 m lift	480	48	528	5.28	533.28	21.3	554.61
	6.0 to 7.5 m lift	500	50	550	5.5	555.5	22.2	577.72
	7.5 to 9.0 m lift	520	52	572	5.72	577.72	23.1	600.83
	9.0 to 10.5 m lift	540	54	594	5.94	599.94	24.0	623.94
	10.5 to 12.0 m lift	560	56	616	6.16	622.16	24.9	647.05

	12.0 to 13.5 m lift	580	58	638	6.38	644.38	25.8	670.16
	13.5 to 15.0 m lift	600	60	660	6.6	666.6	26.7	693.26
Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 4%	Finished rate
ITEM No.	1.(v)							
Excavation for foundation / pipe trenches in hard rock and concrete road by chiselling, wedging, line drilling, by mechanical means or by any other means other than blasting including trimming and levelling the bed, removing the excavated material upto a distance of 50 M beyond the area and lifts as below, stacking as directed by Engineer-in-charge, normal dewatering, excluding back filling, etc. complete.		(MJP SOR 2011-12 I.No.7 , Page No.28	Add for corp limit @10%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
	0 to 1.5 m lift	784	78.4	862.4	8.624	871.024	34.8	905.87
	1.5 to 3.0 m lift	804	80.4	884.4	8.844	893.244	35.7	928.97
	3.0 to 4.50 m lift	824	82.4	906.4	9.064	915.464	36.6	952.08
	4.5 to 6.0 m lift	844	84.4	928.4	9.284	937.684	37.5	975.19
	6.0 to 7.5 m lift	864	86.4	950.4	9.504	959.904	38.4	998.30
	7.5 to 9.0 m lift	884	88.4	972.4	9.724	982.124	39.3	1021.41
	9.0 to 10.5 m lift	904	90.4	994.4	9.944	1004.344	40.2	1044.52
	10.5 to 12.0 m lift	924	92.4	1016.4	10.164	1026.564	41.1	1067.63
	12.0 to 13.5 m lift	944	94.4	1038.4	10.384	1048.784	42.0	1090.74
	13.5 to 15.0 m lift	964	96.4	1060.4	10.604	1071.004	42.8	1113.85
ITEM No.	2							
Lowering, laying and jointing in proper grade and alignment Stoneware pipes with cement joints in C.M. (1:1) proportion of following diameters including cost of conveyance from stores to site of work jointing material, labour, giving satisfactory hydraulic testing etc. complete.		(MJP SOR 2011-12 SECTION - I-(V) I.STONWARE No.2 , Page No.72	Add for work in corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
	150 mm dia	94.60	4.73	99.33	0.9933	100.3233	4.0	104.34
	200 mm dia	118.80	5.94	124.74	1.2474	125.9874	5.0	131.03
	225 mm dia	129.80	6.49	136.29	1.3629	137.6529	5.5	143.16
	250 mm dia	141.90	7.095	149	1.48995	150.48495	6.0	156.51
	300 mm dia	166.10	8.305	174.41	1.74405	176.14905	7.0	183.20
Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 4%	Finished rate

ITEM No.	3							
Lowering, laying and jointing in proper grade and alignment R.C.C. pipes with rubber ring joints (excluding cost of rubber ring) including cost of conveyance from stores to site of work jointing material, labour, giving satisfactory hydraulic testing etc. complete as directed by Engineer- in-charge.(For all class of pipes)		(MJP SOR 2011-12 SECTION - I- (VI) I. RCC No.2 , Page No.77	Add for work in corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
a	Dia.150 mm	52	2.6	54.6	0.546	55.146	2.2	57.35
b	Dia.200 mm	68	3.4	71.4	0.714	72.114	2.9	75.00
	Dia.225 mm	81	4.05	85.05	0.8505	85.9005	3.4	89.34
c	Dia.250 mm	90	4.5	94.5	0.945	95.445	3.8	99.26
d	Dia.300 mm	109	5.45	114.45	1.1445	115.5945	4.6	120.22
e	Dia.350 mm	112	5.6	117.6	1.176	118.776	4.8	123.53
f	Dia.400 mm	143	7.15	150.15	1.5015	151.6515	6.1	157.72
g	Dia.450 mm	173	8.65	181.65	1.8165	183.4665	7.3	190.81
h	Dia.500 mm	188	9.4	197.4	1.974	199.374	8.0	207.35
i	Dia.600 mm	239	11.95	250.95	2.5095	253.4595	10.1	263.60
j	Dia.700 mm	271	13.55	284.55	2.8455	287.3955	11.5	298.89
k	Dia.800 mm	312	15.6	327.6	3.276	330.876	13.2	344.11
l	Dia.900 mm	344	17.2	361.2	3.612	364.812	14.6	379.41
m	Dia.1000 mm	376	18.8	394.8	3.948	398.748	15.9	414.70
n	Dia.1100 mm	524	26.2	550.2	5.502	555.702	22.2	577.93
o	Dia.1200 mm	556	27.8	583.8	5.838	589.638	23.6	613.22
p	Dia.1400 mm	619	30.95	649.95	6.4995	656.4495	26.3	682.71
q	Dia.1600 mm	683	34.15	717.15	7.1715	724.3215	29.0	753.30
r	Dia.1800 mm	747	37.35	784.35	7.8435	792.1935	31.7	823.88
r	Dia.1900 mm	811	40.55	851.55	8.5155	860.0655	34.4	894.47
r	Dia.2000 mm	875	43.75	918.75	9.1875	927.9375	37.1	965.06
r	Dia.2100 mm	939	46.95	985.95	9.8595	995.8095	39.8	1035.64
	Dia.2200 mm	1003	50.15	1053.2	10.5315	1063.6815	42.5	1106.23
Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 4%	Finished rate
ITEM No.	22							
Open timbering in trenches of depth more than 1.5 m for shoring and strutting including use of and waste of all necessary timber works including walling, struts, open polling boards / horizontal sheeting, runners, etc. as may be necessary and fixing and removal complete.(Measurements to be taken of the face/area timbered)		MJP CSR 2011-12. I.No 20 P.No 32	Add for corp limit	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate

	A) For Non-water logged area							
	0 to 1.5 m lift	202	10.1	212.1	2.121	214.221	8.6	222.79
	1.5 to 3.0 m lift	228	11.4	239.4	2.394	241.794	9.7	251.47
	3.0 to 4.50 m lift	254	12.7	266.7	2.667	269.367	10.8	280.14
	4.5 to 6.00 m lift	280	14	294	2.94	296.94	11.9	308.82
	6.0 to 7.5 m lift	306	15.3	321.3	3.213	324.513	13.0	337.49
	7.5 to 9.0 m lift	332	16.6	348.6	3.486	352.086	14.1	366.17
	9.0 to 10.5 m lift	358	17.9	375.9	3.759	379.659	15.2	394.85
	10.5 to 12.0 m lift	384	19.2	403.2	4.032	407.232	16.3	423.52
	12.0 to 13.5 m lift	410	20.5	430.5	4.305	434.805	17.4	452.20
	13.5 to 15.0 m lift	436	21.8	457.8	4.578	462.378	18.5	480.87
	B) For water logged area							
	0 to 1.5 m lift	208	10.4	218.4	2.184	220.584	8.8	229.41
	1.5 to 3.0 m lift	227	11.35	238.35	2.3835	240.7335	9.6	250.36
	3.0 to 4.50 m lift	246	12.3	258.3	2.583	260.883	10.4	271.32
	4.5 to 6.00 m lift	265	13.25	278.25	2.7825	281.0325	11.2	292.27
	6.0 to 7.5 m lift	284	14.2	298.2	2.982	301.182	12.0	313.23
	7.5 to 9.0 m lift	303	15.15	318.15	3.1815	321.3315	12.9	334.19
	9.0 to 10.5 m lift	322	16.1	338.1	3.381	341.481	13.7	355.14
	10.5 to 12.0 m lift	341	17.05	358.05	3.5805	361.6305	14.5	376.10
	12.0 to 13.5 m lift	360	18	378	3.78	381.78	15.3	397.05
	13.5 to 15.0 m lift	379	18.95	397.95	3.9795	401.9295	16.1	418.01
Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 4%	Finished rate
ITEM No.	1							
Manufacturing, providing and supplying spirally welded / ERW / SAW / fabricated M. S. pipes (Commercial Quality) including procurements of plates, gas cutting to required size rolling, tack welding assembling in suitable lengths to form pipes, welding on automatic welding machine and forming 'V' edge on both ends of pipes including all taxes (Central and local), railway freight, insurance unloading from railway wagon, loading into truck, transport to stores / site, unloading, stacking, etc, complete as per IS - 3589 and IS-5504 as applicable as per specifications (No negative tolerance in thickness is permissible).		(MJP S0R 2011-12,SECTION- I- XV MS PIPE LAYINF.No.1, Page No.160)	Add for corp limit @ 5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
8 to 12 mm thick								
	2200 mm	38180	1909	40089	400.89	40489.89	1619.6	42109.49
	2400 mm	41670	2083.5	43754	437.535	44191.035	1767.6	45958.68

	2600 mm	44287	2214.35	46501	465.0135	46966.364	1878.7	48845.02
ITEM No.	1							
Transportation within 500 meters, laying in position to correct line and level M.S. with / without outcoating on prepared bed in trenches including marginal cutting wherever required, assembling and tack welding the same. The rate to include loading, unloading hoisting, etc complete as specified.		(MJP SOR 2011-12, SECTION- I- XVIIS PIPE LAYINF.No.6B , Page No.185)	Add for corp limit @ 5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
	8 to 12 mm thick							
	2200 mm	1189	59.45	1248.5	12.4845	1260.9345	50.4	1311.37
	2400 mm	1232	61.6	1293.6	12.936	1306.536	52.3	1358.80
	2600 mm	1277.00	63.85	1340.9	13.4085	1354.2585	54.2	1408.43
Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 4%	Finished rate
ITEM No.	6							
Gas cutting (either square cut or V cut) pipes, plates, etc. of thickness 5 mm to 12 mm		(MJP SOR 2011-12, SECTION- I- XVIIS PIPE LAYINF.No.12	Add for corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
		96	4.8	100.8	1.008	101.808	4.1	105.88
ITEM No.	7							
Welding in all positions with required number of runs, for M.S. pipes internally and / or externally including gausing wherever necessary, fixing appurtenances and other accessories in connection with pipe laying work as per specification. Butt joints with convex fillet welds Lag Lengths		(MJP SOR 2011-12, SECTION- I- XVIIS PIPE LAYINF.No.7 A,B , Page No.185)	Add for corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
But	Plate thickness in mm 12 mm							
		755	37.75	792.75	7.9275	800.6775	32.0	832.71
Lap jt.	Plate thickness in mm 12 mm							
		459	22.95	481.95	4.8195	486.7695	19.5	506.24
ITEM No.	8							

Providing and applying with mechanical arrangement 1:3 proportion cement sand gunite, 40 to 50 mm thick to M. S. pipe surface under 2.1 kg. per sqcm. to 2.80 kg. per sqcm. pressure including removing the loose materials as directed by Engineer-in-charge and including scrapping the surface with wire brushes, degreasing, cleaning by compressed air and providing fixing BRC fabric no.14 as reinforcement, curing for 21 days, disposing off the rebound materials within a lead of 50 M, etc. complete as directed by Engineer-in-charge.		(MJP S0R 2011-12,SECTION- I- XVIIS PIPE LAYINF.No.18 , Page No.190)	Add for corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
		367	18.35	385.35	3.8535	389.2035	15.6	404.77
Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 4%	Finished rate
ITEM No.	9							
Providing and making inner cement mortar lining to M.S. pipes with mechanical devices in cement mortar 1:1 proportion, including cost of all materials, labour, special sand required, machinery, power generation, all equipments and taking necessary access openings and manholes, cuts at suitable intervals as directed by Engineer-in-charge and rewelding the same after done with doubler plates pipes including necessary excavation, refilling concerte breaking and remaking if any, breaking guniting and remaking the same, repainting whereven required with epoxy paint in 3 coats, all dewatering including emptying the pipline and refilling the same after done with (water to be supplied by department free of cost within 5 km. lead at fixed point and all other arrangements to be done by agency), including carrying out "C" value performance test of pipeline, complete job as per the directions of the Engineer-in-charge.		(MJP S0R 2011-12,SECTION- I- XVIIS PIPE LAYINF.No.22 , Page No.192)	Add for corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate

	9 mm thick up to 700 mm above 700 mm							

	9 mm thick	288	14.4	302.4	3.024	305.424	12.2	317.64
	12 mm thick	334	16.7	350.7	3.507	354.207	14.2	368.38
ITEM No.	4							
Refilling of trenches with available excavated stuff with soft material first over pipeling and then hard material in 15cm layers with all leads and lifts including consolidation, surcharging, etc., complete		MJP SOR 2011-12. SECTION E.No 15 P.No 20	Add for corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
		56	2.8	58.8	0.588	59.388	2.4	61.76
Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 4%	Finished rate
ITEM No.	5							
Backfilling of trenches and pits with selected excavated materials brought from outside, watering, refilling and ramming with selected earth for foundation and rounding the bottom of trenches for pipe bedding, consolidation in layers of 15cms including guarding , lighting, fencing the trenches and pits, supporting public utilities such as cables, drains, service pipes, sewers etc., complete		(PWDSOR 2011-12, BD-A.No.7 , Page No.3)	Add for corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
		49	2.45	51.45	0.5145	51.9645	2.1	54.04
ITEM No.	10							
Providing ISI standard Stoneware pipes as per IS-651including all taxes (Central and Local) inspection charges, railway freight, unloading from railway wagon, loading into truck, transport to departmental stores / sites loading / unloading, stacking, etc, complete.		MJP SOR 2011-12. Section I(V) - Stoneware Pipe No.1.P.No 72	Add for local transportation 10 Km	Total	Add for Octroi in corp limit@4%	Total	Add insurance @ 1%	Finished rate
	Dia.150 mm	139	4.2	143.20	5.73	148.93	2.98	151.91
	Dia.200 mm	186	7.48	193.48	7.74	201.22	4.02	205.24
	Dia.225 mm	224	9.62	233.62	9.34	242.96	4.86	247.82
	Dia.250 mm	250	12.02	262.02	10.48	272.50	5.45	277.95
	Dia.300 mm	293	15.3	308.30	12.33	320.63	6.41	327.04
ITEM No.	7							

Proving ISI standard R.C.C. pipes in standard lengths of following class and diameter suitable for eigher collar joints or rubber rings joints, includintg all taxes Central and local), inspection charges, transport to departmental stores/ site, unloading and stacking etc. complete..Pipes with internal cement mortar lining including all taxes, insurance, railway freight, unloading from railway wagon, loading into truck, transport to departmental stores / sites loading / unloading, stacking,		MJP SOR 2011-12. Section I(VI) - RCC Pipe No.7F.P.No 78 (Rubber ring)	Add for with high alumina concrete lining and coating @ 15% & Local transportation for 10 Km	Total	Add for Octroi in corp limit@4%	Total	Add insurance @ 1%	Total
With high alumina concrete lining and coating as			15.00%					
Item of work		CSR Rates	Add for corp limit	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
	Class NP-IV							
	Dia.150 mm	447	67.05	514.05	5.14	519.19	20.77	539.96
	Dia.200 mm	624	93.6	717.6	7.18	724.78	28.99	753.77
	Dia.225 mm	736	110.4	846.4	8.46	854.86	34.19	889.06
	Dia.250 mm	825	123.75	948.75	9.49	958.24	38.33	996.57
	Dia.300 mm	1030	154.5	1184.5	11.85	1196.35	47.85	1244.20
	Dia.350 mm	1730	259.5	1989.5	19.90	2009.40	80.38	2089.77
	Dia.400 mm	2022	303.3	2325.3	23.25	2348.55	93.94	2442.50
	Dia.450 mm	2130	319.5	2449.5	24.50	2474.00	98.96	2572.96
	Dia.500 mm	2762	414.3	3176.3	31.76	3208.06	128.32	3336.39
	Dia.600 mm	2968	445.2	3413.2	34.13	3447.33	137.89	3585.23
	Dia.700 mm	4635	695.25	5330.3	53.30	5383.55	215.34	5598.90
	Dia.800 mm	5676	851.4	6527.4	65.27	6592.67	263.71	6856.38
	Dia.900 mm	6521	978.15	7499.2	74.99	7574.14	302.97	7877.11
	Dia.1000 mm	8373	1255.95	9629	96.29	9725.24	389.01	10114.25
	Dia.1100 mm	9115	1367.25	10482	104.82	10587.07	423.48	11010.56
	Dia.1200 mm	9562	1434.3	10996	109.96	11106.26	444.25	11550.51
	Dia.1400 mm	14256	2138.4	16394	163.94	16558.34	662.33	17220.68
	Dia.1600 mm	18608	2791.2	21399	213.99	21613.19	864.53	22477.72
	Dia.1800 mm	25507	3826.05	29333	293.33	29626.38	1185.06	30811.44
ITEM No.	8							

Providing granular bedding with graded hard broken stone 100% passing through 20mm sieve, 20 to 50% passing through 10mm sieve and 100% retained on 6mm sieve, laying in layers of 15cm thick including ramming, consolidation etc., complete for pipe bedding		(MJPSOR 2011-12, I.No.10(c) P.No 264)						
		1323.3	66.165	1389.5	13.89	1403.36	56.13	1459.50
Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 4%	Finished rate
ITEM No.	9							
Providing and laying in situ following grades of C.C. trap / granite/ quartzite/gneiss metal for bedding including dewatering form work, compacting and curing, finishing etc. complete		(PWDSOR 2011-12, BD-E.No. 4, P.No.10)	Add for work in corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
1:2:4 (M -150) grade (with 12 to 20 mm metal)								
0 - 1.50m depth		2910.00	145.5	3055.5		3055.5	122.22	3177.72
1.5 - 3.0m depth		2910.00	145.5	3055.5		3055.5	122.22	3177.72
3.0 - 4.50m depth		2997.30	149.865	3147.2		3147.165	125.8866	3273.05
4.5 - 6.00m depth		2997.30	149.865	3147.2		3147.165	125.8866	3273.05
6.0 - 7.50m depth		3087.22	154.36095	3241.6		3241.58	129.6632	3371.24
7.5 - 9.0m depth		3087.22	154.36095	3241.6		3241.58	129.6632	3371.24
ITEM No.	10							
Providing and laying in situ Cement concrete of trap/ granite/ quartzite / gneiss metal for RCC work in foundation like raft, grillage, strip foundation and footing of RCC columns and steel stanchions including normal dewatering, formwork, compaction, finishing and curing, etc., complete		(PWDSOR 2011-12, IBD-F No. 2, P.No. 13)	Add for work in corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
In RCC M20								
0 - 1.50 m depth		4100.00	205	4305		4305	172.2	4477.20
1.5 - 3.0 m depth		4100.00	205	4305		4305	172.2	4477.20
3.0 - 4.50 m depth		4223.00	211.15	4434.2		4434.15	177.366	4611.52
4.5 - 6.00 m depth		4223.00	211.15	4434.2		4434.15	177.366	4611.52
6.0 - 7.50 m depth		4349.69	217.4845	4567.2		4567.1745	182.687	4749.86
7.5- 9.0 m depth		4349.69	217.4845	4567.2		4567.1745	182.687	4749.86

Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 4%	Finished rate
ITEM No.	11							
Providing and fixing in position steel bar reinforcement of various diameters for RCC pipes, caps, footings, foundations, slabs, beams, columns, canopies, staircases, newels, chajjas, lintels, pardies, copings, fins, arches, etc., as per detailed designs, drawings and schedules: including cutting, bending, hooking the bars, binding with wires or tack welding and supporting as required etc., complete (including cost of binding wire)		(PWDSOR 2011-12, BD-F.No.19 P.No 27)	Add for work in corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
	Tor steel	54680.00	2734	57414		57414	2296.56	59710.56

ITEM No. 12

Providing and laying RCC (M20) for encasing RCC pipes including the cost fo required formwork, reinforcement and curing etc., complete		(PWDCSR 2011-12, I.No. 5, P.No. 13)	Add for work in corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
In RCC M20								
0 - 1.50 m depth		4100.00	205	4305		4305	172.2	4477.20
1.5 - 3.0 m depth		4100.00	205	4305		4305	172.2	4477.20
3.0 - 4.50 m depth		4223.00	211.15	4434.2		4434.15	177.366	4611.52
4.5 - 6.00 m depth		4223.00	211.15	4434.2		4434.15	177.366	4611.52
6.0 - 7.50 m depth		4349.69	217.4845	4567.2		4567.1745	182.687	4749.86
7.5 - 9.0 m depth		4349.69	217.4845	4567.2		4567.1745	182.687	4749.86
Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 4%	Finished rate
ANCILLARY WORKS								
ITEM No.	13							

Providing and constructing on sewer, B.B. masonry circular manhole concentric cone 1.2 M dia. at bottom and 0.5 M at top and upto a depth of 2 M with 23 cm brick work in cement mortar in CM 1:4 proportion excluding excavation including foundation concrete 250 mm thick and haunches and channels in c.c. 1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 Kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56 cm dia.etc. complete as directed by Engineer-in-charge.		(MJP SOR 2011-12, SECTION - (XXI)I.No. 6 P.No. 244)	Add for work in corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
	Depth up to 1.5 M	15531.00	776.55	16308	163.0755	16470.626	658.8	17129.45
	Depth up to 2.0 M	17820.00	891	18711	187.11	18898.11	755.9	19654.04
	Depth up to 2.5 M	20109.00	1005.45	21114	211.1445	21325.595	853.0	22178.62
ITEM No.	14							
Providing and constructing on sewer, B.B. masonry circular manhole concentric cone 1.5 M dia. at bottom and 0.5 M at top and upto a depth of 5 M with 23 cm brick work in cement mortar in CM 1:4 proportion excluding excavation including foundation concrete 250 mm thick and haunches and channels in c.c. 1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 Kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56 cm dia.etc. complete as directed by Engineer-in-charge.		(MJP SOR 2011-12, SECTION - (XXI)I.No. 7 P.No. 244)	Add for work in corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
	Depth up to 2.5 M	24525.00	1226.25	25751	257.5125	26008.763	1040.4	27049.11
	Depth up to 3.0 M	28990.00	1449.5	30440	304.395	30743.895	1229.8	31973.65
	Depth up to 3.5 M	33455.00	1672.75	35128	351.2775	35479.028	1419.2	36898.19
Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 4%	Finished rate
	Depth up to 4.0 M	37920.00	1896	39816	398.16	40214.16	1608.6	41822.73
	Depth up to 4.5 M	42385.00	2119.25	44504	445.0425	44949.293	1798.0	46747.27
	Depth up to 5.0 M	46850.00	2342.5	49193	491.925	49684.425	1987.4	51671.80
	Depth up to 2.0 M	20060.00	1003	21063	210.63	21273.63	850.9	22124.58
ITEM No.	15							

Providing and constructing on sewer, B.B. masonry circular manhole concentric cone 1.5 M dia. at bottom and 0.5 M at top and upto a depth of 9 M with 23 cm brick work in cement mortar in CM 1:4 proportion excluding excavation including foundation concrete 250 mm thick and haunches and channels in c.c. 1:2:4 proportion, finishing channels in smooth rendering, providing C.I. dapuri type steps each weighing 5.5 Kg., 1:2:4 coping and providing and fixing approved make and quality S.F.R.C. frame and cover of 56 cm dia.etc. complete as directed by Engineer-in-charge.		(MJP SOR 2011-12, SECTION - (XXI)I.No. 8 P.No. 245)	Add for work in corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
	Depth up to 5.5 M	57549.00	2877.45	60426	604.2645	61030.715	2441.2	63471.94
	Depth up to 6.0 M	63094.00	3154.7	66249	662.487	66911.187	2676.4	69587.64
	Depth up to 6.5 M	68639.00	3431.95	72071	720.7095	72791.66	2911.7	75703.33
	Depth up to 7.0 M	74184.00	3709.2	77893	778.932	78672.132	3146.9	81819.02
	Depth up to 7.5 M	79729.00	3986.45	83715	837.1545	84552.605	3382.1	87934.71
	Depth up to 8.0 M	85274.00	4263.7	89538	895.377	90433.077	3617.3	94050.40
	Depth up to 8.5 M	90819.00	4540.95	95360	953.5995	96313.55	3852.5	100166.09
	Depth up to 9.0 M	96364.00	4818.2	101182	1011.822	102194.02	4087.8	106281.78
Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 4%	Finished rate
DRANAIGE DROPS								
ITEM No.	16							
Providing S.W. or R.C. C pipes in vertical drop arrangement including providing 150mm dia S.W. and R.C.C. pipe fixed in B.B. masonry of manhole at the required level including providing 150mm dia double tee, 150mm dia right angled bend, encasing in b.B. masonry 1:4 proportion all around the pipe, double tee, bend upto the foundation of manhole., jointing , cutting , filleting including neat cement rendering, plugging the opening with jungle wood knob complete as directed by Engineer-in-charge (0.60 M depth) excluding cost of chamber.		(MJP SOR 2011-12, SECTION - (XXI)I.No. 10 to 16, P.No. 246)	Add for work in corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate

For 150 mm dia

0.60m - 1.00m depth	2364.00	118.2	2482.2	24.822	2507.022	100.3	2607.30
1.00m - 1.50m depth	2975.00	148.75	3123.8	31.2375	3154.9875	126.2	3281.19
1.50m - 2.0m depth	3586.00	179.3	3765.3	37.653	3802.953	152.1	3955.07
2.0m - 2.50m depth	4197.00	209.85	4406.9	44.0685	4450.9185	178.0	4628.96
2.5m - 3.0m depth	4808.00	240.4	5048.4	50.484	5098.884	204.0	5302.84
3.0m - 3.50m depth	5419.00	270.95	5690	56.8995	5746.8495	229.9	5976.72
3.5m - 4.0m depth	6030.00	301.5	6331.5	63.315	6394.815	255.8	6650.61
4.0m - 4.5m depth	6641.00	332.05	6973.1	69.7305	7042.7805	281.7	7324.49
For 200 mm dia							
0.60m - 1.00m depth	3024.00	151.2	3175.2	31.752	3206.952	128.3	3335.23
1.00m - 1.50m depth	3754.00	187.7	3941.7	39.417	3981.117	159.2	4140.36
1.50m - 2.0m depth	4484.00	224.2	4708.2	47.082	4755.282	190.2	4945.49
2.0m - 2.50m depth	5214.00	260.7	5474.7	54.747	5529.447	221.2	5750.63
2.5m - 3.0m depth	5944.00	297.2	6241.2	62.412	6303.612	252.1	6555.76
3.0m - 3.50m depth	6674.00	333.7	7007.7	70.077	7077.777	283.1	7360.89
3.5m - 4.0m depth	7404.00	370.2	7774.2	77.742	7851.942	314.1	8166.02
4.0m - 4.5m depth	8134.00	406.7	8540.7	85.407	8626.107	345.0	8971.15
Item of work	CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 1%	Finished rate
For 250 mm dia							
0.60m - 1.00m depth	3643.00	182.15	3825.2	38.2515	3863.4015	154.5	4017.94
1.00m - 1.50m depth	4551.00	227.55	4778.6	47.7855	4826.3355	193.1	5019.39
1.50m - 2.0m depth	5459.00	272.95	5732	57.3195	5789.2695	231.6	6020.84
2.0m - 2.50m depth	6367.00	318.35	6685.4	66.8535	6752.2035	270.1	7022.29
2.5m - 3.0m depth	7275.00	363.75	7638.8	76.3875	7715.1375	308.6	8023.74
3.0m - 3.50m depth	8183.00	409.15	8592.2	85.9215	8678.0715	347.1	9025.20
3.5m - 4.0m depth	9091.00	454.55	9545.6	95.4555	9641.0055	385.6	10026.65
4.0m - 4.5m depth	9999.00	499.95	10499	104.9895	10603.94	424.2	11028.10
For 300 mm dia							
0.60m - 1.00m depth	4304.00	215.2	4519.2	45.192	4564.392	182.6	4746.97
1.00m - 1.50m depth	5293.00	264.65	5557.7	55.5765	5613.2265	224.5	5837.76
1.50m - 2.0m depth	6282.00	314.1	6596.1	65.961	6662.061	266.5	6928.54
2.0m - 2.50m depth	7271.00	363.55	7634.6	76.3455	7710.8955	308.4	8019.33
2.5m - 3.0m depth	8260.00	413	8673	86.73	8759.73	350.4	9110.12
3.0m - 3.50m depth	9249.00	462.45	9711.5	97.1145	9808.5645	392.3	10200.91
3.5m - 4.0m depth	10238.00	511.9	10750	107.499	10857.399	434.3	11291.70
4.0m - 4.5m depth	11227.00	561.35	11788	117.8835	11906.234	476.2	12382.48

For 400 mm dia								
0.60m - 1.00m depth		6113.00	305.65	6418.7	64.1865	6482.8365	259.3	6742.15
1.00m - 1.50m depth		7581.00	379.05	7960.1	79.6005	8039.6505	321.6	8361.24
1.50m - 2.0m depth		9049.00	452.45	9501.5	95.0145	9596.4645	383.9	9980.32
2.0m - 2.50m depth		10517.00	525.85	11043	110.4285	11153.279	446.1	11599.41
2.5m - 3.0m depth		11985.00	599.25	12584	125.8425	12710.093	508.4	13218.50
3.0m - 3.50m depth		13453.00	672.65	14126	141.2565	14266.907	570.7	14837.58
3.5m - 4.0m depth		14921.00	746.05	15667	156.6705	15823.721	632.9	16456.67
4.0m - 4.5m depth		16389.00	819.45	17208	172.0845	17380.535	695.2	18075.76
Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 4%	Finished rate
For 500 mm dia								
0.60m - 1.00m depth		8069.00	403.45	8472.5	84.7245	8557.1745	342.3	8899.46
1.00m - 1.50m depth		9854.00	492.7	10347	103.467	10450.167	418.0	10868.17
1.50m - 2.0m depth		11639.00	581.95	12221	122.2095	12343.16	493.7	12836.89
2.0m - 2.50m depth		13424.00	671.2	14095	140.952	14236.152	569.4	14805.60
2.5m - 3.0m depth		15209.00	760.45	15969	159.6945	16129.145	645.2	16774.31
3.0m - 3.50m depth		16994.00	849.7	17844	178.437	18022.137	720.9	18743.02
3.5m - 4.0m depth		18779.00	938.95	19718	197.1795	19915.13	796.6	20711.74
4.0m - 4.5m depth		20564.00	1028.2	21592	215.922	21808.122	872.3	22680.45
For 600 mm dia								
0.60m - 1.00m depth		10144.00	507.2	10651	106.512	10757.712	430.3	11188.02
1.00m - 1.50m depth		12111.00	605.55	12717	127.1655	12843.716	513.7	13357.47
1.50m - 2.0m depth		14078.00	703.9	14782	147.819	14929.719	597.2	15526.91
2.0m - 2.50m depth		16045.00	802.25	16847	168.4725	17015.723	680.6	17696.35
2.5m - 3.0m depth		18012.00	900.6	18913	189.126	19101.726	764.1	19865.80
3.0m - 3.50m depth		19979.00	998.95	20978	209.7795	21187.73	847.5	22035.24
3.5m - 4.0m depth		21946.00	1097.3	23043	230.433	23273.733	930.9	24204.68
4.0m - 4.5m depth		23913.00	1195.65	25109	251.0865	25359.737	1014.4	26374.13
ITEM No.	17							
House Service Connection Supply, conveying to site laying and jointing of 150 mm dia. SW pipes as per IS:651-1992 including barricading of trenches, earthwork excavation (including for bedding) in all soils, refilling of trenches with excavated earth etc., complete for house service connections from property limits to manholes on sewers.		Rate Analysis	Add for corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate

		557	27.85	584.85	5.8485	590.6985	23.6	614.33
Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 4%	Finished rate
ITEM No.	18							
Providing and fixing in position steel fibre reinforced concrete (S.F.R.C.) frame and covers of approved make including loading, unloading transportation, all taxes etc., complete as directed by Engineer-in-charge (20 tonnes capacity)		MJP CSR 2011-12. I.No 17 P.No 247	Add for corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
540 mm dia								
		2438	121.9	2559.9	25.599	2585.499	103.4	2688.92
ITEM No.	19							

Providing and constructing RCC ventilating shaft of diameters and height mentioned below with required number of RCC 15 x 15cm size columns and RCC circular slab or dome over the pillars in M-150 including cost of all material and labour, providing and fixing steel or wooden frame & providing & fixing G.I. flyproof mesh of 26 gauge and providing and applying in 3 coats of oil paint to wooden or steel frame and cement paint to concrete structure, etc., complete as directed by Engineer-in-charge	MJP CSR 2011-12. I.No 8 P.No 256	Add for corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
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1.2m dia x 1.8m height		8100	405	8505	85.05	8590.05	343.6	8933.65
ITEM No.	20							
Dewatering the excavated trenches and pools of water in the pipe trenches by using pumps and other devices including disposing off water to safe distance as directed by Engineer-in-charge (including cost of machinery, labour,fuel) etc., complete		MJP SOR 2011-12. SECTION E.No 14 P.No 30	Add for corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
		56	2.8	58.8	0.588	59.388	2.4	61.76

Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 1%	Finished rate
ITEM No.	21							
Providing Low Cost Sanitation								
								15000
ITEM No.								
21								

House Service Connection

Qty

Unit

Rate

Supply, conveying to site laying and jointing of 150 mm dia. SW pipes as per IS:651-1992 including barricading of trenches, earthwork excavation (including for bedding) in all soils, refilling of trenches with excavated earth etc., complete for house service connections from property limits to manholes on sewers. (including embedding of pipe,, disposal of surplus material etc)

	Cost of 150 mm S.W.pipe	1	m	151.91	151.90656			
	L/L & jointing	1	m	104.34	104.337			
	Excavation in H/M & B	0.75	cum	154.83	116.12175			
	Back filling	1.13	cum	54.04	61.06972			
	Dismantling BB/CC work				100			
	Reinstating BB/CC work/chamber etc	0.025	cum	920.51	23.012825			
	Reinstating Road work							
	Disposal of surplus stuff							
				Total	556.447855			557
Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 1%	Finished rate
ITEM No.	21							

Laying of M.S cover pipes ,minimum 2.00 m below IRDP Roads, cement concrete and major roads by horizontal directional drilling method / push on method including all operations such as making pits for installation of machine, excavation starting and end point for laying of pipes etc. complete. (Including cost of cover pipe but excluding cost of inner pipe)		Rate Analysis						
900 mm dia								39396.5
ITEM No.	21							
Refilling the trenches with available excavated stuff with soft material first over pipeline and then hard material in 15 cm layers with all leads and lifts including consolidation, surcharging, etc. complete.		MJP SOR 2011-12. SECTION E.No 15 P.No 30	Add for corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
		56	2.8	58.8	0.588	59.388	2.4	61.76
ITEM No.	23							
Reinstating the road surface with excavation, 30 cm soling,murum blindage, 40 mm size metal,25 mm thick premixed bitumen,carpet with hot mixed seal coat, including compacting at all stages etc.complete-		As per rate analysis	Add for work in corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
For WBM & Tar road (other than IRDP) 100-400 mm								
		834.614	41.7307	876.34	8.763447	885.10815	35.4	920.51
IRDP & PWD/ corp cement roads reinstating								
		1375						1375
Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 4%	Finished rate
ITEM No.	24							

Disposal of surplus excavated stuff by truck including loading, unloading and stacking as directed lead upto 20 Km.		(MJP SOR 2011-12, statement No- VI P.No 15)	Add for work in corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
		456.68	22.834	479.51	4.79514	484.30914	19.4	503.68
ITEM No.	25							
Detecting under ground services such as telephone,electric cables,water & sewer pipe line by advance technology/ by trial pits including all operations such as installation of system, etc. complete.along the rout of pipe line.								
								25000
ITEM No.	3							
Dewatering the excavated trenches and pools of water in the building trenches / pipeline trenches, well works by using pumps and other devices including disposing off water to safe distance as directed by Engineer-in-		MJP SOR 2011-12. SECTION E.No 14 P.No 30	Add for corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
		56	2.8	58.8	0.588	59.388	2.4	61.76
Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 4%	Finished rate
ITEM No.	12							
Manufacturing, providing and supplying spirally welded / ERW / SAW / fabricated M. S. pipes (Commercial Quality) including procurements of plates, gas cutting to required size rolling, tack welding assembling in suitable lengths to form pipes, welding on automatic welding machine and forming 'V' edge on both ends of pipes including all taxes (Central and local), railway freight, insurance unloading from railway wagon, loading into truck, transport to stores / site, unloading, stacking, etc, complete as per IS - 3589 and IS-5504 as applicable as per specifications (No negative tolerance in thickness is permissible).		(MJP SOR 2011-12,SECTION- I- XV MS PIPE LAYINF.No.1, Page No.160)						

	8 to 12 mm thick							
	2200 mm	38180						
	2400 mm	41670						
	2600 mm	44287						
ITEM No.	13							
Transportation within 500 meters, laying in position to correct line and level M.S. with / without outcoating on prepared bed in trenches including marginal cutting wherever required, assembling and tack welding the same. The rate to include loading, unloading hoisting, etc complete as specified.		(MJP S0R 2011-12, SECTION- I- XVIIS PIPE LAYINF.No.6B , Page No.185)						
	8 to 12 mm thick							
	2200 mm	1189.00	59.45	1248.5	12.4845	1260.9345	50.4	1311.37
	2400 mm	1232.00	61.6	1293.6	12.936	1306.536	52.3	1358.80
	2600 mm	1277.00	63.85	1340.9	13.4085	1354.2585	54.2	1408.43
Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 1%	Finished rate
Gas cutting (either square cut or V cut) pipes, plates, etc. of thickness 5 mm to 12 mm		(MJP S0R 2011-12, SECTION- I- XVIIS PIPE LAYINF.No.12 A,B , Page No.188)	Add for corp limit@	Total	Add insurance @ 1%			Finished rate
		96	4.8	100.8	1.008	101.808	4.1	105.88
ITEM No.	38							
Welding in all positions with required number of runs, for M.S. pipes internally and / or externally including gausing wherever necessary, fixing appurtenances and other accessories in connection with pipe laying work as		(MJP S0R 2011-12, SECTION- I- XVIIS PIPE LAYINF.No.7 A B Page						

But	Plate thickness in mm 12 mm							
		755	37.75	792.75	7.9275	800.6775	32.0	832.71
Lap it.	Plate thickness in mm 12 mm							
		459	22.95	481.95	4.8195	486.7695	19.5	506.24
ITEM No.	39							
Providing and applying with mechanical arrangement 1:3 proportion cement sand gunite, 40 to 50 mm thick to M. S. pipe surface under 2.1 kg. per sqcm. to 2.80 kg. per sqcm. pressure including removing the loose materials as directed by Engineer-in-charge and including scrapping the surface with wire brushes, degreasing, cleaning by compressed air and providing fixing BRC fabric no.14 as reinforcement, curing for 21 days, disposing off the rebound materials within a lead of 50 M, etc. complete as directed by Engineer-in-charge.		(MJP S0R 2011-12,SECTION- I- XVIIS PIPE LAYINF.No.18 , Page No.190)						
		367.00	18.35	385.35	3.8535	389.2035	15.6	404.77
Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 4%	Finished rate
ITEM No.	40							
Providing and making inner cement mortar lining to M.S. pipes with mechanical devices in cement mortar 1:1 proportion, including cost of all materials, labour, special sand required, machinery, power generation, all equipments and taking necessary access openings and manholes, cuts at suitable intervals as directed by Engineer-in-charge and		(MJP S0R 2011-12,SECTION- I- XVIIS PIPE LAYINF.No.22 , Page No.192)						
	9 mm thick up to 700 mm above 700 mm dia.12 thick							
	9 mm thick	288.00	14.4	302.4	3.02	305.42	12.22	317.64
	12 mm thick	334.00	16.7	350.7	3.51	354.21	14.17	368.38
ITEM No.	41							

Dismantling pipeline of S.W/RCC pipe including cost of necessary excavation and refilling of trenches., breaking the joints, lifting the pipes and stacking to the place as directed by Engineer-in-charge with all leads and lifts including cleaning the surface., etc.,complete		(MJP 2011-12,Section H-Mis .No.11 B,A, Page No.45)					
GI/AC/PVC/SW/HDPE Pipes							
For 150 mm dia		78	3.90	81.90	0.82	82.72	3.31
For 200 mm dia		87	4.35	91.35	0.91	92.26	3.69
For 250 mm dia		95	4.75	99.75	1.00	100.75	4.03
For 300 mm dia		103	5.15	108.15	1.08	109.23	4.37
For 225 mm dia		91	4.55	95.55	0.96	96.51	3.86
MS/RCC/CI/PSC Pipes							
For 150 mm dia		130	6.50	136.50	1.37	137.87	5.51
Item of work		CSR Rates	Add for corp limit	Total	Add insurance @	Total	Add for Vat @ 4%
For 200 mm dia		144	7.20	151.20	1.51	152.71	6.11
For 250 mm dia		158	7.90	165.90	1.66	167.56	6.70
For 300 mm dia		173	8.65	181.65	1.82	183.47	7.34
For 350 mm dia		194	9.70	203.70	2.04	205.74	8.23
For 400 mm dia		211	10.55	221.55	2.22	223.77	8.95
For 450 mm dia		239	11.95	250.95	2.51	253.46	10.14
For 500 mm dia		251	12.55	263.55	2.64	266.19	10.65
For 600 mm dia		307	15.35	322.35	3.22	325.57	13.02
For 700 mm dia		359	17.95	376.95	3.77	380.72	15.23
For 225 mm dia		151	7.55	158.55	1.59	160.14	6.41
For 800 mm dia		429	21.45	450.45	4.50	454.95	18.20
For 900 mm dia		504	25.20	529.20	5.29	534.49	21.38
For 1000 mm dia		584	29.20	613.20	6.13	619.33	24.77
For 1100 mm dia		669	33.45	702.45	7.02	709.47	28.38
For 1200 mm dia		759	37.95	796.95	7.97	804.92	32.20
For 1300 mm dia		854	42.70	896.70	8.97	905.67	36.23
For 1400 mm dia		954	47.70	1001.70	10.02	1011.72	40.47
For 1500 mm dia		1064	53.20	1117.20	11.17	1128.37	45.13
ITEM No.	42						

Providing, constructing cofferdam in river basin/ dam storage as per type design including excavation, filling the middle portion with B.C. soil (in gunny bags if required). Providing impervious / semi pervious material on both side of B.C. soil (in gunny bags if required) including ramming, compacting to the satisfaction of Engineer-in-charge, till the completion of work including dismantling cofferdam after completion of works and disposing off the material as per direction of Engineer-in-charge	(MJP SR 2010-11,Section - J (Well Sinking).No1 , Page No.249)							
		495	24.75	519.75	5.1975	524.9475	21.0	545.95

RATE ANALYSIS for Pumping mains

		Providing	Guniting /Linimg/ Epoxy painting	Specials/ valves	L/L	Excava tion	Refilling	Misc/Cha mbers	Total	
10227785	400	635171.70	635.1717	641523	35100	13865.30	6176.40	25000	1357471.99	13575
10227785		204591.70		206638	11100	13865.30	6176.40	25000	467371.02	4673.7
7		167202.70		168875	8800	13865.30	6176.40	25000	389919.13	3899.2
10227785	1200	2457900	2457.9	2482479	75000	13865.30	6176.40	25000	5062878.60	50629
10227785	1400	2868800	2868.8	2897488	75000	13865.30	6176.40	25000	5889198.50	58892
10227785	1500	3066000	3066	3096660	75000	13865.30	6176.40	25000	6285767.70	62858

RATE ANALYSIS

Providing and making inner cement mortar lining to M.S. pipes with mechanical devices in cement mortar 1:1 proportion, including cost of all materials, labour, special sand required. machinery.		(MJP SOR 2011-12,SECTION- I- XVIII PIPE LAYING No.22 , Page No.192)	Add for corp limit@5%	Total	Add insurance @ 1%	Total	Add for Vat @ 4%	Finished rate
400 mm dia 10mm thick								
	10 mm thick	5759	287.95	6046.95	60.4695	6107.42	244.3	6351.72
1200 mm dia 10mm thick								
	10 mm thick	17596	879.8	18475.8	184.758	18660.56	746.4	19406.98
1400 mm dia 10mm thick								
	10 mm thick	20504	1025.2	21529.2	215.292	21744.49	869.8	22614.27
1500 mm dia 10mm thick								
	10 mm thick	22686	1134.3	23820.3	238.203	24058.5	962.3	25020.84
DI pipe -K9								
200 mm dia								
		1855	92.75	1947.75	19.4775	1967.228	78.7	2045.92
150 mm dia								
		1516	75.8	1591.8	15.918	1607.718	64.3	1672.03